Forest certification in New Zealand: How are we doing?

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Forest Certification

Increasing concerns about the effects of indiscriminate logging on the environment, on people linked to a forest, and on forests themselves has led to the development of Forest Certification (FC) schemes. These schemes are aimed at ensuring that forest management practices meet a required set of standards as set out by a certification programme. Typically, a certification programme is aimed at ensuring that forest management and operations meet minimum standards for preserving the forest base and for related environmental issues. As well as considering the land use, the scheme may also make provisions for forest community and social aspects. Tracking the wood from the retailer through the processing chain to its original certified source, known as Chain of Custody, is required for Forest Certification to be meaningful but is handled separately to certification.

Globally, there are many FC schemes and considerable variation in assessment criteria and consultation processes. Comparisons between schemes can be found in Kanowski *et al* (1999), and Fletcher and Hansen (1999) discuss the trends in North America and Europe. Thorpe (1998), Bigsby (1999), Purey-Cust (1999), Gray (2000) and Palmer (2002) describe some of the recent Forest Certification developments in New Zealand.

Forest Certification provides an opportunity for producers to develop a market edge for their products, with some consumers willing to pay more for products from sustainably managed sources (Ozanne & Bigsby 1997, Neilson 1998, Tissari 2001). A survey of consumers, architects and retailers by Ozanne et al. (1999) indicated that these groups would be willing to pay up to 22% more for certified wood products. Wood products from New Zealand which are certified

can be expected to have improved market access (NZFOA, 2002b).

This paper briefly describes the certification process in New Zealand and related developments. Certification outcomes are compared to determine common themes in the strengths and weaknesses identified in the initial assessments of eleven certified companies. Finally, the results of this analysis are discussed and implications for the ongoing certification of New Zealand forests are described.

chambers to encourage debate from members about environmentally appropriate, socially beneficial, and economically viable management of the world's forests. The funding for the FSC comes from charitable foundations, government donors, membership subscriptions and accreditation fees, but to remain independent the FSC does not accept any funding from industry. The FSC administers a Forest Certification scheme that has certified over 31 million hectares through 462 certificates in 56 countries (as at 17th December, 2002)².

FSC has accredited a number of independent thirdparty organisations (i.e. not affiliated to either the industry or FSC) as certification bodies or certifiers. These certifiers are then able to carry out FSC certification audits around the world to determine whether forests are "well-managed". Under the FSC guidelines for FSC Certification Bodies, a certifier usually contracts and trains local experts in different countries to assist with the audits. Each audit is assessed against a set of standards based on the FSC Principles and Criteria (FSC P&C) - see Box 1.

One essential element that the FSC certification process offers, more so than many of the other schemes, is that consultation with stakeholders is an integral part of the audit at all stages. Stakeholders include anyone affected by the forest operations, whether directly or indirectly, and may include neighbours and neighbouring organisations, local communities, organisations that use the forest including schools and tourism, broad-based interest groups such as environmental societies, and indigenous people who have some direct or indirect link to the forest.

Box I: The 10 FSC Principles and Criteria

Principle #1: Compliance with laws and FSC principles (6 criteria)

Principle #2: Tenure and use rights and responsibilities (3)

Principle #3: Indigenous peoples' rights (4)

Principle #4: Community relations and workers' rights (5)

Principle #5: Benefits from the forest (6)

Principle #6: Environmental impact (10)

Principle #7: Management plan (4)

Principle #8: Monitoring and assessment (5)

Principle #9: Maintenance of high conservation value forests (4)

Principle #10: Plantations (9)

FSC Certification

In 1993, representatives of timber users, traders, environmental and human-rights organisations from around the world formed the Forest Stewardship Council (FSC)¹. The FSC membership² is structured into three

www.fscoax.org

² Currently there are 614 members of the FSC, of which 7 are from New Zealand (<u>www.fscoax.org</u> List of FSC members, FSC Doc5.2.2. December 10, 2002).

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Table 1: Companies with FSC Forest Certification in New Zealand (as	us at 31st August, 2002)

Forest Company	Area (Ha)	Certification body
Fletcher Challenge Forests Ltd	360,000	Scientific Certifications systems (SCS) ⁵
Timberland West Coast	51.025	SGS Qualifor (SGS) ⁶
NZ Forest Managers Ltd	48,462	SGS Qualifor (SGS)
Pan Pac Forest Products Ltd	42,958	SGS Qualifor (SGS)
Ernslaw One Ltd	29,919	SGS Qualifor (SGS)
Wenita Forest Products	29,720	SGS Qualifor (SGS)
Winstone Pulp International	24,946	SGS Qualifor (SGS)
City Forests Ltd	15,845	SGS Qualifor (SGS)
Craigpine Timber Ltd	2,305	SGS Qualifor (SGS)
P F Olsen and Co. Ltd	$4,526^{\dagger}$	SmartWood Rainforest Alliance (SW) ⁷
Gowan Hills Trust	551	SmartWood Rainforest Alliance (SW)
Total FSC Certified*	610,257	

^{*} Another company was previously awarded FSC certification but subsequently withdrew from their certified status after some years, and has not been included above.

The FSC certification process is outlined in Box 2. The part of the process relevant to this paper is the published report that lists the areas where performance is below standard. These are categorised into two levels: pre-conditions and corrective action requests (CARs). The former need to be addressed before certification can proceed. CARs require performance to be lifted but they are not considered a limiting factor for certification.

FSC is continually evaluating its aims and processes, including its alignment with other certification schemes (Bruford 2000), to improve forest management practices worldwide.

FSC Certification in New Zealand

Since 1998, eleven forest companies in New Zealand have had their management practices certified according to the FSC P&C (Table 1, Figure 1). They comprise nine softwood plantation growers; one consulting company that has been awarded a group certification for its management operations; and one manager of a silver beech forest. A number of other New Zealand companies are being audited in 2002 and if certified then the total area of forest with certified management practices in this country will increase significantly.

The New Zealand certified plantation area of 610,257 hectares covers approximately 34% of the total New Zealand plantation estate, 1.799 million ha (NZFOA, 2002a), and comprises approximately 2% of the total FSC certified global estate of over 31 million hectares⁸. Approximately 12% of the FSC global estate is certified plantations, and New Zealand's certified estate represents about 16% of this.

Concurrently, New Zealand set up a FSC National Initiative to develop country-specific forest standards for certification. Separate standards are being developed for plantation and indigenous forests, and currently (December 2002) a draft plantation standard is available for comment⁹. However, until ratified by FSC, the

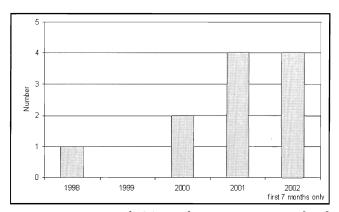


Fig 1: Frequencies of FSC certifications in New Zealand

national standard can not be used as the basis for forest certification and certifiers are using interim standards (see Box 2).

Comparison of FSC Certification outcomes in New Zealand

As there are now multiple examples of certification in New Zealand by different certifying bodies, it is possible to make comparisons of the findings and to start answering such questions as:

- Where do New Zealand plantation managers most frequently fail to meet the principles of FSC?
- Is the process equitable across the New Zealand forest companies are the definitions of the terms

[†] This represents the area of managed forest within the certified pool which was assessed for FSC Certification, out of the total area of 51,000ha managed by PF Olsen. (From SmartWood Public Summary Management Report - see footnote 8)

⁴ <u>www.certifiedwood.org</u> September 19, 2002.

⁵ <u>www.scscertified.com</u> September 19, 2002.

⁶ www.qualifor.com September 19, 2002.

⁷ <u>www.smartwood.org</u> September 19, 2002

^{*} www.fscoax.org Forests certified by FSC accredited certification bodies Doc 5.3.3 as at December 2, 2002, December 17 2002.

⁹ <u>www.nzcertification.com</u> New Zealand Forestry. 12/ 12/02.

Box 2: The FSC Certification process

A forest company seeking certification of its management practices selects a certifier through a process of competitive tendering. The certifier then follows a clearly defined set of procedures laid out by the FSC and summarised below:

Certification Standards

In accordance with FSC protocols, the certification has to comply with a set of standards. In the absence of a national standard, a certifier currently prepares a draft interim standard for New Zealand, which is based on the FSC P&C. Once this draft interim standard has been developed, it is sent out to a wide sector of the community for comment over a minimum thirty-day period. Comments relating to changes are considered and included where appropriate, before finalising the standards in preparation for the certification audits.

Preliminary Evaluation

The certifier undertakes an initial field assessment of the forest company checking the suitability and readiness of the company's management operations against the prepared standards. A small, key number of company sites are visited and a representative sample of stakeholders is consulted. The confidential report outlines the company's state of preparedness for certification and highlights significant areas that require further attention before a full certification audit could commence.

Audit Team

The certifier assembles a team of local experts and appoints a team leader who may be a member of the certifying body. It is usual for at least one of the members to have been involved in the preliminary evaluation. However, it is also possible for preliminary and full evaluations to be completed by different certifiers. Normally a team is composed of a sociologist, an ecologist and a resource forester. In some circumstances additional specialists may be added in order to address specific areas pertaining to that certification, e.g., watershed/stream degradation, specific Mâori issues.

Full Evaluation

An audit for a full evaluation includes acomprehensive field visit examining management practices and in depth discussions with forest staff. Comments are sought from stakeholders and follow up interviews are conducted. A detailed report is prepared once the field audit has been completed. The report includes a brief company background, summary of the management operations, identified strengths and weaknesses, and the team's findings and certification decision. Upon completion, the report is sent to the company being certified for them to check detail and accuracy, before it is sent to three independent peer

reviewers for comment. The peer reviewers will normally be experts in the three main areas of sociology, ecology and forest management, and will not have been actively involved in the Forest Certification process of the company. The full certification report is submitted to the client and, once FSC certification is approved, a public summary version is made available on the certifier's website.

Pre-conditions and Corrective Action Requests (CARs)

As a result of the audit, a report is issued to the company listing the areas where performance was identified as being below the required standard. These areas then need to be brought up to the appropriate level required of "well-managed" forests. They are categorised into two levels:

- · Pre-conditions, also known as major CARs, are issued where a major deficiency in a specific area has been identified (e.g. use of banned chemicals) and is considered important enough to delay the awarding of the certificate. This pre-condition remains in place until such time as the company can show that the level of performance regarding the issue has been significantly raised and the condition can be cleared. A period of time is given during which the company can satisfy the requirements. After this time, certification can proceed if the pre-condition has either been cleared or sufficient modifications have been made to the management practices to allow it to be downgraded into the category described next.
- · CARs, also known as minor CARs, are issued where performance needs to be lifted to ensure that all the requirements for certification are in place, but are not considered a limiting factor for certification to be awarded. In the case of CARs a time period is set for the rectifying of the performance and usually this is set to the next annual audit.

The naming convention of pre-condition and CAR is used throughout this paper.

The certifier may also suggest recommendations for further improvements to the management practices. While compliance to the recommendations is not required for certification, they may still be re-evaluated at future audits.

Stakeholder-initiated review

Stakeholders can challenge the results of the audit and a review of the certification can be initiated by FSC.

Annual Audit

The awarding of a certificate is normally for 5 years, with an audit conducted annually to ensure that performance levels are being maintained and to check on the progress of resolving the CARs. A full evaluation is required to renew the certificate after 5 years.

used panning out consistently, and are the rules being applied equitably?

Knowing which are the common failings, as described by the pre-conditions and CARs in the public summary reports, allows one to move on to addressing why these are common in this country and what is required to rectify this.

The eleven FSC Forest Certification Public Summary Reports were downloaded from the websites of the three certifiers¹⁰. This paper focuses on the requirements raised in the initial reports of the New Zealand forestry organisations seeking certification, namely, the preconditions and CARs (see Box 2). Thus the recommendations in the reports, plus any subsequent updates of the initial reports as a result of annual audits, were not considered in this analysis.

Forest Certification Strengths

While much can be learnt from an analysis of the preconditions and CARs, it is also worth investigating the published Forest Certification Strengths of all the certified companies as identified from the reports. They consist mostly of general comments.

A strong commitment to the FSC was mentioned reasonably frequently. The mention of attributes relating to good corporate citizenship was very high, with several companies also having their staff stability and management professionalism and commitment highlighted. Silvicultural planning and management planning was seen as a common strength, as well as a reasonably frequent commitment to ecosystem preservation.

Commonalities in the Pre-Conditions and CARS

The pre-conditions and CARs from ten of the reports were noted against one or more of the FSC P&C. The eleventh report, although using the FSC P&C for the certification, did not use them as a referencing system in the reporting. In this case an attempt was made with the aid of the cross-referencing table to map those preconditions and CARs to the FSC P&C to allow comparisons. Different styles between those certifiers who specified FSC principles showed some to be very specific about the criterion requiring action, e.g. 6.2.2 and 6.2.3, while others did not indicate this detail, e.g.

www.qualifor.com SGS Qualifor Programme. Forest Management Certification Public Summary Information for: City Forests Ltd.; Pan Pac Forest Products Ltd.; Ernslaw One Ltd.; Wenita Forest Products Ltd.; Winstone Pulp International – Forestry Division; NZ Forest Managers Ltd.; Craigpine Timber Ltd.; and Timberlands West Coast Ltd. September 19, 2002.

www.smartwood.org SmartWood Program, Forest Management Public Summary for: PF Olsen and Co. Ltd. and Gowan Hills Trust, New Zealand. September 19, 2002

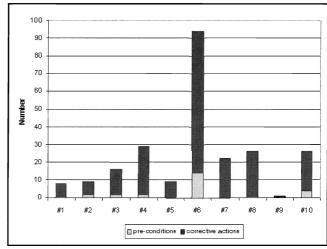


Fig. 2: Frequency of preconditions and CARs by FSC Principles and Criteria, excluding the forest company where cross-referencing to the FSC P&C was required

never more specific than '6.2'. In three reports no preconditions were listed.

For each FSC principle, at each level of the principle, the pre-conditions and CARs across all companies were collated. Common themes within a principle were summarised (for example, Fig. 2). Given the differences in reporting styles (by FSC P&C or not, at different levels of principles, slight differences in the description of an issue), the simplest approach was to note the frequencies with which an issue is raised. Frequency was also used as an indicator of the importance of the theme to New Zealand forestry.

Principle #1: Compliance with laws and FSC principles

This principle is about respect for both locally applicable laws and international treaties and agreements, as well as the principles and criteria of FSC. While issues were raised and these were certainly not trivial, they were specific to that company, forest or community. For example, improved compliance with dangerous goods storage regulations was mentioned twice.

Principle #2: Tenure and use rights and responsibilities

As the title indicates, this principle includes themes such as customary tenure or use rights of the forest and the resolution of such disputes. Again this was not a principle for which many recommendations were made and there were very few commonalities in the preconditions and CARs. However, a thread running through those that were listed indicated a need for an increase in the sensitivity currently displayed toward a partner or organisation that a company is working with, for, or on behalf of. Examples of such organisations are the landowners including Mâori landowners, the Department of Conservation (DOC), joint venture group and councils. Recommended actions include the requirement for long-term management, for including the employment of the Mâori landowners into the evaluation

www.scscertified.com Scientific Certification Systems, Public Certification Summary on the Evaluation of Fletcher Challenge Forests. September 19, 2002.

of tenders, and for ensuring forest use rights.

As required by FSC, a dispute needs to be addressed formally. Several companies needed to improve their process for addressing a dispute. Examples include the need to identify and record the dispute, to reach agreement on the process for resolving it, to assign responsibilities for actions and report on progress.

Principle #3: Indigenous peoples' rights

The principle is aimed at recognising and respecting the legal and customary rights of indigenous peoples to own, use and manage their lands, territories, and resources. This includes the right to control the forest management on their lands and territories unless delegated with free and informed consent. Another requirement is the identification and protection of sites that are significant to indigenous people.

This principle had several pre-conditions and CARs. A major theme for slightly more than half the companies was insufficient knowledge about significant sites and insufficient contact with indigenous people about their sites. The principle also requires that the resources or tenure rights of the indigenous peoples shall not be diminished, either directly or indirectly, and this requirement was listed several times. Linked to this, the need to resolve the above issues was stated frequently.

It was noted occasionally that operators and contractors need a basic knowledge and competency on these topics too, for example, the ability to identify culturally significant sites. This lack of knowledge seemed more common with forest areas recently included into the company's forest management. In fact, knowledge of only the historical/archaeological sites could be deemed insufficient with one report referring to the need for knowledge on significant ecological, economic or religious sites.

Lack of contact with local iwi was accorded different levels of significance for different companies, even by the same certifier. For some companies better contact and knowledge was highlighted as a major issue (a precondition) and was listed repeatedly, while for others similar sounding topics appeared as only a CAR. It was not possible to determine from the reports if this difference in emphasis was related to differences in the companies or to differences in the style and interpretations of the team doing the certification.

Principle #4: Community relations and workers' rights

The principle is based on maintaining or enhancing

long-term social and economic well being of forest workers and local communities. No company was exempt from CARs on this principle.

Two major themes¹¹ occurred across the companies: one was the inadequacy of evaluating social impacts, and the other was the inadequacy of consulting with affected people and groups. For the former, the requirements included: that assessments were required for new areas and new operations; issues relating to the consistency of the assessment; and that social impacts were not being addressed explicitly enough. For the latter theme, issues listed were:

- The lack of a process for achieving the required lists of stakeholders, for getting information to those identified, and for consultation with the stakeholders;
- lists were too narrow e.g. non-government organisations (NGOs) were not included, nor local schools or recreation groups that could be affected by forest operations;
- the level of information being sent was inadequate e.g. 'beyond public relations'.

Consultation requires the provision for dispute resolution, including for internal disputes, and this was mentioned several times.

A less frequently mentioned theme across some companies was a concern for the safety and safety standards of contractors.

Principle #5: Benefits from the forest

This principle focuses on the multiple products and services of a forest, to ensure economic viability as well as a range of environmental and social benefits. Only minor issues specific to that company, forest or community were mentioned for this principle. One theme mentioned a few times centred on adequate formal knowledge, for example by using databases of the resource, including the waterways, and knowing the effects of operations, including leaving riparian strips when harvesting and no-harvest buffers around forest edges.

Principle #6: Environmental impact plan

The aim of this principle is to maintain the ecological functions and the integrity of the forest. It covers such topics as biological diversity and its associated values, water resources, soils, unique and fragile ecosystems, and landscapes.

This principle has ten criteria, the most of all the FSC principles, although only one more than Principle 10. The highest number of issues was raised under this principle for every company averaging approximately 9 per company. Four main themes occur across the companies and are listed here in the same order as they appear in the principle.

The first major theme was the need for or improvement of environmental impact assessments, particularly at the landscape level.

The second major theme was the safeguarding of rare,

Both of these themes are requirements under only one criterion, namely 4.4 – given below – indicating the importance of this clause to New Zealand forest management under certification.

^{4.4} Management planning and operations shall incorporate the results of evaluations of social impact. Consultations shall be maintained with people and groups directly affected by management operations.

threatened and endangered species, including the need for more information (e.g. through survey), for public consultation on these species, for protection strategies, and for implementing these strategies. Linked to this was the need to protect representative ecosystems and natural vegetation.

Thirdly, the use of chemicals was a significant theme. Specifically, usage included chemicals banned under FSC, there were no strategies for phasing out chemical usage nor promotion for the search for alternatives, and insufficient information was available to stakeholders or there was no consultation with stakeholders on the use of chemicals. Issues relating to appropriate disposal were also mentioned occasionally.

The final theme across most companies was the management of wilding spread or unwanted regeneration, both within and outside the forest estate, but particularly the latter. This applied to all species but particular mention was made of *Eucalyptus* seedlings and saplings, Douglas fir and blackwood.

Other requirements were made under this principle, but less frequently. They included the need for survey protocols and maps of environmental concerns such as ecosystem maps, for the guidance of contractors, for the inclusion of environmental impact assessments into strategic planning, for public visual assessments and for the assessments of new lands/new plantings. Minor mention was made of older trees, for example, keeping 2 large trees per hectare and having policies on old growth and minor species. Another minor theme related to the New Zealand Forest Accord (NZIF, 1995), for example in regard to compliance for alternate species and with communication and commitment.

Principle #7: Management plan

The principle is aimed at up-to-date management plans with long term objectives and means of achieving them. Again, no company was without a CAR for this topic, themes are across subsets of companies only, rather than across all.

One minor theme was the need for improved management of rare, threatened or endangered species, potentially though formalising this process. Another was the need for manuals to be in place and training to be organised not only on environmental and social impact assessment but also on forest operations. The third theme was that the summary of the management plan was frequently not available or sometimes not readily available. Of note is that this issue was graded as precondition and as CAR by different certifiers.

Principle #8: Monitoring and assessment

This principle covers monitoring of forest condition, yield, forest chain of custody and management activities, and their social and environmental impacts. Again, while no company was without a CAR for this topic, the themes below were not common to all companies.

Two reasonably common themes were the requirement

for improved flora and fauna monitoring, and for social impact monitoring. Several times the monitoring of environmental impacts was indicated, including monitoring water quality and the effects of harvesting on soils. Of importance too is that a number of times the need to define what required monitoring was mentioned. Occasionally the requirement for public accessibility to the monitoring summary was mentioned.

Principle #9: Maintenance of high conservation value forests

This principle concerns the maintenance or enhancement of the attributes that define high conservation value forests. It was consistently seen as not a problem area, with only one mention of the possibility of discovering high conservation value forests once more assessments had been performed.

Principle #10: Plantations

This principle was added to the original 9 principles in 1996. The intent is for plantations to not only satisfy the previous 9 principles, but also to complement the conservation of natural forests through reducing pressure on and promoting the restoration of the natural forests. All of the radiata pine plantations had at least one corrective action listed in this category, with some marked as major issues. Although there were several themes, each one occurred for only a subgroup of companies.

A reasonably frequent theme was that the requirements relating to representative ecosystems and/or rare, threatened or endangered species were not being addressed adequately. This was mentioned several times and under different parts of the principle. Specifically, there was inadequate protection of these species, inadequate restoration, insufficient information to assess needs, and a need for improved strategies.

The need to define a maximum clearcut size was listed several times. There was also some mention of issues in connection with waterways, e.g. improved classification of streams, and some mention the management of wildlife corridors and other non-productive parts of the forest.

Discussion

From the analysis, it was clear that certification required changes to be made to the management of New Zealand forests, that these were not negligible, and that themes across the different companies did emerge. Common issues, whether graded as pre-conditions or CARs, were:

- The inadequacy of evaluating social impacts and of consulting with affected people and groups. Improved social impact monitoring is required.
- The need for or improvement of environmental impact assessments, particularly at the landscape level.
- The requirement for improved flora and fauna monitoring.
- The need for improved safeguarding of rare, threat-

ened and endangered species, including the need for more information on these. For representative ecosystems as well as the rare, threatened or endangered species: there is inadequate protection, inadequate restoration, insufficient information to assess needs, and the need for improved strategies.

- The need to manage wilding spread or unwanted regeneration, both inside and outside the forest estate.
- The need to modify the use of chemicals.
- The need to define a maximum clearcut size.

The certification process has required foresters, managers, and contractors to broaden their concept of the use of the land, to consider not only the trees and the land they are on in isolation but as part of the landscape and community surrounding and linked to them. New skills and knowledge will be required, especially for social impact assessments and in environmental areas including the monitoring and management of representative ecosystems and rare, threatened or endangered species.

Nevertheless, it can be seen as a good result for New Zealand that, as far as the authors are aware, no company has so far found the process too arduous to comply. Eleven forest managers have succeeded in becoming certified, despite the lack of the national standards, and with the majority being pine plantations.

From the publicly available information, it is difficult to determine if different emphases placed on an issue are as a result of differences in the organisations being certified or in the style of the certifier. For example, should 'lack of accessibility of the management plan summary', a failure under Principle 7.4, have been deemed as sufficient to warrant delaying certification in all cases?

The resolution of pre-conditions for certification to be issued raises the interesting question of how they were addressed. Unfortunately, this information is not publicly available, nor how CARs are resolved. Other means need to be used to gather this kind of information, which can be commercially sensitive. Further research is planned at Forest Research on the issues raised by certification and the effects on the companies.

Unique to New Zealand is the separation of the productive exotic plantation forests from the indigenous forests from which timber extraction is almost totally not permitted. While certification in New Zealand included the management of one beech forest, certification of the indigenous forests within the conservation estate has so far not been attempted. It will be interesting to see how the certification process evolves to address the differences between forests actively managed for wood products and those that are 'locked-up'.

Also unique in New Zealand is the increasing number of settlements of land claims under the Treaty of Waitangi, resulting in increasing Mâori ownership of forests. Whether this increase in ownership of forests by the indigenous people of the country will influence forest management and the certification process has still

to be realised.

There has been a growth of small woodlot growers over the recent years. Achieving all the requirements under certification can be an onerous and expensive exercise for farm foresters, even as a collective group—this will need to be addressed for these people to not be disadvantaged by the certification process.

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References

- Bigsby, H. 1999: The circling around of Certification. New Zealand Journal of Forestry 44(2):2-3.
- Bruford, G. 2000: Recent developments in timber certification schemes. *Forestry and Forest Products International* 2000, Sterling Publications Ltd., London.
- Fletcher, R.; Hansen, E. 1999: Forest certification trends in North America and Europe. *New Zealand Journal* of Forestry 44(2):4-6.
- Gray, A. 2000: Rewarding the certified. NZ Forest Industries 31(7): 40.
- Kanowski, P.; Sinclair, D.; Freeman, B. 1999: International Approaches to Forest Management Certification and Labelling of Forest Products: A Review. Agriculture, Fisheries and Forestry, Australia. 47p.
- Neilson, T. 1998: Certification: The brand you must have. *New Zealand Pine International* 23:6-9.
- New Zealand Forest Owners Association, 2002a: Facts and figures 2002/03. New Zealand Forest Owners Association Inc., Wellington. 26p.
- New Zealand Forest Owners Association, 2002b: Certification gets closer. *New Zealand Forestry Bulletin*, Summer 2002, Wellington. 8p.
- New Zealand Institute of Forestry, 1995: The New Zealand Forest Accord, In (Ed) D. Hammond, *Forestry Handbook*, New Zealand Institute of Forestry, 1995, Christchurch. 238p.
- Ozanne, L.; Bigsby, Ĥ. 1997: The willingness to pay. New Zealand Pine International 19: 24-26.
- Ozanne, L. K., Bigsby, H., and Vlosky, R. P. 1999: Certification of forest management practices: the New Zealand customer perspective. *New Zealand Journal of Forestry* 43(4): 17-23.
- Palmer, H. 2002: Certified forests growing. NZ Forest Industries 33(10): 13-16.
- Purey-Cust, J. 1999: Forest Certification south of Dunedin
 an update. New Zealand Journal of Forestry 44(2):
 7-8
- Thorpe, T. 1998: Certification. *New Zealand Journal of Forestry* 43(1): 6-7.
- Tissari, J. 2001: Certification: Helping markets support the world's forests. *International Trade Forum* Issue 2/2001:27-30.