AS 4708—2007

Australian Standard®

The Australian Forestry Standard

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- Aboriginal & Torres Strait Islander Representative
- Australian Council of Trade Unions
- Australian Forest Contractors Association Limited
- Australian Forest Growers
- Australian Plantation Products and Paper Industry Council
- Forestry and Forest Products Committee (of the Primary Industries Standing Committee)
- Furnishing Industry Association of Australia (WA) Inc
- Independent Environmental Scientist
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- National Association of Forest Industries
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Australian Standard®

Forest management—Economic, social, environmental and cultural criteria and requirements for wood production

(known as The Australian Forestry Standard)

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PREFACE

This Standard was prepared by the Australian Forestry Standard Technical Reference Committee. This committee is a technical committee under the accredited Standards Development Organisation—Australian Forestry Standard Limited.

The objective of the Australian Forestry Standard is to provide forest managers and owners with economic, social, environmental and cultural criteria and requirements that support the sustainable management of forests for wood production.

It is intended for voluntary application to any forests in Australia being managed for wood production, whether native or planted forests. It will be utilised by forest owners and managers who are seeking independent, third-party certification of their forest management in response to market demands from the purchasers of their wood. Its application will assist in both protecting traditional domestic markets, and promoting access to international markets and expansion of exports for Australian timber and timber products from certified forests. It will also support and strengthen the framework of policy and regulation that delivers improved economic, social, environmental and cultural outcomes from well-managed forests.

Independent, third-party certification against the Australian Forestry Standard provides a clear and unambiguous statement that wood production in a particular defined forest area was managed in accordance with a set of predetermined and clearly defined environmental, economic, social and cultural performance requirements that support sustainable management of forests.

The Australian Forestry Standard may be used either by itself or in conjunction with AS/NZS ISO 14001:2004 *Environmental Management Systems - Requirements with guidance for use*.

The Australian Forestry Standard also draws upon the Montreal Process Implementation Group framework for regional criteria and indicators of sustainable forest management in Australia.

The supplements 1, 2 and 3 to the Australian Forestry Standard, available separately, have been prepared to give guidance for—

1. Medium and large native forest ownerships.
2. Medium and large plantation ownerships.
3. Small native forest and plantation ownerships.

The term *informative* has been used in this Standard to define the application of the appendices and supplements to which they apply. An *informative* appendix or supplement is for information and guidance only.

In this Standard, unless the contrary intention appears the singular includes the plural and vice versa.

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(known as The Australian Forestry Standard)

Introduction

Buyers of timber, in common with buyers of other goods such as food and clothing, are becoming more interested in where the product they buy comes from, and how it has been produced. In order to satisfy this interest, timber producers have begun to investigate various forms of labelling and the use of systems of independent certification of forest management.

All those approaches for the provision of useful and reassuring information to consumers pre-suppose that there be a set of criteria that the producers and/or the forest product are required to meet in order to qualify for a label or a certificate.

In the case of timber, these criteria relate to the forest management practices employed in the growing and harvesting of the trees from which the wood products are sourced. Sometimes the processes that the timber has subsequently undergone will also be examined.

The principal reassurance that consumers (or retailers) are seeking is that the forests supplying particular wood products are being well-managed. The quality of forest management is sometimes summarised by saying that a forest is (or is not) being **sustainably** managed.

The Australian Forestry Standard seeks to distil from community values and the science of forest management those economic, social, environmental and indigenous criteria that are considered to be most important for ensuring that a forest is well-managed. It is intended that the AFS be used by accredited and independent third-party certification bodies and that it embodies forest management performance criteria that support continual improvement toward sustainable wood production in Australia. The Standard is based on internationally agreed criteria and reflects broad multi-stakeholder support. It is intended for voluntary application and will assist to promote access to both domestic and international markets for timber from certified forests. It is applicable to all forests managed for wood production, regardless of type and scale of ownership, or forest type, whether natural or planted forest.

What is a Standard

Standards are accepted specifications that define materials, methods, processes and practices that, when effectively implemented, ensure consistent and acceptable levels of quality, performance, safety and reliability are achieved. Certification of forest management provides an assurance that the quality of the forest management practised conforms to a specified standard. Standards are voluntary compliance documents that only become mandatory if called up through legislation or contractual obligation.

The Australian Forestry Standard (AFS) is a nationally endorsed Australian Standard developed within the recognised international frameworks of the Montreal Process Criteria and Indicators (1995) and the International Organisation for Standardisation (ISO) 14000 series of international, voluntary environmental management Standards, but which takes account of local operating conditions.

The AFS was developed taking into account:

- the unique character of Australia's forest ecosystem and the particular requirements for sustainable management of Australia's forests, compared to the existing schemes for forests in other nations;
- Australia's international agreements and commitments, national and State legislative frameworks, national standards and principles, national and regional policy initiatives, and agreed codes of forest practices; and
- community expectations for sustainable forest management, addressing environmental, economic, social and cultural/heritage issues.

Sustainable forest management

Sustainable forest management (SFM), or sometimes known as ecologically sustainable forest management, in the context of the AFS is synonymous with 'good' or 'sound' forest management and well-managed forests. These terms are based on the premise that a forest production system is not sustainable unless the ecological components and processes on which the system depends are maintained. Forest managers and owners now accept that in managing forests for wood production other aspects must be considered, such as environmental, economic and social values, with the goal of achieving environmentally responsible, socially acceptable and economically viable forest management.

Whilst there are a number of definitions of sustainable forest management, the following was based on concepts enunciated in the Forestry Working Group on Ecologically Sustainable Development (1991) and the National Forest Policy Statement (1992):

The integration of commercial and non-commercial values of forests so that both the material and non-material welfare of society is improved, whilst ensuring that the values of forests, both as a resource for commercial use and for conservation, are not lost or degraded for current and future generations.

On the basis of this definition, and in common with other efforts to define sustainable forest management, there are three principles to sustainable forest management that are embraced by the AFS:

Ecological sustainability

This entails maintaining the ecological processes within forest ecosystems—the formation of soil, energy flows, and carbon, nutrient and water cycles—and the biological diversity of forests so as to maintain viable and functional ecosystems. The ecosystem needs to support healthy organisms, whilst maintaining its productivity, adaptability and capability for self renewal. Forest management needs to respect, and build on, these natural ecological components and processes.

Social sustainability

This entails maintaining and enhancing the net social benefit derived from the mixture of forest uses while maintaining options for the future. This includes sustaining the relationship between cultural ethics, social norms and development. An activity is socially sustainable if it conforms to ethical values and social norms, or does not exceed a community's tolerance of change.

Economic sustainability

This entails optimising the economic benefits for income, employment, goods and services from the mixture of forest uses within ecological constraints. It requires that benefits to the groups in question exceed the costs incurred, and that some form of equivalent capital is handed down from one generation to the next so that our use of the forest does not preclude or foreclose on future use options by future generations.

Management of forests should use the precautionary principle for prevention of environmental degradation and the principle of inter-generational equity to maintain the suite of forest values for present and future generations. A key objective of ecologically sustainable forest management is to maintain an extensive and permanent forest estate. The criteria and requirements set out in the Australian Forestry Standard aim to ensure that this objective is not compromised.

Mutual recognition of Forest Certification Schemes

International recognition of national certification schemes is an emerging issue, prompted by concerns regarding credibility and acceptance in the global economy, confusion amongst consumers, and a need to provide verification of responsible forest management to customers. Two principal international initiatives are the Programme for the Endorsement of Forest Certification Schemes and the Forest Stewardship Council. Both these schemes offer an umbrella for the recognition of national and regional initiatives in certification of forest management that have been, or are being, developed in a number of countries, e.g., the United Kingdom, Canada, Finland, Sweden, Indonesia and Malaysia. A large degree of commonality exists between the AFS and the performance requirements of these initiatives, thus facilitating the opportunity for mutual recognition of systems at an international level. The AFS was developed cognisant of the emerging criteria for international recognition, including those criteria of—

- being independent and impartial, including a clear separation between development of standards and accreditation of certification bodies;
- being accessible to all interested stakeholders with a balance of influences;
- incorporating performance levels at appropriate scales through an open process involving all interested stakeholders;
- being voluntary and including the broad participation of forest owners;
- accommodating all forest sizes and ownership structures appropriate to scale of enterprise or management;
- being scientifically based and involving the scientific community in its development;
- combining with an internationally recognised environmental management system;
- having transparent and understandable process that is accessible to all interested parties;
- being easily understood and leading to the same results when used by different certifiers;
- being regularly assessed and revised in the light of new knowledge as part of a continual improvement process;
- allowing bearable costs of certification and not making wood products uneconomical in comparison to other materials;
- complying with government forest policy and regulations; and
- involving competent accreditation bodies and independent, accredited third party certification bodies.

Use of the Standard

The AFS recognises that native forests and plantations are managed for a variety of objectives. Where forest operations take place, the AFS sets out specific forest management performance requirements for operations up to the 'forest gate'[1] and establishes a systematic approach to management and requirements for public participation. The AFS

[1] Considered to be the boundary of a forest

does not include any criteria related to the fitness of the wood products for any purpose. As such, it is fundamentally a clear and unambiguous statement that the wood product was grown and harvested at a location that was managed in accordance with a set of predetermined and clearly defined environmental, economic, social and cultural performance requirements that support the sustainable management of forests for wood production.

The AFS is intended for voluntary application to any forests in Australia being managed for wood production, whether native or planted forests, by individual forest owners or managers of multiple forest areas under a variety of land tenure arrangements. It is intended to be compatible with relevant international and national policy instruments, and has been developed with national and international audiences in mind, as well as for implementation by Australian forest managers. The AFS also recognises the importance of meeting both national and international sustainable wood production and marketing requirements, the resource management needs of the industry, as well as promoting voluntary adoption by producers.

The AFS may be used either by itself or in conjunction with AS/NZS ISO 14001:2004 *Environmental management systems — Requirements with guidance for use*.

Certification will be based on independent third party audit of forest management practices for compliance with the requirements of the AFS. The AFS also provides guidance notes that identify appropriate approaches to implementation and differentiate between different scales of ownership (size and management regime) and between native and planted forests.

The AFS relates only to the management operations and activities within the forest and does not prescribe standards for operations or activities beyond the 'forest gate' in relation to product 'chain of custody'; however, some off-site effects of forest management, including impacts on neighbours and adjacent environments, are addressed under the AFS. The AFS is not intended to replace or override the regulatory framework within which Australian forest managers operate. Compliance with current law is a minimum requirement; however, the AFS will set a voluntary suite of requirements that supports the achievement of sustainable forest management and which may involve going beyond a legal minimum in order to gain benefits from certification. The AFS does not set site-specific requirements for particular forest types, communities or individual operations, as they vary with bio-geographical region and legal jurisdiction. These are addressed under external legal requirements such as Commonwealth, State and Territory planning, management and operational control processes, including regional and local planning approvals, regulations, licences, codes of practice, prescriptions and operational guidelines.

Mechanisms to ensure that forest management performance and public participation requirements have been met are built into Criteria 2 to 9, and in the management system (Criterion 1) through requirements for monitoring and evaluating the outcomes of forest management in relation to the forest management performance and public participation requirements, and review and continual improvement of the management system. The relationship between codes of forest practice, the regulatory framework and the AFS is addressed under the respective criteria in the Certification Standard.

The AFS, whilst requiring compliance with current law, is not a mechanism for auditing compliance with legal or other obligations. Certification to the AFS is only available on the basis of an assessment by an accredited independent third party audit. Such an audit is entirely voluntary. No forest owner or manager is required by law or regulation to undergo such an audit.

Process of development

The Australian Forestry Standard project was an initiative sponsored by the Primary Industries Ministerial Council (through the Forestry and Forest Products Committee of its Primary Industries Standing Committee), the National Association of Forest Industries, the Plantation Timber Association of Australia and the Australian Forest Growers during the developmental phase from 2000 to mid 2003. The development of the AFS was supported

initially by a Steering Committee containing representatives of the above sponsors, together with representatives of the Natural Resources Management Ministerial Council's Natural Resources Management Standing Committee and the Australian Council of Trade Unions and from mid 2003 by Australian Forestry Standard Limited, a not-for-profit public company. The process for its development was undertaken in accordance with a set of recommended developmental stages as guided by Standards Australia's Standardization Guides 1, 3, 4, 11 and 14.1 (Standards Australia, 1995, 1996 & 1999). The Steering Committee and Australian Forestry Standard Limited have been accredited by the Standards Accreditation Board of Standards Australia as Standards Development Organisations to oversee the development of the AFS.

A Technical Reference Committee comprised of cross-sectoral stakeholders invited and prepared to participate in the development process guided the development of and approved the technical content of the AFS.

The 19 seat Technical Reference Committee (increased in 2004 to 20 seats) was comprised of:

- independent professional and scientific experts;
- forest owners and processors;
- community and consumer interests; and
- regulatory or controlling bodies.

Further information on the development and review of the AFS is available in the document 'Procedure 1 – Standards Development within the Australian Forest Certification Scheme' available on the AFS web site (See www.forestrystandard.org.au).

Content of the Standard

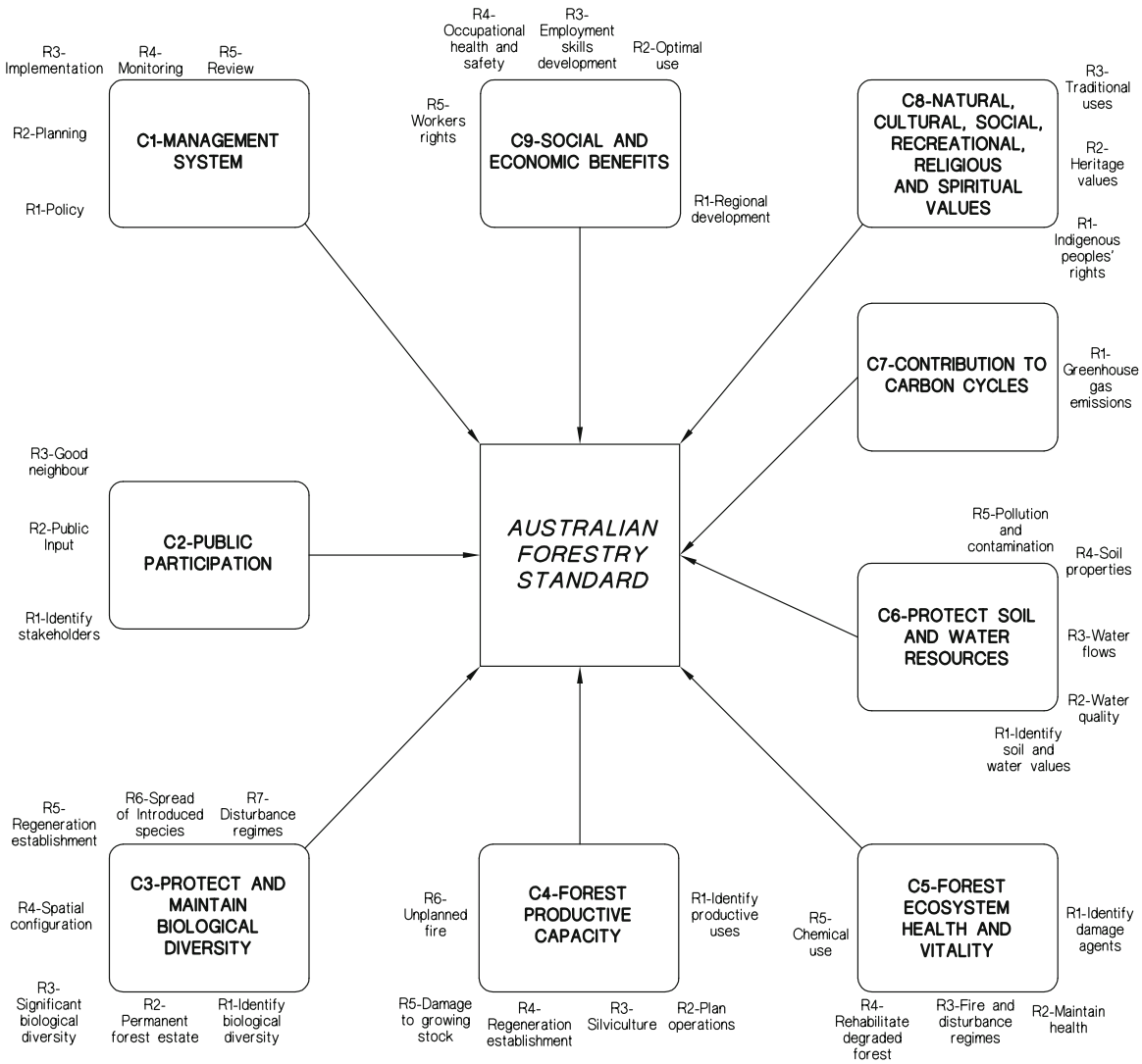

FIGURE 1 Criteria and Requirements of the Australian Forestry Standard

Structure of the Standard

The Australian Forestry Standard consists of the following:

- An Introduction that describes the rationale for a forest certification Standard; the process for its development including its structure, content and use; and the process for certification;
- The Certification Standard, which describes the normative elements of the Standard. The requirements set out at section 4 are the normative elements that a forest manager seeking independent, third-party certification will be audited for conformance. To be certified, forest management shall meet all these requirements. The requirements are grouped under nine criteria that are stated in a positive or outcome form**.** The criteria and requirements are illustrated in Figure 1 in an abbreviated form; and
- Appendices that describe the context for the development of the Standard and the regulatory and policy framework for forest management within Australia.

The AFS also provides informative guidance in three supplements on the use and auditing of the requirements under a modular approach to accommodate different forestry enterprises, including native forests, plantations and small-scale ownerships. This guidance does not create additional normative elements. Rather, they are intended to provide clarity

through additional information and practical examples where appropriate. The guidance in each supplement is set out in two sections:

a) **Guide to verification** suggests whether a document/systems review should be supported by field verification or interviews with staff or stakeholders. It also suggests the types of documents and processes that are likely to provide an appropriate basis for the evaluation of compliance with the requirements. The suggestions are not exclusive, exhaustive or mandatory—certifiers will not always need to use all the suggested methods, and may seek verification in other ways. Lastly, this section suggests some sources of information for audit evidence such as records and documents within the scope of the audit.

b) **Guide to implementation** aims to help both the forest manager and the certifier to understand how requirements should be applied in practice. More information is provided to elaborate on some requirements, the meaning of certain terms or phrases is explained, and examples of appropriate action are given.

Application of requirements

Certified forest management can occur within different operational and ownership constraints. These include:

- a single forest management unit, which is defined as a discrete, contiguous forest managed by one owner, manager, or agency;
- a group of forest management units under a single land tenure arrangement that are managed by a single forest manager using a single overall management system or process;
- a group of forest management units under multiple land tenure arrangements that are managed by a single forest manager using a single overall management system or process;
- forest management units covering both native and plantations (exotic and native species) under the arrangements described above; and
- a group of individuals growers with specific joint interests.

The forest operations and activities to be included under a single certificate will depend on factors such as the nature, scale and intensity of activities. From a regional perspective, the varying contributions to sustainability of different types of forest use may need to be considered. While small areas of forest may not include the full suite of forest values, the combination of forested areas in a region will provide the basis for sustainable forest management. Forest managers may in these situations rely on the broader environmental planning powers of Commonwealth, State and Territory, and local government to manage regional sustainability requirements.

Each of the forest management and public participation performance and management systems requirements are intended to be incorporated into forest management to the extent that the forest manager can control or influence their achievement within the defined forest area.

The forest management and public participation performance requirements need to be applied at appropriate ecological temporal and spatial scales, recognising that different criteria apply at different scales which will affect the ability of the forest manager to control or influence their achievement. The requirements should also be interpreted and applied in the context of the relevant policy and legislative framework.

The management system requirements need to be applied in a manner commensurate with the size and nature of the forest manager's particular activities, and will be audited accordingly.

It is recognised that some requirements may be inappropriate for some enterprises in some situations. Some flexibility to allow local adaptation may, therefore, be acceptable. The certification body carrying out the audit will make a professional judgement as to the acceptability of the flexibility, and may consult appropriate specialists.

Use of certification marks

The use and application of certification marks is strictly controlled by the international certification community, local accreditation bodies, certification bodies and government trade practices and fair trading organisations.

The AFS sets performance requirements for sustainable forest management and nominates the specific activities that must be performed in order for that outcome to be achieved. Certification marks related to the AFS can be fixed to a product to indicate that the product originated from a forest certified to the AFS.

The certification standard

1 Introduction and Scope

The Australian Forestry Standard (AFS) specifies economic, social, environmental and cultural criteria and requirements for wood production that support continual improvement towards sustainable forest management.

The AFS can be applied to any defined forest area being managed for wood production, irrespective of scale or type of ownership, or whether native or planted forest. The requirements set out in section 4 are the normative elements that a forest manager seeking independent, third-party certification will be audited for conformance. To be certified, forest management shall meet all these requirements. The requirements are grouped under a series of criteria that are stated in a positive or outcome form.

The AFS also provides informative guidance on the use and auditing of the requirements. Application of the requirements is addressed under a modular approach to accommodate different forestry enterprises, including native forests, plantations and farm forestry. This guidance does not create additional normative elements. Rather, they are intended to add clarity through additional information and practical examples where appropriate.

2 Normative references

There are no normative references in the AFS.

3 Definitions

For the purpose of the AFS, the definitions below apply.

Aspect	An element of an organisation's activities that can interact with environmental, social or economic factors and that can affect the outcomes of forest management for wood production (addresses environmental aspects, social aspects, and economic aspects). A significant aspect is one that has, or can have a significant impact. **NOTE:** Not limited to 'environment' as is the case for ISO 14001 EMS
Assessment	Process of determining the status or condition of a forest value by a person with technical expertise before or after a forest management activity, usually to determine its impact and effectiveness.

Audit	A systematic and documented verification process of objectively obtaining and evaluating evidence to determine whether an organisation's management system conforms with forest management performance criteria and requirements of the AFS and which takes account of the likelihood of failure to detect breaches, and for communication of the results of this process to management.
Biodiversity	*See* Biological diversity
Biological diversity	Biological diversity (or biodiversity) is the diversity of plants, animals and other living organisms in all their forms and levels of organization, and includes the diversity of genes, species and ecosystems, as well as the evolutionary and functional processes that link them.
Carbon sink	Components of the land and biomass where carbon is held in non-gaseous form for substantial periods of time.
Codes of practice	A set of operating procedures designed to control, regulate or govern field activities.
Continual improvement	Process of enhancing the management system to achieve improvements in overall performance in line with the organisation's forest management policy through monitoring, evaluation and review.
Crown cover	Area of ground covered by tree canopies, ignoring overlaps and gaps within individual canopies. NOTE: Crown cover percentage is the percentage of the sample site within the vertical projection of the periphery of crowns. In this case, crowns are treated as opaque.
Damage agents	Damage agents include endemic and exotic weeds, insect and vertebrate pests (including feral animals) and pathogens.
Defined forest area	An area of forest (including land and water) to which the requirements of this Standard are applied, and to which the forest manager can demonstrate management control, which allows them to achieve the requirements of this Standard.
Disturbance regime	A pattern of disturbances events, such as fire or flooding, followed by a period of recovery from the disturbance (e.g., regrowth of a forest after a fire).
Ecological integrity	The ability of the forest ecosystem to support and maintain key ecological processes and a community of organisms with a species composition, diversity and functional organisation as comparable, as far as possible, with that of natural habitats within a region.
Ecosystem	The aggregate of all living organisms and their interactions with each other and the non-living parts of the environment for a defined place or kind of habitat.
Ecosystem diversity	*See* Biological diversity
Effective stocking	Effective stocking comprises density, species composition and early growth but needs to be defined locally to suit particular forest types.

Environment	Surroundings in which an organisation operates, including air, water, land, natural resources, flora, fauna, humans and their interaction.
Erosion	Detachment and movement of soil particles or aggregates by processes such as rainfall, runoff, throughflow, wind and frost.
Establishment	The creation of a tree crop arising from the seeding or the planting of a site with trees of either native or introduced species. **NOTE:** In this context, establishment refers to plantations.
Extraction track	A track along which logs are pulled from the felling point to a nearby landing (also known as a snig track).
Forest	A land area, incorporating all living and non-living components, that is dominated by trees having usually a single stem and a mature or potentially mature stand height exceeding 2 m and crown cover or potential crown cover of overstorey strata about equal to or greater than 20%. This definition includes Australia's diverse native forests and plantations, regardless of age. It is also sufficiently broad to encompass areas of trees that are sometimes described as woodlands.
Forest conversion	Removing native vegetation, or a significant portion of the characteristic suite of species for the vegetation community, to establish a plantation or replace with non-forest cover.
Forest management policy	Statement of intentions and principles in relation to overall forest management performance, which provides a framework for action and setting of forest management objectives and targets.
Forest operations	A process, method or series of actions, especially of a practical or mechanical nature within a forest related to its management or use for wood production, including road construction and/or maintenance, timber harvesting and extraction, stream crossing constructions, non-commercial thinning, slash disposal and/or prescribed burning, etc.
Forest products	Includes wood and non-wood products
Fragmentation	A process of a combination of continual loss of native vegetation and its replacement with other land cover types leading to increasing isolation of the remnant patches of native vegetation.
Greenhouse gases	Gases that affect the temperature of the Earth's surface and climate. They include water vapour, ozone, chlorofluorocarbons, carbon dioxide, methane and nitrous oxide.

Impact	Any change to environmental, economic or social factors, whether adverse or beneficial, wholly or partially resulting from an organisation's activities, products or services (addresses environmental impacts, social impacts, and economic impacts). **NOTE:** Not limited to 'environment' as is the case for ISO 14001 EMS
Indigenous	People of Aboriginal or Torres Strait Islander descent.
Intergenerational equity (in natural capital)	Ensuring that future generations will have access to natural resources of the same health, diversity and productivity as those available to current generations.
Introduced species	An established plant or animal not native to the ecosystem, region or country.
Monitoring	A systematic, planned series of measurements or observations taken at regular intervals of time to provide the basis for analysing and reporting trends of change.
Montreal Process	The informal agreement by the Montreal Process Group of countries (currently 12) to work towards the implementation of a comprehensive set of criteria and indicators for the conservation and sustainable management of forests.
Native vegetation	Any locally indigenous vegetation community containing the suite of species and habitats normally associated with that vegetation type.
Non-wood products	Forest products other than wood (e.g., honey, water, wildflowers).
Objective	Overall goal arising from forest management policy that an organisation sets itself to achieve and which is quantified where practicable.
Old-growth forest	Forest that is ecologically mature and has been subjected to negligible unnatural disturbance such as logging, roading and clearing. The definition focuses on forest in which the upper stratum or overstorey is in the late mature to over mature growth phases. (This definition has been amended to produce an agreed National operational interpretation as follows: 'Old-growth forest is ecologically mature forest where the effects of disturbances are now negligible'.)
Performance/ Outcomes	Measurable results of the management system related to an organisation's environmental aspects based on the forest management performance criteria and requirements of the Australian Forestry Standard.
Permissive use	Use by permission, whether written or implied, rather than by right.
Perturbation	Any relatively discrete event (natural or human-induced) in time that disrupts ecosystem, community, or population structure and changes resources, substrate availability, or the physical environment. The response to such an event is disturbance.
Pesticides	Chemicals (including herbicides, insecticides and fungicides) used to control biological damage agents.

Plantation	Stands of trees of either native or exotic species, created by the regular placement of cuttings, seedlings or seed selected for their wood-producing properties and managed intensively for the purposes of future timber harvesting.
Precautionary principle	Where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. In the application of the precautionary principle, public and private decisions should be guided by: • careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment; and • an assessment of the risk-weighted consequences of various options.
Prevention/ Minimisation of water pollution and soil contamination	Use of processes, practices, materials or products that avoid, reduce or control water pollution and soil contamination.
Productive capacity	Capacity to produce forest goods and services. Not usually applied to non-market benefits such as ecosystem services.
Provenance	The original geographic source of seed, pollen, or propagules.
Regeneration	The renewal of a tree crop by natural means (e.g., coppice, lignotubers or young plants already established on site, seed from retained or felled trees) or through human assistance (e.g., planting of seedlings, application of seed).
Region	An area considered as a unit for geographical, functional, social or cultural reasons; an administrative division of country.
Regrowth forest	Native forest containing a substantial proportion of trees that are in the younger growth phase and are actively growing in height and diameter. Regrowth forests may contain scattered individuals or small occurrences of ecologically mature, or old-growth, trees.
Riparian zone	An area, usually of linear configuration, that is geographically and ecologically associated with a river or stream.
Rotation	The planned number of years between regeneration or planting and the final harvesting of a stand of trees. Rotation length is used in forest management planning to determine sustainable yield.
Significant Biological Diversity Values	Significant Biological Diversity Values include: • threatened (including vulnerable, rare and endangered) forest types or ecosystems and old-growth forest that is depleted within a forest type or ecosystem as identified, under the nationally agreed forest reserve criteria; • forest types or ecosystems and old-growth forest that are under-represented in the regional conservation reserve system, as implemented through Regional Forest Agreements;

	• known and likely occurrences of threatened (including vulnerable, rare, or endangered) species and communities and relevant habitat; • habitat of migratory species listed under the Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999*; • Ramsar wetlands; and • natural heritage places with regionally or nationally significant concentrations of biological diversity values (e.g., refugia and centres of endemism).
Silviculture	The art and science of controlling the establishment, growth, composition, health and quality of forests and woodlands to meet the diverse needs and values of landowners and society on a sustainable basis.
Silvicultural system	A planned program of treatments throughout the life of a stand to achieve stand structural objectives, be they for wood production or other values, based on integrated resource management goals. A silvicultural system includes harvesting, regeneration and stand-tending methods or phases. It covers all activities for the entire length of a rotation or cutting cycle.
Site	The area in which a plant or stand grows, considered in terms of its environment, particularly as this determines the type and quality of the vegetation the area can carry.
Social benefit	The non-monetary and rarely calculable returns to society arising from any form of economic activity.
Stakeholder	An individual or organisation, usually locally or regionally based, who has an interest in the forest management on the Defined Forest Area.
Stand	A contiguous group of trees sufficiently uniform in age-class distribution, composition and structure, and growing on a site of sufficiently uniform quality, to be a distinguishable unit.
Seral stages	The stages of ecological succession of a plant community, for example, from young stage to old stage; the characteristic sequence of biotic communities that successively occupy and replace each other, altering in the process some components of the physical environment over time.
Sustainable yield	The yield that a forest can produce continuously at a given intensity of management.
Thinning	A cultural treatment made to reduce stand density of trees primarily to improve growth, enhance forest health, or recover potential mortality.
Threatened species and communities	A species or community listed on current schedules of relevant Commonwealth, State or Territory legislation, including schedules of rare, endangered and vulnerable species and ecological communities.
Threatening process	A process that threatens, or may threaten, the survival, abundance or evolutionary development of a native species or ecological community.

Traditional uses	Uses with a long habitual or customary history.

4 Forest management criteria and requirements

The AFS defines sustainable forest management according to a set of nine criteria. Criterion 1 addresses the management system itself, Criterion 2 addresses public participation and governance, and the remaining criteria address management performance. For each criterion, the AFS imposes a number of requirements that must be met in order to achieve certification.

This approach enables and encourages improvement to forest management practices and outcomes based on learning and experience. It recognises that forests will change over time due to human activities and natural processes, and requires management to be adapted as our understanding of the relationship between management actions and forest values improves. While the AFS separates the key forest values to set particular performance requirements for them, it is recognised that they are interconnected and cannot be considered in isolation.

The requirements of the AFS are derived from certain elements of the International Organisation for Standardisation (ISO) environmental management system (EMS) Standard AS/NZS ISO 14001:2004, the Montreal Process criteria and indicators for temperate and boreal forests and the requirements of like standardisation initiatives such as those under the certification schemes of the Forest Stewardship Council and the Programme for the Endorsement of Forest Certification Schemes. These processes provide a basis for the development of the AFS that is compatible with other national and international schemes and standards that aim to achieve sustainable forest management.

While the AFS draws on ISO 14001 and the Montreal Process criteria for its basic framework its requirements can be mapped to the equivalent requirements of other frameworks. For example:

- under the Forest Stewardship Council's Principles and Criteria, the requirements for maintenance of 'High Conservation Value Forests' are consolidated under its ninth principle—under the AFS, criteria 3 (biological diversity), 4 (productive capacity), 6 (soil and water), and 8 (cultural heritage) set out requirements that protect and maintain the identified Significant Biological Diversity Values, ecosystem services and cultural heritage attributes of concern. The Australian Forestry Standard recognises that the forest reserve system makes a significant contribution to the protection of Significant Biological Diversity Values but ensures that residual values in managed forests are properly considered for their maintenance and protection; or
- under the Programme for the Endorsement of Forest Certification Schemes framework, there is a criterion for maintenance and enhancement of forest resources and their contribution to the global carbon cycle—under the AFS, criteria 4 (productive capacity) and 7 (carbon cycle) set out requirements that protect and maintain productive capacity of the land and the contribution of forests to the carbon cycle.

4.1 Criterion 1—Forest management shall be undertaken in a systematic manner that addresses the range of forest values

NOTE: The intent of the requirements under this criterion is to ensure that forest management is carried out within a framework that enables the forest manager to address the organisation's management activities relevant to the forest management performance requirements, and is commensurate with the nature and scale of its business. It is designed to be compatible with the ISO International series of AS/NZS ISO 14001:2004 EMS standard. The management system framework is to be flexible and adaptable for forestry enterprises at all scales, and to provide for continual improvement in management.

4.1.1 The forest manager shall define a forest management policy that includes a commitment to—

- a systematic approach to forest management, appropriate to the nature, scale and impacts of the forest and forest activities;
- continual improvement in management performance and forest management outcomes to enhance the quality of the environmental, economic, social, and cultural values of forests and forest resources;
- compliance with relevant legislation and other requirements to which the forest manager subscribes;
- provision of resources appropriate to the nature, scale and impacts of the forest and forest activities;
- a process of regular review of forest management; and
- consideration of the views of stakeholders.

4.1.2 The forest manager shall develop a forest management plan, or equivalent instruments, that—

- identifies applicable legal requirements and other external requirements to which the forest manager subscribes;
- identifies and assesses the significance of specific aspects and impacts of activities relevant to the full range of forest management performance requirements of this Standard;
- sets management objectives and targets and establishes a monitoring process for identified significant impacts relevant to the forest management performance requirements of this Standard; and
- respects stakeholder input provided in accordance with requirement 4.2.2.
- the forest management plan or equivalent instruments should provide:
- scope and objectives of management;
- description of the forest estate and values to be managed, including those important for the protection of social benefits;
- rationale for the annual harvesting rates;
- description and rationale for silvicultural regimes; and
- reference to relevant operating conditions and controls for specified activities.

NOTE: The forest management performance requirements given in requirements 4.3.1 to 4.9.5 provide for protection and maintenance of environmental, economic, social and cultural values.

4.1.3 The forest manager shall implement the management system to meet the forest management performance requirements.

The forest manager shall ensure that—

- operational plans, procedures, controls and guidelines are in place to achieve the forest management performance requirements;
- roles and responsibilities are defined and there is capacity to implement the system of management;
- staff and contractors have an adequate skills base and competencies to achieve the forest management objectives and targets;
- procedures for communication and documentation are established and maintained; and
- contingency/emergency plans are in place to respond to and manage accidents and emergency situations and that they include the prevention and mitigation of associated environmental impacts and are periodically tested.

4.1.4 The forest manager shall monitor and evaluate forest management activities and their outcomes to ensure that forest management performance requirements are met and that deficiencies are corrected (where identified) to support continual improvement in forest management.

The forest manager shall ensure procedures are in place for the following:

- checking management plans and practices for compliance with legislation, codes of practice, regional and local prescriptions, guidelines and other relevant controls;
- monitoring and auditing of forest operations for conformance with planned arrangements and to ensure that the forest management performance requirements are met;
- routine monitoring and evaluation of the outcomes of forest management using a sufficiently powerful approach that allows timely remedial actions to be applied when forest management performance requirements are not met; and
- periodically auditing the forest management system to determine whether or not it conforms to the planned arrangements and has been properly implemented and maintained.

4.1.5 The forest manager shall periodically review and, where necessary, modify the forest management system and its procedures to ensure its continuing suitability, adequacy and effectiveness, and to ensure continual improvement in management performance and forest management outcomes are achieved. The review shall cover—

- the results of auditing and monitoring of forest operations and activities, and other relevant information;
- monitoring and feedback mechanisms, including the adequacy of monitoring activities; and
- policy, objective and targets, and changes to other elements of the management system to meet changing circumstances, new information and the commitment to continual improvement.

The review shall document any improvements to management performance and forest management outcomes.

NOTE: Whilst the main focus of this requirement is to ensure continual improvement in the forest management system, it must be recognised that the status quo on certain forest management elements may be current best practice or a reasonable outcome.

4.2 Criterion 2—Forest management shall provide for public participation and foster on-going relationships to be a good neighbour

NOTE: The intent of the requirements under this criterion is to facilitate effective and cooperative participation to support the implementation of this Standard by a local, informed and active stakeholder base.

4.2.1 The forest manager shall identify and establish contact with relevant stakeholders, including groups and individuals who have environmental, economic, social or indigenous interests that are directly affected by or with an interest on the management of the defined forest area.

NOTE: This requirement has potential links to the requirements of 4.8.1 to 4.8.3.

4.2.2 The forest manager shall facilitate and encourage meaningful participation of stakeholders (see requirement 4.2.1) in the development of the forest management plans or equivalent instruments at (see requirement 4.1.2), which shall include the following:

- providing culturally appropriate opportunities for stakeholders to make their views known on important issues related to management of the defined forest area and to influence decision-making in the forest management planning process;
- explaining how decisions were made, including demonstrating how stakeholders' views were considered and, where relevant, incorporated in the plan; and
- making a summary of the plan or equivalent instrument, reports on its implementation and the results of independent certification and surveillance audit reports publicly available to stakeholders**.**

  The nature of the stakeholder participation shall be appropriate to the type of forest, the scale of ownership and nature of planned operations.

NOTE: This requirement has potential links to the requirements of 4.8.1 to 4.8.3.

4.2.3 The forest manager shall foster appropriate relationships in order to be a good neighbour. Good neighbour considerations shall include—

- considering the impact of forest operations on neighbours;
- notifying neighbours that may be directly affected and responsible authorities, where appropriate, before commencing forest operations;
- taking appropriate actions to minimise any adverse impacts; and
- employing appropriate mechanisms to resolve disputes and grievances.

NOTE: This requirement has potential links to the requirements of 4.8.1 to 4.8.3.

4.3 Criterion 3—Forest management shall protect and maintain the biological diversity of forests, including their seral stages, across the regional landscape

NOTE: The intent of the requirements under this criterion is to protect and maintain the elements of the biological diversity of forests, including where relevant—

- ecosystem diversity, by maintaining the range of ecosystems across the landscape;
- species diversity, by maintaining forest dependent species; and
- genetic diversity, by maintaining representative species populations across their range

While the criterion is largely focused on native forest management, it is relevant to some aspects of plantation management such as planning and establishment. Other issues relating to biological diversity are addressed under Criterion 5, which addresses forest ecosystem health and vitality.

4.3.1 The forest manager shall actively identify and assess the significance of biological diversity values and structural elements (such as standing and fallen dead wood and

hollow bearing trees) to support the maintenance and protection of identified Significant Biological Diversity Values.

The assessment of the significance of biological diversity values shall be based on existing relevant knowledge and forest planning instruments and shall be undertaken in a regional context.

4.3.2 The forest manager shall not convert native vegetation to plantation forest cover or non-forest cover except in the limited circumstances, as follows:

a) Infrastructure development either required by legislation or regulation, or ancillary to the approved forest management plan or equivalent instrument under requirement 4.1.2, or

b) Small-scale clearing (less than10%, up to a limit of 40 hectares on a single forest management unit) with appropriate offsets.

In any of these circumstances, the forest manager shall ensure that the following:

1. Planning (identification and assessment) and practices (operations and monitoring) support the protection and maintenance of Significant Biological Diversity Values and that, as a minimum, conversion occurs only where it does not involve occurrences of—
   - threatened (including vulnerable, rare or endangered) or regionally significant ecosystems or ecological communities;
   - old-growth forest; and
   - important habitat of threatened (including vulnerable, rare or endangered) or regionally significant species
2. No native vegetation community, ecological community or ecosystem becomes depleted, or qualifies as threatened (endangered, vulnerable or rare) in accordance with Commonwealth, State and Territory legislation, regulation or species recovery plans.

NOTE 1: The AFS Technical Reference Committee considered the strong concerns about native vegetation conversion in the context of public policy, practical forest management and regional economic and social development. Native vegetation conversion is no longer considered best practice and should cease. The AFS Technical Reference Committee recognises the importance of development opportunities for Indigenous peoples, and the role that plantation development could play. Subject to the development of formal AFS supplementary guidance, consistent with the general principles of requirements 4.3.2 and 4.8.1, plantation development on native vegetation land may be permissible, within the context of such guidance.

NOTE 2: It is not intended to allow sequential small scale conversion of native vegetation, which, when combined, would result in broad scale conversion of native vegetation within the defined forest area.

NOTE 3: It is not intended to limit plantation establishment undertaken on non-native vegetation sites. Plantation establishment is permitted on significantly altered or degraded land that: (i) supports degraded native vegetation, and (ii) has no Significant Biological Diversity Values.

NOTE 4: Managers of plantations established after 31 December 2006 will be required to demonstrate conformance with this requirement as part of the certification process. Non conforming plantations may only be certified where the owner can demonstrate that they were not directly or indirectly responsible for the conversion and they commit to and implement a plan to ameliorate adverse impacts associated with the conversion of native vegetation.

NOTE 5: All forest managers must comply with requirement 4.3.2 as at 31 December 2006, except in the circumstances where operations have commenced, or are the subject of third party landowner contracts on transition lands that were signed by all parties prior to 31

December 2006. A forest operation is defined as commenced when coupe roading is complete and harvesting or clearing has commenced prior to 31 December 2006.

Completed coupe roading refers to coupe roading authorized under the relevant coupe harvest plan (or equivalent operational instrument or approval) that is fully constructed prior to 31 December 2006.

4.3.3 The forest manager shall implement practices to support the protection and maintenance of Significant Biological Diversity Values likely to be affected by forest operations.

Planning and implementation of forest operations shall be consistent with those specified in recovery/action plans or equivalent instruments and prescriptions for management and conservation of threatened (including vulnerable, rare or endangered) species and ecological communities developed under Commonwealth, State and Territory legislative processes.

Where management practices are being developed for new identifications and listings of threatened (including vulnerable, rare or endangered) species and ecological communities, the forest manager shall minimise adverse impacts by ensuring the planning and implementation of forest operations follows recognised interim guidelines and takes account of known information and relevant specialist advice.

4.3.4 The forest manager shall progressively establish and maintain a spatial configuration of forest cover, stand structure elements and growth stages that are intended to support the protection and maintenance of significant biological diversity values.

The nature of the planned actions shall be appropriate to—

- the type of forest and the scale of ownership; and
- identified regional and landscape biodiversity priorities.

4.3.5 The forest manager shall regenerate native forest with species and provenances native to the area, or from an equivalent locality, as far as reasonably practicable to maintain local gene pools and species mixes.

NOTE: This requirement is linked to requirement 4.4.4, which relates to the effectiveness of regeneration of native forests.

4.3.6 Forest managers managing plantations shall evaluate the impact of introduced species, provenances or populations**,** and constrain their spread where necessary to protect the ecological integrity of adjacent native vegetation.

Forest managers managing plantations shall ensure that all dealings with live viable organisms that have been modified by gene technology comply with the law and that any licensed release within the defined forest area is in accordance with a publicly available ecological risk management strategy. Commercial use of such organisms shall be preceded by authorised field trials that demonstrate practicality of the risk management strategy.

NOTE 1: Managers of plantations need to consider the origins of introduced species and provenances of trees to ensure that they are well adapted to site conditions. Any use of introduced species or provenances needs to be evaluated for potential impact on the ecological and genetic integrity of native vegetation.

NOTE 2: This requirement recognises**,** but is not limited to, community concerns about use of genetically modified organisms particularly regarding environmental risk, such as from gene transfer to native populations, and also the potential environmental benefits, such as through reduced reliance on chemicals, and seeks to balance these interests.

4.3.7 Forest managers managing native forests shall, where appropriate, use fire and other disturbance regimes that are applicable to the forest type or community to support the protection and maintenance of biological diversity values.

The contribution of the disturbance regime to the maintenance and protection of biological diversity values shall be reviewed regularly. The results of the review shall be used to modify the disturbance regime in the future in order to increase its effectiveness.

4.4 Criterion 4—Forest management shall maintain the productive capacity of forests

NOTE: The intent of the requirements under this criterion is to ensure that harvesting and utilisation of forest products is consistent with the objective of maintaining the long-term productive capacity of the land. Other issues relating to maintaining productivity in perpetuity are addressed under Criterion 5, which addresses forest ecosystem health and vitality, and Criterion 6, which addresses soil and water resources.

4.4.1 The forest manager shall identify existing productive uses of the defined forest area to support the maintenance of the land's long-term productive capacity and ensure it is not compromised by wood production.

NOTE: Requirement 4.8.3 relates to the exercise of existing legal or traditional uses of the forest, which may include productive uses.

4.4.2 The forest manager shall plan forest operations to ensure the productive capacity of the land, (see requirement 4.4.1) is not compromised.

Planning shall consider:

a) forest growth and forest products yield estimates;

b) future land use intentions;

c) rotation/cutting cycle program;

d) scale, intensity and timing of operations;

e) expected markets; and

f) development and maintenance of infrastructure.

Forest managers managing plantations shall also ensure that planning considers the selection of species for plantation establishment.

4.4.3 The forest manager shall evaluate and use silvicultural systems that have been demonstrated to be appropriate for the forest type, the specific stand and site conditions, forest management objectives and market/product requirements.

NOTE 1: Silviculture can also be particularly relevant to supporting achievement of the requirements at 4.3.3, 4.3.4, 4.3.5, 4.4.4, 4.5.2, 4.6.3, 4.8.2, 4.9.2 and 4.9.4.

NOTE 2: The choice of an appropriate silvicultural system or systems (i.e. natural or assisted regeneration) for a given forest is an important decision in the pursuit of sustainable forest management. The choice of a silvicultural system is influenced by a number of factors, many of which are not mutually exclusive.

The AFS Technical Reference Committee considered these issues and strong community concern about clearfelling in arriving at its position on silvicultural practices. Amongst other things, this position requires a full and transparent evaluation of all relevant factors, and does not preclude the introduction of new innovative systems in the future provided they are based on sound principles and help meet individual management objectives; however, it does not preclude the use of clearfelling where it is the most appropriate silvicultural system.

4.4.4 The forest manager shall ensure that regeneration of native forests and establishment of plantations is effective and timely.

Species composition and the density of the regeneration of native forests and the stocking rate of plantations shall be assessed and remedial action taken where necessary to ensure effective regeneration and establishment.

NOTE: This requirement is linked to requirement 4.3.5, which relates to appropriate seed sources for regeneration of native forests.

4.4.5 The forest manager shall ensure damage to forest growing stock during forest operations stays within tolerable levels, in order to maintain wood quality and promote forest health.

4.4.6 The forest manager shall implement effective measures to reduce the extent and impact of unplanned fires.

4.5 Criterion 5—Forest management shall maintain forest ecosystem health and vitality

NOTE: The intent of the requirements under this criterion is to protect and maintain the health and vitality of forests through the good management of both external and internal damaging agents, such as insects, disease, vertebrate pests and competition from non-endemic species, which can affect basic ecosystem processes and cause significant changes to the nature and condition of forests. Ecosystem health is the state of processes and natural cycles that maintains the forest's vitality, or capacity to perpetuate itself.

4.5.1 The forest manager shall identify, assess and prioritise any potential damage agents (such as weeds, insect and vertebrate pests and diseases and pathogens) that may impact on forest ecosystem health and vitality.

NOTE: This requirement is intended to cover both native (indigenous) and feral (introduced) damage agents, be they animal, plant or microbial.

4.5.2 The forest manager shall implement practices to support the maintenance of forest ecosystem health and vitality and ensure that damage stays within tolerable levels. Management shall include procedures for forest health surveillance and control or eradication of damage agents.

4.5.3 Forest managers managing native forests shall use fire and other disturbance regimes to maintain and enhance forest ecosystem health where appropriate to the forest type or scale.

The contribution of the disturbance regime to the maintenance of forest health and vitality shall be reviewed regularly. The results of the review shall be used to adjust the way the disturbance regime is used in the future in order to increase its effectiveness.

4.5.4 The forest manager shall manage forests that have been degraded by damage agents to facilitate their rehabilitation.

4.5.5 The forest manager shall reduce reliance on chemicals (including pesticides and fertilisers) with potential for environmental harm and favour alternative cost-effective methods (including safe biological agents) and more benign chemicals that minimise adverse actual and potential impacts on the environment.

NOTE 1: This requirement seeks to reduce or minimise reliance on the use of chemicals and is not intended to result in forest managers foregoing achievement of critical forest management outcomes.

NOTE 2: More benign chemicals refer to those with less persistence, more target specificity and less general mobility within the environment.

4.6 Criterion 6—Forest management shall protect soil and water resources

NOTE 1: The intent of the requirements under this criterion is to maintain the protective and productive functions of forests and their ecosystem services to society through good management of factors such as erosion, vegetation cover, and chemical pollutants and contaminants that affect a range of important soil and water properties (e.g., soil biology, structure and fertility, water quality and water flows).

While the requirements are specific for the forest manager, it should be noted that there are a number of landscape scale issues where the responsibility for stewardship is shared among a number of catchment or land users, and the forest manager's responsibility is part of a broader community of land managers in the regional landscape.

NOTE 2: Other issues relating to protection of soil and water resources are addressed under Criterion 4, which addresses maintenance of long-term site productivity.

4.6.1 The forest manager shall identify and assess the inherent soil and water values that can be adversely affected by forest operations in order to maintain the productive and protective functions of the forest.

4.6.2 The forest manager shall manage forest operations to minimise adverse changes to water quality (physical, chemical or biological) with the objective of—

- minimising transport of soil from disturbed areas into waterways;
- maintaining riparian zones and protective buffer strips; and
- designing, constructing and maintaining temporary and permanent roads and roadway crossings of waterways to recognised standards intended to minimise degradation of water quality.

NOTE: Requirement 4.6.5 addresses contamination from chemical, fuel and oil pollutants.

4.6.3 The forest manager shall manage forest operations to ensure hydrological flows are in accordance with authorised regional catchment goals, where they exist.

Where regional catchment goals do not exist, the forest manager shall liaise with the relevant catchment management authorities and minimise adverse environmental impact of changes in hydrological flows by ensuring that—

- both long-term and short-term disturbances to hydrological flows relative to the existing situation are taken into account; and
- the environmental impacts of both increased and reduced hydrological flows are taken into account.

4.6.4 The forest manager shall manage forest operations to protect and maintain the physical, chemical and biological properties of soil and improve those properties where appropriate and reasonably practicable.

The forest manager shall—

- minimise the extent of land within forest harvesting areas occupied by zones of major soil disturbance;
- ensure that rutting does not exceed that specified in relevant codes and equivalent instruments or operational guidelines;
- promptly rehabilitate extraction tracks, temporary roads and product storage areas; and
- minimise any nutrient loss.

4.6.5 The forest manager shall manage forest operations to prevent or constrain water pollution and soil contamination, with the objective that—

- chemicals from planned applications are not transported into waterways; and

- disposal of waste fuels, lubricants and chemicals is carried out in the prescribed manner.

4.7 Criterion 7—Forest management shall maintain forests' contribution to carbon cycles

NOTE 1: The intent of the criterion is to maintain the capacity of forests to act as a net carbon sink and to minimise the emission of greenhouse gases resulting from forest activities by good management of the forest ecosystem biomass and carbon pool (including standing vegetation, coarse woody debris, peat and soil carbon).

The criterion also recognises the possible future emergence of economic, social and environmental criteria in schemes to give credit for carbon sequestration in forests and provides a linkage to programs and activities that may emerge to address this.

NOTE 2: Other issues relating to forests' contribution to the carbon cycle are addressed under Criterion 4 which addresses productive capacity, including the forests' capacity to act as a carbon sink.

4.7.1 The forest manager shall acknowledge the forests' capacity to act as a net carbon sink and demonstrate a commitment to minimising greenhouse gas emissions.

4.8 Criterion 8—Forest management shall protect and maintain, for Indigenous and non- Indigenous people, their natural, cultural, social, recreational, religious and spiritual heritage values

NOTE: The intent of the requirements under this criterion is to recognise rights of forest users and to ensure protection of—

- sites of cultural heritage, ceremonial and spiritual affiliation, aesthetic and religious value (that is, cultural, religious, spiritual, and social heritage values); and
- ther natural heritage values not already catered for at Criterion 3 (biodiversity) and Criterion 6 (soil and water).

The requirements recognise that there is a connection between management of forests and forested lands and these values for the benefit of society

4.8.1 The forest manager shall recognise the rights and responsibilities of Australia's Indigenous peoples based on their prior ownership of the forests, seas, coasts and waters.

This shall include—

- providing for significant Indigenous input into decision making;
- application of Indigenous peoples' knowledge of sustainable development and management of forests to the management of the defined forest area;
- supporting education and promotion to the wider Australian community of Indigenous peoples' rights and interests in forests as an important part of Australia's national interest;
- support of Indigenous peoples' economic aspirations in sharing benefits from the management of forests and associated environments; and
- recognition of Indigenous people's cultural and traditional customs and promote their eco-cultural sustainability.

NOTE 1: The intent of this requirement is to acknowledge mutual aspirations and establish a basis to further co-operative relationships between the forest manager and the Indigenous community. It is not intended to influence either current or future Native Title claims in any way. Native Title is recognised and protected by the *Native Title Act 1993*, nothing in this Standard affects the forest managers' obligation under this Act.

NOTE 2: This requirement has potential links to the requirements at 4.2.1to 4.2.3.

4.8.2 The forest manager shall protect important natural heritage and cultural, religious, spiritual and social heritage values.

Protection of Indigenous heritage values shall be undertaken in consultation with relevant Indigenous peoples to avoid damage to important values during forest operations.

Forest managers shall safeguard non-Indigenous heritage values through identification of known values.

The assessment of the importance of non-Indigenous heritage values shall be based on relevant studies and forest planning instruments and shall be undertaken in a regional context.

The identified important non-Indigenous heritage values shall be considered in the preparation of forest management plans or equivalent instruments and appropriate actions implemented in consultation with the appropriate bodies.

NOTE: This requirement has potential links to the requirements at 4.2.1 to 4.2.3.

4.8.3 The forest manager shall allow exercise of existing legal or traditional uses of the forests to continue.

Where such uses threaten the condition of the forest or the achievement of the forest management performance criteria, the forest manager shall pursue negotiated outcomes.

The forest manager shall take appropriate action to constrain unauthorised or illegal activities.

NOTE: This requirement has potential links to the requirements at 4.2.1 to 4.2.3 and 4.9.1.

4.9 Criterion 9—Forest management shall maintain and enhance long-term social and economic benefits

NOTE: The intent of the requirements under this criterion is to addresses the management of forests in meeting community needs, including the value and volume of wood production, recreation and tourism, employment, income, and social well being, in particular for regional communities with a high economic and social reliance on forests and forest-related industries.

4.9.1 The forest manager shall identify opportunities and implement actions appropriate to support regional industry and regional communities, having due regard to the role of forestry in rural and regional development and the economic, social, environmental and cultural requirements of the AFS.

NOTE: This requirement includes adequate public access to forests for the purposes of recreation taking into account respect for ownership rights and the rights of others as well as effects on forest resources and compatibility with other functions of the forest.

4.9.2 The forest manager shall pursue the efficient and optimal use of harvested forest products to encourage best use of the defined forest area having due regard to the economic, social, environmental and cultural requirements of the AFS.

4.9.3 The forest manager shall identify opportunities and implement appropriate actions to support employment and skills development of forest workers.

4.9.4 The forest manager shall foster a safe working environment and comply with relevant Occupational Health and Safety (OH&S) employment legislation.

The forest manager shall commit to occupational health and safety and the development of reforms to facilitate improvements in workplace health and safety.

4.9.5 The forest manager shall respect the rights of employees and other workers, including their right to join a union or association and to collective bargaining.

The forest manager shall—

- support equal employment opportunities and use qualifications, skill and experience as the basis for recruitment and advancement of staff;
- comply with any collective agreements currently in force; and
- carry out bargaining with workers and their representatives in good faith and with best efforts to reach agreement.

NOTE: Requirements 4.9.3 to 4.9.5 provide a framework for forest managers to demonstrate respect for core International Labour Organisation (ILO) conventions.

5 Certification framework

Certification process

The certification process involves determining whether forest management meets all the normative requirements of the AFS. The following (Box 1) is an overview of the main steps in the certification process.

Box 1: The Steps in the Certification Process

Initial approach	When a forest owner/manager makes an initial approach to an accredited certification body, the certification body will ask for some basic information about the forest management in order to provide a quote and formal proposal.
Scoping visit	Though not essential, a scoping visit is useful in identifying at an early stage any areas where a forest is unlikely to meet the requirements of the certification standard so they can be addressed before the audit begins.
Formal application	When a forest owner/manager is ready to proceed with certification, they complete a formal application form and agree a fee with the certification body.
Initial audit (Stage 1)	The certification body will undertake a review of key management system processes and a sample of field operations, and provide a report that assists the forest owner/manager to identify and rectify any major areas of concern. **NOTE:** Small growers undertaking certification may seek to substitute this stage by self- or assisted-completion of project checklists that cover the requirements of the AFS.
Certification audit (Stage 2)	The certification body evaluates the management of the forest against the requirements of the certification standard.
Certification	If the evaluation is positive, a certificate of registration will be issued.
Surveillance	The certification body will check the certificate holder to ensure continued compliance with the certification Standard. They will check that any corrective actions the forest owner/manager was asked to carry out have been completed.
Re-certification	The certification body will periodically need to re-evaluate the management of the forest against the requirements of the certification standard.

Certification bodies

Certification bodies are specialist organisations that undertake independent, third-party assessments of conformance with established standards. In Australia, the Joint Accreditation System for Australia and New Zealand (JAS-ANZ) accredits certification

bodies to audit and certify to particular Standards, to provide an assurance that certification bodies are both competent and independent in regard to their certification activities.

Audit team

Audits will be carried out by a team nominated by the certification body, comprising a lead auditor/team leader and other auditors, who together, have suitable experience and expertise to carry out the audit.

The process of selecting the team should give consideration to—

- the defined forest area's size, characteristics and forest types; and
- a suitable mix of skills, including auditing, statistical sampling and analysis, forest auditing, forest management, forest ecology and soil and water conservation.

Undertaking the audit

The main step in the certification process is the audit. During an audit, it is the job of the audit team to assess whether or not the management of the forest being audited complies with the requirements of the AFS. This is done by collecting and analysing *objective evidence* of compliance against each requirement.

Evidence may be collected through—

- examination of documents, such as management plans, monitoring records or data from surveys;
- observations of actual on-the-ground practices and conditions in the forest; and
- interviews with staff, contractors and interested parties.

Information gathered from interviews should be verified by acquiring supporting information from independent sources. Non-verifiable statements should be identified as such.

Audit findings

The audit team should review all the audit evidence to determine whether forest management conforms to the requirements of the AFS. The audit team should ensure that any audit findings of non-conformity are well documented and supported by audit evidence.

There are two types of non-conformance—

- major non-conformances, which occurs when forest management is failing to meet a relevant requirement; and
- minor non-conformances, which occurs when forest management is partially failing to meet a requirement, or where there is significant risk of a requirement not being met.

If minor non-conformances are found, the certification body may still award a certificate, provided that the forest manager identifies the root cause of the non-conformance and provides a plan acceptable to the certification body to achieve the outstanding requirements within an agreed time frame. The certification body will verify that the requirements are being implemented during their regular surveillance visits.

If a major non-conformance is found, no certificate can be awarded until the requirement is met. If there is a substantial time-lag before the major non-conformance is addressed, a new audit may be required in order to achieve certification.

Site sampling

Some large forest managers may operate over a large number of forest management units. In some circumstances, the entire organisation can be certified on the basis of a sample of sites within the defined forest area. The basis for selection of sites for sampling is that—

- at least part of the sample shall be random;
- the full range of sites shall be formed into subgroups of like-forest management units on the basis of ecosystem, size of the forest, and tenure;
- a sample of sites shall be taken from each of the subgroups, and
- the minimum number of sites audited shall be sufficient to provide an appropriate statistical level of significance/confidence.

Surveillance audits

After initial certification, surveillance audits of the certified forests and forest management system will be conducted at a frequency no less than once every twelve months. This is a partial audit of the requirements, and is planned to cover all requirements over the three-yearly certification cycle. Some key requirements will be reviewed on an annual basis.

After three years, the certified forest owner/manager must be reassessed.

Application of the requirements

Certified forest management can occur within different operational and ownership constraints. These include—

- a single forest management unit, which is defined as a discrete, contiguous forest managed by one owner, manager, or agency;
- a single forest management unit, which is defined as a discrete, contiguous forest managed by one or more owners, managers, or agency;
- a group of forest management units under a single land tenure arrangement which is managed by a single forest manager using a single overall management system or process;
- a group of forest management units under multiple land tenure arrangements that are managed by a single forest manager using a single overall management system or process;
- forest management units covering both native and plantations (exotic and native species) under the arrangements described above; and
- a group of individual growers with specific joint interests.

The forest operations and activities to be included under a single certificate will depend on factors such as the nature, scale and intensity of activities. From a regional perspective, the varying contributions to sustainability of different types of forest use may need to be considered. While small areas of forest may not include the full suite of forest values, the combination of forested areas in a region will provide the basis for sustainable forest management. Forest managers may in these situations rely on the broader environmental planning powers of Commonwealth, State and Territory, and local government to manage regional sustainability requirements.

Each of the performance and systems requirements is intended to be incorporated into forest management to the extent that the forest manager can control or influence their achievement within the forest covered by the certification. The AFS also provides a guide to verification and approaches to implementation, which accommodate different scales of ownership of native forests and plantations.

The performance requirements need to be applied at appropriate ecological scales, recognising that different criteria apply at different scales which will affect the ability of the forest manager to control or influence their achievement. The requirements should also be interpreted and applied in the context of the relevant policy and legislative framework.

The system requirements need to be applied in a manner commensurate with the size and nature of the forest manager's particular activities, and will be audited accordingly.

It is recognised that some requirements may be inappropriate for some enterprises in some situations. Some flexibility to allow local adaptation may therefore be acceptable. The certification body carrying out the audit will make a professional judgement as to the acceptability of the flexibility, and may consult appropriate specialists.

Group certification

Group certification offers the opportunity for managers of small forest areas to join together and gain benefits of increased scale, while retaining management control of their forest.

Group certification requires that all group members commit themselves to complying with the requirements of the AFS. Group members must be organised under an entity/body that is capable of entering an agreement with a certification body on the group's behalf. The group must maintain a register of members with relevant data, such as the area participating in the group certification.

Defined forest area

The forest manager will need to specify or define an area of forest (including land and water) to which the requirements of the AFS are applied. The defined forest area does not have to be a contiguous block or parcel of land. The forest manager will need to demonstrate management control over the defined forest area, which allows them to achieve the requirements of this Standard.

The intent of the above guidance is to provide sufficient flexibility to allow forest managers to define the coverage of their AFS certificate in a way which reflects their business needs and differing operational situations. Nevertheless, it is intended that this guidance should preclude an organization omitting elements of its operation which should be properly included in its defined forest area from the scope of its certification/registration.

NOTE: In certain circumstances, two organisations may have forest management interests in the Defined Forest Area with one having a custodial or ownership right whilst the other has a management or operational role. The organisation seeking certification under the AFS will need to demonstrate that it has management control over the forest operations through appropriate agreements or contracts, for the purpose of AFS outcomes.

Statistical monitoring to protect environmental, social and economic values

To protect the environment, society and the economy, monitoring systems are needed that—

- tell us there *is* a serious problem when one exists (thus avoiding over-confidence, called 'false negatives') and
- tell us there *is not* a serious problem when there isn't one (thus avoiding false alarms, called 'false positives').

The first is crucial for detecting unacceptable impacts on environmental and social values, the second for ensuring that the economy is not unnecessarily regulated for environmental reasons. Standard certification procedures implicitly assume that, if no problem is observed, none exists; that is, they ignore the possibility of over-confidence. Experience has demonstrated the difficulty of detecting unacceptable environmental impacts against a

background of natural variation, measurement error, and incomplete knowledge of biological or ecological processes. Furthermore, standard monitoring procedures do not attempt to determine whether the intensity of monitoring is excessive, laying an unnecessary burden upon a proponent.

To remedy this situation, the AFS requires that monitoring and auditing protocols report the probability that they will detect important changes (if they exist) for identified significant aspects of forest management. This is known as 'statistical power'. As a result, those who propose a monitoring system must demonstrate that the system would be reasonably certain of detecting unacceptable impacts (for a defined set of indicators, at an agreed level of reliability). Monitoring protocols that do not report statistical power may violate AFS standards. This innovation makes the AFS a world leader in the certification of sustainable forest management.

Because of this requirement, AFS monitoring systems will answer key questions not directly addressed in most current systems: How likely is it that a survey procedure will detect a particular species of interest? How many samples would be required to detect an invasive weed or a new disease with a given degree of reliability? Will existing monitoring data reliably detect important trends in water quality, given the observational uncertainty and significant environmental variation? Can the monitoring protocols be streamlined or made simpler without running an excessive risk of undetected unacceptable impacts on the environment?

The AFS ensures that forest managers' and certifiers' reports answer these sorts of questions. This approach should give stakeholders confidence that the monitoring program will reliably report the actual sustainability of the operation seeking certification while minimizing the burden upon industry of unnecessary monitoring.

Timeframe

Special features of forest management are the long-term implications of management strategies and the lengthy process of the growth and development of a forest. Decisions made decades ago strongly influence the forests of today. Therefore, the requirements of the AFS oblige the forest owners, managers and certifiers to assess forests on their present structure and layout and to consider the plans for forest management in the short, medium and long-term.

Where present structure and layout fail to meet the requirements, forest managers will need to demonstrate through management planning documentation, design plans and on going activities in the forest that they are taking active measures to achieve conformance with the requirements. They will also need to demonstrate that there is a time frame for achieving full conformance based on sound management principles.

Size of ownerships

The level and complexity of management needed to meet the requirements of the certification Standard will depend on the size, type and ownership of the forest being audited. In particular, small ownerships will not be expected to have the same level of documentation or management systems and procedures as larger ownerships. Certification bodies will take account of the size of the ownership and the scale and intensity of management and operations. The determining factor is the risk of the forest management system failing to effectively and consistently achieve the forest management performance requirements, at the existing levels of documentation or system development.

To help define this within the context of this Standard, guidance supplements have been prepared. These Supplements relate specifically to 'small' and 'medium and large' forest management units. The complex nature of forests and forest management makes it

impossible to provide an exact definition of these. In particular, in some situations it will be the size of the forest that is relevant (e.g. the scale and rate of felling) whereas in others it will be the size of the forestry enterprise that will determine what is expected. The following should be used as a guide:

- Small—typically less than 1000 hectares in size.
- Medium—a forest area typically between 1000–10 000 hectares in size.
- Large—a forest area greater than 10 000 hectares.

Some independent forest managers act as resource managers for a number of clients each of whom owns a 'small' forest. However, the total area managed by the independent manager is not 'small'. For the purposes of certification, some of the forest management performance requirements may still be interpreted as for 'small' ownerships but others, particularly the management systems requirements, might be more appropriately interpreted as for 'medium and large'.

Scale of requirements

Many of the requirements in the AFS, particularly those relating to forest operations and conservation, relate to proportions of the overall forest area. In applying such requirements, an appropriate scale must be decided, which allows the forest manager to achieve the requirement in the way that is best suited to the nature of the forest. This is particularly important for—

- large forest blocks, particularly single-species plantations; and
- holdings that are under common management but are physically fragmented (for example, in estates with several blocks of forest).

In large blocks of forest, it is acceptable to meet some requirements by concentrating management in one area provided—

- all plans for implementing a requirement unevenly within the block are based on good practice that aims to meet the purpose of the requirement; and
- wherever appropriate, management is based on a design plan.

In holdings under a common management which are physically fragmented, it will normally be acceptable for the requirements to be met over the holding as a whole, not in each individual block provided—

- all forest blocks are located in the same landscape unit;
- plans for implementing requirements unevenly in different blocks are based on good practice that aims to meet the purpose of the requirement; and
- wherever appropriate, management is based on a design plan.

Other cases may arise which are not covered by this guidance. Such cases will be assessed by the certifiers on a case-by-case basis.

APPENDIX A

Context for the Australian Forestry Standard— Management of Australia's forests

(Informative)

General

The AFS was developed to address the specific issues of forest management in Australia. The following provides a context for the AFS.

Origins of Australia's forests

Australia's forests have ancient origins that determine their unique nature and affect how they can be utilised and managed. The Australian continent broke from the landmass of Gondwana about 135 million years ago and since then has moved northwards from a cool, moist climate into a warmer and drier climate. These climatic changes have had a significant influence on the evolution of Australia's flora and fauna, as have other events, such as the rise and fall of seas and the current separation of New Guinea and Tasmania from the mainland 10-15 thousand years ago. Fire and drought-adapted sclerophyll vegetation, including eucalypts and acacias, eventually replaced cool and warm rainforest approximately 15 million years ago, and now comprise the majority of present day forest vegetation communities.

Fire is a natural and integral part of many Australian forest ecosystems. Fire exhibits great spatial and temporal variability creating a wide range of ecological effects to be managed depending on intensity, frequency and the season in which it occurs. Indeed, a high proportion of the catastrophic level fire damage to forest assets in the post European settlement period for which records are available have been caused in quite a small number of fire events. Whilst the Australian continent has been geologically stable for 65 million years, the land surface has continued to differentially weather and erode resulting in soils of low nutrient status and limited structure, which is also strongly reflected in the diversity and unique characteristics of Australia's flora and fauna.

Human occupation and impacts

Most of Australia's domestic environmental concerns have developed out of a clash between its biogeography and its settlement and land development patterns. Australia is rich in biodiversity with many unique species of plants and animals. Many are threatened with extinction due to habitat alteration and loss or competition and predation from introduced species. Similarly, imported systems of land and agricultural exploitations, and the pattern of settlement to which they are related, have had substantial negative impacts both on the country's biological diversity and on its ecosystems, including rivers, estuaries and tidal marshes. The long-term effects have emerged as Australia's two most pressing domestic sustainable development concerns, dry land salinity and inefficient agricultural use of scarce water resources.

For the Aboriginal peoples of Australia, native forests are rich in cultural and spiritual significance and have traditionally provided a diverse range of resources for food, shelter, clothing, ceremonial objects, tradeable items, medicine, transport (canoes, rafts), weapons, tools and other implements.

The arrival of humans in Australia (at least 40 000 years ago) coincided with a change in the nature of native forests. The extent to which this was the result of Aboriginal peoples' use of fire and other disturbance regimes, or of climate change, is still a matter of debate.

The colonisation and settlement of Australia by non-Indigenous cultures, primarily British colonists, altered the state of the forests significantly. Forests were cleared to make way for settlement, for agriculture and for pastoralism. Initially, clearing took place in the coastal areas to provide timber to meet the demands of colonial society, and large tracts of forest were converted for agricultural production. The condition of the forest resource was also affected by activities such as the gold rushes of the mid-to-late 1800s. In the late 1800s, demand for wheat resulted in clearing of woodland and open forest in the drier inland regions of the continent.

In 1901, at Federation, the administration and management of forests remained a State responsibility. States enacted major legislation to conserve forests in perpetuity and to manage timber resources, reflecting public concern over loss of forests to agriculture, from the middle decades of the 19th Century through to the first quarter of the 20th Century. They protected both conservation and production forests from clearing for other land uses.

Rapid economic growth and technological developments following World War II increased demand and opened up previously inaccessible areas. The economic boom that followed World War II created an intense demand for construction timber that was met largely from native hardwood forests. In addition, a pulp and paper industry grew rapidly, based on native species and a growing resource of plantation softwoods, particularly the exotic species Radiata Pine (*Pinus radiata)*. Recognition of the inability of native forests to meet long-term national demands led to the rapid expansion of the softwood plantation estate from 1965. This expansion was based on silvicultural research and experience in plantation development dating back to the late 1800s.

Impact of timber production

Whilst clearing for agriculture had significant and irreversible effects on forest and woodland ecosystems, their exploitation and use for timber had fewer and, in many cases, largely transient effects. Australian native species generally have a capacity to regenerate after harvesting because of their biological adaptations to disturbance. With appropriate harvesting, silvicultural management and conservation strategies, the composition of forests has the ability to be maintained. Impacts of harvesting on forest structure, biomass distribution and habitat, however, are more profound and require specific measures for sustainable management and sufficient time for recovery. Over-cutting of commercial timber species in a number of native forest types around Australia has resulted in a gradual decline in their productivity and condition, together with consequent modification of habitat. These impacts created significant public concern and resulted in a review of forest management (Commonwealth of Australia 1992). Research and development into the sustainable management of commercial forest types, in particular determination of sustainable yields and harvesting regimes, over the last 20 years, and more recently under Regional Forest Agreements, has resulted in substantial improvements in the prospects for the sustainable harvesting and management of these forest types.

Impact of fire

European settlement altered existing natural and indigenous fire regimes, traditionally by limiting or attempting to exclude fire, most recently by burning under prescribed conditions to reduce the extent and severity of bushfire for the protection of life and property and amelioration of deleterious ecological effects. As a result of altered fire regimes over the last 200 years, the native forests and woodlands of Australia have undergone significant changes in structure and species composition which have contributed to ongoing fire control and management problems. The exploitation of forests for timber in the late 1900s and early 20th Century and attempts at the imposition of a fire exclusion policy led to unprecedented accumulations of organic debris on the forest floor. This resulted in an infrequent, but highly damaging, high-intensity bushfire regime that replaced Aboriginal and lightning-caused fire regimes under which flora and fauna had developed. It has been estimated that about 75% of fires on the eastern seaboard are human in origin and deliberately lit.

The effects of these less frequent, but hotter, fires maintained a cycle of high intensity bushfires by increasing the time available for fuel build-up, ensuring an increased amount of fuel being available for combustion and promoting the flammability of the vegetation. Damage and destruction to life and property and deleterious environmental impacts, including soil erosion and vegetation changes, from these fires required intervention through regular low intensity prescribed burning, which in turn imposed a new set of ecological effects on the forest and woodland environment. Although more knowledge of the impacts of managed fires on specific habitats is required, extensive research and development over the last 40 years into the behaviour and ecological effects of fire has allowed fire to be managed on a more sustainable basis. Fire management now addresses the need for protection of life and property to be better balanced with the use of fire for the conservation and sustainable management of forest and woodland communities. In the case of plantations, fire is controlled and managed predominantly for the protection of life, property and asset.

Social and economic benefits of forests

Forests that are managed for wood production provide a range of benefits to the community. These benefits include employment and wealth creation, regional industries and wood which is processed into a range of timber products.

In 2001—2002, the annual turnover of the wood products manufacturing industry was $15.07 billion, a 25% increase in turnover on the last five years. The gross value of forestry production (value of logs at the mill door, before processing) was $1.31 billion in 2001—2002 and $1.39 billion in 2002—2003. Production of hardwood (native forest) sawnwood declined over the last decade, from 1.44 million cubic metres in 1990—1991 to 1.06 million cubic metres in 2002—2003, while production of softwood more than doubled, from 1.34 million cubic metres in 1990—1991 to 2.98 million cubic metres in 2002—2003. A total of more than 28 million cubic metres of roundwood were harvested from Australia's forests in 2002—2003 and more than half of this, some 18 million cubic metres, was produced from plantations.

The value of wood product exports has more than doubled over the last decade, up from $658.2 million in 1990—1991 to $2.054 billion in 2003—2004. In contributing to this trend, woodchip exports have increased over 50% in value terms, but as a proportion of total exports have dropped from 63% to 39%. Exports of paper and paper board have more than tripled over this period, roundwood and sawnwood have increased almost five-fold and panel products over six-fold. In 2003—2004, the industry's export earnings of $2.054 billion from wood based products by sector were as follows:

- woodchips—39%.
- pulp paper and paper products—43%.
- panel products—7%.
- sawn timber—4%.
- roundwood—6%.

The forestry sector is increasingly attracting the interests of international investors, while, at the same time, many domestic enterprises are expanding their companies by focusing on value-added production. It is estimated that in the last 10 years, over $9 billion has been invested in the Australian forest and wood product sector.

The forest sector directly employs more than 137,000 people in 2002—2003 (Forest & Forest Products Employment Skills Company Ltd, 2004), with over 20,000 in forestry, harvesting and haulage, 66 000 in sawmilling and timber manufacturing industries, 14 000 in pulp and paper, panel and board manufacturing industries, 29 000 in timber merchandising and 8 000 in industry support services. The wood manufacturing industries are represented by 1,141 sawmills (862 hardwood and 279 softwood), 30 panel

manufacturers (plywood, particleboard and medium density fibreboard), and 22 pulp, paper and paper products manufacturers.

From the late 1960s, the Australian conservation movement rapidly expanded reflecting a raised level of concerns about the impacts of forest harvesting, particularly of native forests for woodchips, on biodiversity and other forest values, such as wilderness and old-growth. The movement also called for an end to harvesting in rainforests and an expansion of the national park system. Public controversies about the nature, extent and intensity of timber harvesting, particularly in public forests and on the level of creation of exotic plantations on both freehold and public land continue to the present time. In the last quarter of the twentieth century, extensive areas of primarily public forest were added to the forest conservation estate through the creation of, or the addition to, national parks and reserves by State Governments and through programs for the purchase of private lands for the preservation of important conservation values.

Extent of Australia's Forests

As at 2003, Australia had a total area of forests[2] of over 164 million hectares, made up of over 162 million hectares of native forests and over one and a half million hectares of plantations (National Forest Inventory, 2003). With a land area of almost 769 million hectares, this means that over 20% of the continent is forest-based, according to the national definition adopted for forests.

Native forest estate

Of the 910 plant communities generally recognised as occurring in Australia, 457 were considered to be forest communities (Commonwealth of Australia 1998). These are grouped into eight broad native forest types: Eucalypt, Acacia, Melaleuca, rainforest, Casuarina, mangrove, Callitris and 'other forest'[3]. Plantation forests are treated in two categories: hardwood (mainly *Eucalyptus* species) and softwood (coniferous species mainly *Pinus* species and to a much lesser extent, *Araucaria* species). Table 1 shows the total land area on which each of these native forest types occurs. Australia's native forests are classified at the national level into three crown cover classes with 63% of forests are woodland (20—50% crown cover); 28% are open wet and dry sclerophyll forest (51—80% crown cover); and about 3% are closed forest (81—100% crown cover) consisting of 80% rainforest and 20% mangroves whilst the remaining 6% of native forests are yet to be classified.

Forests are naturally interspersed with grassy woodlands, native grasses occurring in a patchy distribution across the landscape, but clearing has further contributed to the fragmentation of the forest resource. It is estimated that about 42% of Australia's native forest occurs in patches greater than 100 000 hectares, but there are also many very small patches. Forest patches are mostly clumped in the coastal and tableland forested regions, while they become smaller and more dispersed from the slopes towards the interior of the continent with increasing aridity.

National level data suggest that in the 200 years since European settlement, Australia has lost approximately 40% of its forest area, principally due to clearing of land for agriculture.

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[2] The definition of 'forest', as used by the National Forest Inventory and based on the 1992 National Forest Policy Statement is: '*an area incorporating all living and non-living components, that is dominated by trees having usually a single stem and a mature or potentially mature stand height exceeding 2 metres, and with existing or potential projected crown cover of overstorey strata about equal to or greater than 20 per cent'.*

[3] 'Other forest' is mainly woodland forest which, includes mixed species, unknown and minor genera, including *Adansonia, Angophora, Archidendropis, Atalaya, Banksia, Brachychiton, Flindersia, Hakea, Heteroendrum, Lamarchea, Leptospermum,* and *Lysiphyllum.*

Plantation forest estate

Plantations[4] play an increasingly important role in supplying an economically viable, reliable and high quality wood resource that complements wood supplied from native forests.

Plantations represent a major opportunity for growth in Australia's long-term wood supply. Australia's first commercial pine plantations were established by 1880, but it was not until the 1960s and 1970s that large increases occurred in State-owned plantations under a Commonwealth loans scheme. By 1995, over 930 000 hectares of softwood plantations and 150 000 hectares of hardwood plantations had been established to meet the growing demands for sawn timber and pulpwood for paper products. Governments and industry, through the National Plantation Strategy —Vision 2020, established a goal of trebling the current plantation area to 3 million hectares by the year 2020. By the end of 2004, 1 716 172 hectares of plantation had been established of which 58% is softwood (1 000 642 hectares) and 42% is hardwood (715 531 hectares) (National Plantation Inventory, 2005).

The National Plantation Principles, State-based codes of forest practice and accompanying State legislation, regulations and 'Good Neighbour' protocols have been developed to facilitate the sustainable management and production of plantation-grown timber.

Ownership of Australia's Forests

Of Australia's 162 million hectares of native forest, nearly 75% is publicly owned with about 25% in private ownership[5]; however, about 62% of publicly owned native forest is leased by the private sector, mainly for pastoral use. A significant area of the public forest estate (including that under private leasehold) may have residual native title and land rights, which are a matter of contemporary debate and in some cases, are yet to be resolved. Almost 72% of all native forested land in Australia is managed by the private sector with 39 million hectares on private freehold land and an additional 75 million hectares on private leasehold land. This compares with approximately 7% under a public multiple-use forest tenure. These forests are managed for a variety of commercial and non-commercial purposes with 25% of Australian native timber production coming from private native forests and 45% of ecosystems occurring on private land being identified as priority for conservation. The ownership of Australia's plantation estate was divided fairly evenly between public and private interests in 2002 but now has moved to nearly 60% private ownership. Private owners range from large listed industrial companies and forest managers utilising investment funds with holdings of tens or thousands of hectares to small landholders and investors owning as little as one hectare.

Six broad tenure categories are recognised in Australia as follows:

- Whilst not a recognised tenure, it is recognised that **a native title component** extends across the other applicable categories, which includes common-law title recognising the customary rights of Indigenous people and is protected by the *Native Title Act 1993* and granted or negotiated land title to which Indigenous people have gained title;
- **State (multiple use) forests, Conservation reserves, and Other Crown Land.** These tenures are publicly owned lands, the management of which is vested in a particular body or agency for a specified purpose, such as forest management or nature conservation, in accordance with State/Territory acts and regulations;
- **Leasehold land.** This is land that is publicly owned but management is vested with a variety of bodies or agencies who may lease the land for a variety of purposes. In this case the rights of the lessee are usually defined in the lease agreement with the

[4] The definition of 'plantation', as used by the National Plantation Inventory and based on the 1992 National Forest Policy Statement is: 'intensively managed stands of trees of either native or exotic species, created by the regular placement of seedlings or seeds'.

[5] Includes a small amount of unresolved tenure.

State/Territory body or agency concerned, and is generally regarded as 'privately managed'; and

- **Private Freehold Land**. This is land for which the owner has a clear legal or freehold title and is under private ownership.

The distribution of native forests and woodlands across major tenure categories are shown in Table 1. Over 17% (nearly 21.5 million hectares) of publicly owned native forest occurs in declared nature conservation reserves, with off-reserve categories allowing for further protection in multiple-use forests.

Approximately 11.4 million hectares are classified as multiple-use forests with over 10 million hectares of Eucalypt and *Callitris* available for timber production, though in reality some of this is unavailable because it is inaccessible or is required for environmental protection under codes of practice. Of the multiple-use native forests available for timber production, nationally it is estimated that less than two-thirds is available as net harvestable area with the percentage varying between 60% to 70% by States with no timber production in South Australia, the Northern Territory and the Australian Capital Territory. It is estimated that less than one per cent of the net area of forest available for timber production is harvested and regenerated each year.

TABLE 1

Area of major Australian native forest and woodland types by tenure ('000 hectares)

Forest Type	State (Multiple Use) forests	Conservation reserves	Other Crown Land	Private	Leasehold	Unresolved tenure	Total
Eucalypt	10 119	17 111	11 653	32 689	54 141	1 312	127 025
Acacia	206	588	864	2 230	12 090	508	16 488
Melaleuca	46	537	83	1 180	5 184	28	7 056
Rainforest	617	1 846	191	1 049	478	32	4 214
Casuarina	7	800	28	145	1 043	15	2 039
Mangrove	1	69	166	329	85	99	749
Callitris	240	124	70	706	1 178	12	2 330
Other	160	415	88	599	1 398	120	2 780
Total	**11 395**	**21 491**	**13 143**	**38 928**	**75 596**	**2 127**	**162 680**
Per Cent Native Forest	*7*	*13*	*8*	*24*	*46*	*1*	

(Source: National Forest Inventory 2003)

Over two-thirds of all categories of eucalypt forests, about 90% of *Melaleuca* forests, over 85% of *Acacia* forests, over 80% of *Callitris* forests, nearly 60% of *Casuarina* forests and more than half of all mangrove occur on private or leasehold land. Nearly 60% of all rainforests are found on land designated as conservation reserve or multiple-use, and under 40% occur on private or leasehold land.

Of Australia's plantation resource, 58% is privately owned, 36% is publicly owned and the remainder is held in joint ownership. Most softwood plantations are publicly owned, but more hardwood plantations are on private land than on publicly owned land; however, there has been an increasing trend in recent years to establish new plantings on private land. In

2004, about 47 000 hectares (or 87%) of new plantations were established on private land with the remainder split evenly between public and joint ownership. New South Wales, Victoria and Western Australia contain the most plantations. Western Australia, Tasmania and Victoria contain the most extensive hardwood plantations whilst New South Wales, Victoria, Queensland and South Australia contain the most extensive softwood plantations (National Plantation Inventory, 2005).

Management of Australia's forests

State Multiple-Use Forests

During the 1990s, most State and Territory forest agencies with responsibility for forest management changed their mode of organisation based on the need for greater transparency and accountability for revenue-generating operations. The major result was the corporatisation, as business units, of those functions of the forest agencies that focus primarily on timber production and sales. The degree of corporatisation varies between agencies, with a number moving away from single focus forestry agencies to large integrated departments assuming overall responsibility for natural resource management.

Agencies with responsibility for the management of multiple-use forests, such as State forest and timber reserves, provide a number of community services associated with public safety or health and community use of forests (sometimes funded by other agencies).

As a means of conveying the planning and operational activities of a forest agency, the forest management plan states the objectives of management that will be pursued in a given forest over a specified time period. In New South Wales, mandatory environmental assessments provide inputs to specified forestry activities including harvest planning and roading. Harvest plans are publicly available. Most other States have processes that allow public involvement in the development of forest management plans.

Conservation Reserves

Conservation reserves, such as national parks, nature reserves and State and Territory recreation and conservations areas, are generally managed for the conservation of landscape values, biological diversity, wilderness values (where recognised) and provisions for appropriate recreation uses and protection of Indigenous values. These areas are generally subject to less human-induced disturbance than are multiple-use forests, although they remain prone to a number of impacts and disturbances.

Other Crown Land

Other Crown land is reserved for a variety of purposes with the management of forest on other Crown land varying with the legal occupant, which may include the defence forces, an Indigenous group, mining company, scientific research or educational institution, or a gas, electricity or water utility. Some Crown land is unallocated or termed vacant Crown land. Other Crown land is generally not directly managed for wood production, although any forest remains a Crown asset.

Freehold Land

Management of native forests on private land is the responsibility of the owner, subject to Commonwealth, State or Territory, and local government regulations. For example, some States restrict the clearing of forest on private land or require planning approval for forest management operations.

The management arrangements that apply to private forests are complex because of the diversity of objectives and ownership arrangements and regulatory regimes. Land may be owned or leased privately. The management's responsibility for trees on such land may be

linked to the land on which the trees grow, or it may be separate from it. These arrangements also differ between States and Territories.

Private owners may manage their own forests or may make arrangements such as share-farming, whereby other private individuals, companies or public agencies take on some or all management responsibilities for the forests. Private owners may also enter into voluntary covenants or register part of their land for the protection of conservation values. In Tasmania, landholders can register some or all of their holding as a Private Timber Reserve, which secures a right to manage the land for timber production into the future and is an important tool for giving surety of the opportunity to benefit from plantation and native forest investment decisions.

Management of private plantations also has a diversity of arrangements. Large private companies and a range of farm forest growers tend to be independent in their forest management, whereas many growers with medium to small holdings utilise a variety of arrangements such as regional committees, private consultants, or through joint venture mechanisms with large private companies or public agencies.

Some States have legislation that ensures formal links between the management of private forests for timber and the forest codes of practice in force in those States as, for example, in Tasmania and Victoria.

Broadly speaking, there are two kinds of private native forests: those in regions in which intensive timber harvesting is a major land use, making long-term management for timber production an economically viable option, and those in the in the drier zones, where forests have little economic value for timber production.

Leasehold Land

In most forests on leasehold land, maintenance of the forest cover is not a prime objective of the lessees' management. Nor, usually, is commercial timber extraction, although this does take place in some leasehold forests such as the Eucalypt and *Callitris* forests of Queensland and New South Wales.

Forests on leasehold lands are affected by management decisions taken in the context of the main land uses, which are predominantly sheep and cattle grazing. Such grazing is normally practised as part of a package of activities including—

- introduction and husbanding of domestic livestock;
- selective harvesting of timber and some other non-timber products;
- manipulation of tree stocking to enhance pasture production;
- introduction of exotic pasture species; and
- manipulation of fire regimes to enhance production of food for domestic stock.

Australia's Regulatory Framework for forest management

The level of management in Australia's native forests varies across Australia according to classification of tenure. In forests used for wood production, the choice of silvicultural system for sustainably harvesting and regenerating the forest depends on a wide range of factors. These include the specific objectives of management, the silvicultural characteristics of the main overstorey species, the reproductive biology of the understorey species, the structure of the forest, and occupational, health and safety considerations of harvesting. A silvicultural system can be simply defined as a set of treatments (felling, burning, thinning, etc.) to achieve specified management objectives.

Silvicultural practices in Australia have been developed on an ecological basis over decades. These practices have been supported by silvicultural and ecological research and field observations that recognise the influences of environmental factors on the distribution and growth of species, and ways in which biological processes influence the stability and

productivity of the forest ecosystem. Many Australian forest species have evolved adaptive mechanisms to enhance their survival and growth on soils that are nutrient-deficient and in an environment characterised by regular disturbance and stress due to periodic drought and repeated occurrences of fire. As a result, silvicultural methods based on the ecological requirements of the commercial species have been developed to successfully regenerate these species and promote healthy and viable forest growth.

Under Australian conditions, this largely relates to the degree to which harvesting exposes the forest floor to sunlight. At one extreme, clear-felling may involve the removal of the entire stand of trees in discrete patches of limited size (on average from 5 hectares to 40 hectares) resulting in an even-aged forest at the coupe level; at the other, single trees may be removed at dispersed locations throughout the forest, promoting an uneven-aged forest. In undertaking any forest harvesting operation, social, economic and environmental factors are taken into account in the forest planning and management process. These are addressed in forest management plans and codes of forest practice and associated management prescriptions. Forest management plans and codes of forest practice are a fundamental requirement of forest management in Australia on public lands and are required under State legislation. Forest management plans are based on extensive environmental and resource surveys and inventories, and provide for the balanced use and care of forests within an integrated regional planning framework in order to meet a wide range of conservation and resource use requirements.

Codes of forest practice set out principles (often with standards) that specify minimum acceptable practices and goals in harvesting and associated forest management operations. With the exceptions of the Northern Territory, which has no multiple-use forests and South Australia which has no multiple-use native forests, all relevant agencies have codes of forest practice that govern activities related to the management and use of multiple-use forests. The codes are reviewed periodically and revised to reflect the results of monitoring and to respond to developments in knowledge and technology.

In Tasmania, the code of practice and the *Forest Practices Act 1985* cover private commercial forests in addition to public forests. Victoria's code also covers commercial forestry on private land. In New South Wales, a Code of Practice for plantation establishment and management operates across tenures while harvesting of private native forest is guided by the Native Vegetation Conservation Act 1997. The Interim Best Operating Standards for Harvesting of Private Native Forestry is the determination of consent under the Act while the regulatory framework for private native forestry is reviewed. In other States, private forest management is not required to adhere to codes of forest practice. In some States, some aspects of forest management are addressed in separate documents, such as the code of practice for fire management on public land in Victoria. In addition, operational guidelines and specific prescriptions for silvicultural operations are often documented separately. The responsibility of ensuring that the codes of practice are adhered to lies with the management agency. In Queensland, separate codes of practice are being developed for the major forest management and use activities.

National, State and Local levels of Government

Under the Australian federal system of Government, there are three levels of Government—Commonwealth, State or Territory, and local, which have specific interests in and responsibilities for forest management. Responsibility for forest management and land allocation rests predominantly with the States and Territories.

While the Commonwealth Government does not have a direct role in forest management, it has an interest in achieving the efficient and effective management of the nation's resources, including a national approach to forests and woodlands. The Commonwealth influences forest use and management through legislative powers associated with foreign affairs (particularly treaties and international agreements), export licensing, taxation and regional issues that transcend State and Territory boundaries. As well, the Commonwealth

has a responsibility for coordinating a national approach to environmental and industry-development matters. It is also responsible for ensuring that Australia's international obligations are met and that provisions of Commonwealth legislation are satisfied.

State and Territory Governments have primary responsibility for forest management, in recognition of their constitutional responsibility for land-use decisions and their ownership of large areas of forest. The States and the Territories have enacted legislation that allocates forest land tenures and specifies the administrative and operational framework and policies within which public and private forests are managed.

Local governments have responsibilities for local land-use planning and rating systems within a regional context, which affect public and private forest management, including leasehold lands.

In addition to the three levels of government, private owners have responsibility for management of private forests.

These institutional arrangements have provided challenges for all parties, be it Government or private, in developing a national approach to sustainable forest management.

Ecologically Sustainable Development

Australian governments have sought solutions to the sustainable management and use of forests for wood and non-wood purposes, particularly over the last decade. A number of strategic forest initiatives have been established by Governments, including the following:

- Forest and Timber Inquiry into the options for the use of Australia's forest and timber resources (Resource Assessment Commission 1992) which undertook a scientific and technical review to assist the development of policy options for Australia's forest and timber resources.
- Report on the sustainable use and management of Australia's forests (Ecologically Sustainable Development Working Group 1991). The Council of Australian Governments subsequently endorsed the National Strategy for Ecologically Sustainable Development (1992) setting the scene for broad changes in policy direction and approach for Australia's future ecologically sustainable development. The Strategy also provided the policy setting for Australia to implement its commitments made to the United Nations Conference on Environment and Development (UNCED) in 1992.
- Analysis of the prospects for commercial wood production on cleared agricultural lands, with an emphasis towards the development of hardwood plantations (National Plantation Advisory Committee 1992).
- The National Forest Policy Statement (1992), which provided the framework for undertaking ecologically sustainable development of forests based on the principles of maintaining ecological processes, maintaining biological diversity, and optimising the benefits to the community from all uses of forests within ecological constraints.
- An inquiry into Adding Further Value to Australia's Forest Products. This inquiry reported on the factors determining the performance and development of Australia's forest-product industry and identified increasing opportunities for Australia to expand forest product markets (Industry Commission 1993).

Legislation, statements, policies and strategies for ecologically sustainable development and forest management can be found in Appendix B.

National Forest Policy Statement

In 1992, the Commonwealth, State and Territory governments entered into an Intergovernmental Agreement to coordinate approaches to land use programs and co-operative arrangements to achieve sustainable land use and conserve and improve Australia's biota, soil and water resources, which are basic to the maintenance of essential

ecological processes and the production of food, fibre and shelter. Governments also agreed to a coordinated approach to broad forest policy implementation when they signed the National Forest Policy Statement in 1992 (Tasmania signed in 1995).

The signatories agreed to eleven broad national goals relating to conservation; wood production and industry development; integrated and coordinated decision-making and management; private native forests; plantations; water supply and catchment management; tourism and other economic and social opportunities; employment, workforce education and training; public awareness, education and involvement; research and development; and international responsibilities.

Regional Forest Agreements

The National Forest Policy Statement made provision for a joint forest planning exercise, known as a Comprehensive Regional Assessment (CRA) to be carried out across parts of the forest estate. The Commonwealth and each of the participating State Governments, in consultation with stakeholders and using results of the CRA, negotiated an agreement (called a Regional Forest Agreement, or RFA) that set out how the forests of the region under assessment are to be managed and used over a period of up to 20 years. The agreements in each State are implemented through the State planning and policy mechanisms provided for in their legislation. The progress of each agreement is to be reviewed at least every five years. RFAs do not cover the entire forest estate of each State, as their scope is limited to regions where commercial forestry activities are undertaken.

RFAs addressed a number of key requirements for achieving ecologically sustainable development and management of Australia's forests in those areas utilised for wood production; particularly, the establishment of a world class system of conservation reserves; provision of a secure resource base for the timber industry with increased opportunities for industry development and investment; and the establishment of management systems and processes for ecologically sustainable forest management. Ten agreements have been signed representing twenty-year plans for eleven RFA regions in the Australian States of New South Wales, Victoria, Western Australia and Tasmania.

Regional Forest Agreements undertook 'whole of forest' strategic planning for forests on all land tenures and their values for conservation and industry development within the concept of the ecosystem approach. They cover a total area of 39.2 million hectares and resulted in an increase of 2.9 million hectares (39%) in Australia's conservation reserve system, which now covers an area of 10.41 million hectares in the RFA regions. Within these RFA regions, 44% of land with native forest ecosystems is now in dedicated conservation reserves, with the remaining 24% on other public land, and 32% on private land. Also, within these RFA regions, 68% or 3.4 million hectares of old growth forest is conserved in dedicated reserves (Commonwealth of Australia pers. com. 2002).

Biodiversity assessments associated with comprehensive regional assessments added significant new information through mapping of regional ecosystems, and surveys and analysis of flora and fauna and threatening processes adding to the knowledge base required for ecologically sustainable forest management. The Regional Forest Agreement process also highlighted the importance of forests on private lands to conservation and industry development. In providing secure access to wood resources, Regional Forest Agreements have facilitated a positive environment for industry development, including value-adding and downstream processing.

Regional Forest Agreements include a requirement for the development and implementation of environmental management systems compatible with the relevant international standard (AS/NZS ISO 14001:2004) by forest and conservation management agencies on public lands. Significant improvements to the planning, management, monitoring and reporting of sustainability of forest management should result from Regional Forest Agreements over a twenty-year period. Progress towards agreed milestones will be reported annually with 5 yearly reviews of the 10 agreements.

The improvements to sustainable forest management that apply to wood-producing RFA regions will substantially assist forest managers in meeting the requirements of the AFS, as many of these have been addressed in the agreements.

Criteria and indicators of sustainable forest management

Australia, as a member of the Montreal Process (1995), is committed to implementing criteria and indicators for the sustainable management of forests on all tenures. The criteria and indicators are tools for assessing trends in forest conditions and management and provide a common framework for describing, monitoring and evaluating progress towards sustainability. The Montreal Process member countries cover five continents and together represent over 90% of the world's temperate and boreal forests and about 60% of the world's forests. They also account for 45% of the world trade in wood and wood products and 35% of the world's population.

Prior to their re-structuring into the Primary Industries Ministerial Council (PIMC) and the Natural Resources Management Ministerial Council (NRMMC), both the Ministerial Council on Forestry, Fisheries and Aquaculture (MCFFA) and the Australian and New Zealand Environment and Conservation Council (ANZECC) agreed to use a framework of regional (sub-national) level criteria and indicators (Montreal Process Implementation Group for Australia 1998) based on Montreal Process Criteria and Indicators for monitoring and reporting the performance of sustainable forest management in Australia, irrespective of tenure.

The framework of regional level criteria and indicators were based on the internationally agreed Montreal Process indicators but were adapted with stakeholder input to reflect Australia's conditions.

Consultation and participation

Under Regional Forest Agreements, public consultation strategies were put in place taking account of statutory requirements under Commonwealth and State impacts and planning legislation. Consultation strategies varied from one Regional Forest Agreement to another, depending on the interests of the Commonwealth or the State involved. This included circulation of draft documents, meetings with particular organisations, representation of organisations on special consultative committees, and the establishment of groups to participate in regional assessments and the development of options for consideration when finalising agreements. Stakeholder consultation was sought during all major stages of the process, including during the development of initial scoping agreements, preparation of draft assessment reports, identification of possible forest use and management scenarios for the region, and after Regional Forest Agreements had been drafted. Whilst the level of satisfaction of stakeholders with the consultation process varied, stakeholder consultation and participatory processes in forest management were identified as important requirement for further development in achieving well-managed forests. Thus in areas subject to Regional Forest Agreements, a different level of consultation may be appropriate than in areas not subject to Regional Forest Agreement.

Public consultation and participation is an integral part of developing legislation, policies and plans for the management of Australia's publicly owned forests. In all States, there are formal public consultation and participation processes to ensure that the interests and opinions of the community are considered in the forest management planning process. These range from—

- provision of public access to information on resources, impacts, uses and values;
- publication of information in brochures and the public press;
- invitations to the public to provide comment and written submissions on forest management plans for public land;

- preparation of discussion papers;
- public meetings;
- maintenance of registers of interest to keep interested parties up-to-date with progress on planning;
- public participation in reviews; and
- an appeals process concerning level of assessment (Western Australia).

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Standards Australia (1995) Standardization Guide No 4 – Committee Leadership – The roles of the Chairperson and Project Manager. Published jointly by Standards Australia, Sydney, NSW, and Standards New Zealand, Wellington, New Zealand

Standards Australia (1996) Standardization Guide No 11 – The Structure of Committees. Published jointly by Standards Australia, Sydney, NSW, and Standards New Zealand, Wellington, New Zealand

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Personal Conversation

Forest Industries Branch, Department of Agriculture, Fisheries and Forestry – Australia 2002, Commonwealth of Australia, Conversation with staff, 28 June

APPENDIX B

Regulatory and policy framework for forest management within Australia

(Informative)

International commitments

The following are international statements and initiatives which Australia, in its international participatory role, is a party to or which have a bearing on forest issues at the national policy level.

Agenda 21 and the Statement of Forest Principles

In 1992, more than 100 heads of state met in Rio de Janeiro, Brazil for the United Nations Conference on Environment and Development (UNCED) also known as the Earth Summit. The Conference was convened to address urgent problems of environmental protection and socio-economic development. The assembled leaders signed the Framework Convention on Climate Change and the Convention on Biological Diversity; endorsed the Rio Declaration and the Forest Principles; and adopted Agenda 21, a 300-page plan for achieving sustainable development in the 21st century.

Agenda 21 is a comprehensive plan of action to be taken globally, regionally and nationally by organisations of the United Nations system, Governments, and major groups in every area in which humans impact on the environment. It identifies a wide range of economic, social and environmental factors that affect sustainable development. Chapter 11 of Agenda 21 deals specifically with forestry issues.

The Statement of Forest Principles is a non-legally binding statement, which reflects a first global consensus on forests. The principles are intended to apply to all types of forests, both natural and planted, in all geographical regions and climatic zones and cover the entire range of environmental and development issues and opportunities including the right to sustainable socio-economic development of forests, the promotion of non-wood values of the forests and the rights of indigenous peoples and their involvement, along with other groups, in dealing with forest issues.

Internet Addresses:
http://www.un.org/esa/sustdev/csd.htm
http://www.un.org/documents/ga/conf151/aconf15126-3annex3.htm - Non-Legally Binding Authoritative Statement of Principles for A Global Consensus On The Management, Conservation And Sustainable Development Of All Types Of Forests

http://www.un.org/esa/sustdev/agenda21text.htm – Agenda 21 – Global Programme of Action on Sustainable Development

http://www.deh.gov.au/esd/index.html

Commission on Sustainable Development

The Commission on Sustainable Development (CSD) was created in December 1992 to ensure effective follow-up of UNCED; to monitor and report on implementation of the Earth Summit agreements at the local, national, regional and international levels. The CSD is a functional commission of the UN Economic and Social Council (ECOSOC), with 53

members. A five-year review of Earth Summit's progress was undertaken in 1997 by the United Nations General Assembly meeting in special session.

Earth Summit + 5: The Special Session of the General Assembly held in June 1997 adopted a comprehensive document entitled Programme for the Further Implementation of Agenda 21 prepared by the Commission on Sustainable Development. The World Summit on Sustainable Development in Johannesburg in 2002 represented the 10th anniversary of UNCED and presented an opportunity for heads of state to adopt concrete steps and identify quantifiable targets for better implementing Agenda 21.

Internet Address:
http://www.un.org/esa/sustdev/csd/csd.htm

Convention on Biological Diversity

This 1992 Convention deals at a global level, with conserving, identifying and monitoring of biological diversity, its sustainable use and the fair and equitable sharing of benefits arising from this use. Australia ratified the treaty in 1993. The Convention adopts the ecosystem approach as the primary framework for action to integrate biological diversity conservation from the global to the ecosystem scale.

The objectives of this Convention are the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources, including, by appropriate access to genetic resources and, appropriate transfer of relevant technologies, taking into account all rights over those resources, technologies, and appropriate funding.

This convention sets up a broad framework for international cooperation relating to the conservation and sustainable use of biological diversity. Forest specific action under the convention has involved developing a workplan that largely has a research focus.

Internet Address:
http://www.biodiv.org/welcome.aspx

Intergovernmental Panel on Forests and Intergovernmental Forum on Forests

The United Nations Commission for Sustainable Development (CSD) established the Intergovernmental Panel on Forests (IPF) in April 1995 to continue the intergovernmental forest policy dialogue with a mandate over a two-year period (1995—97). The IPF was set up to pursue and formulate coordinated proposals for action towards the management, conservation and sustainable development of all types of forests and resulted in over one hundred negotiated proposals for action related to sustainable forest management. The Special Session of the UN General Assembly (UNGASS) endorsed the outcome of the IPF in June 1997.

However, in view of the remaining outstanding issues (finance and transfer of technology, trade and environment, and institutions and legal instruments), UNGASS recommended a continuation of the intergovernmental policy dialogue on forests. Subsequently, the ad hoc open-ended Intergovernmental Forum on Forests (IFF) was established under the CSD. The IFF reported to the Commission on Sustainable Development in 2000 and recommended establishment of a non legally binding international arrangement for forests, to be called the 'United Nations Forum on Forests'. The CSD endorsed this recommendation and referred its decision to the Economic and Social Council (ECOSOC). In October 2000, ECOSOC decided that the United Nations Forum on Forests would hold its first substantive session in 2001.

An informal, high level Interagency Task Force on Forests (ITFF) coordinated the inputs of eight international organisations to the IPF.

Internet Address:
http://www.un.org/esa/forests/ipf_iff.html

United Nations Forum on Forests

The main objective of this international arrangement on forests is to promote the management, conservation and sustainable development of all types of forests and to strengthen long-term political commitment to this end. The purpose of such an international arrangement would be to promote the implementation of internationally agreed actions on forests, at the national, regional and global levels, to provide a coherent, transparent and participatory global framework for policy implementation, coordination and development, and to carry out principal functions, based on the Rio Declaration, the Forest Principles, chapter 11 of Agenda 21 and the outcomes of the IPF/IFF process, in a manner consistent with and complementary to existing international legally binding instruments relevant to forests.

Internet Address:
http://www.un.org/esa/forests/index.html

Criteria and indicators

A number of non-UN regional initiatives have been established, particularly since UNCED in 1992, to develop criteria and indicators for sustainable forest management. The criteria define key forest values we wish to maintain whilst indicators provide measures of how well those values are being maintained. Different initiatives cover Europe (the Helsinki Process), tropical forests (under the International Tropical Timber Agreement), the Amazon Basin (the Tarapoto Process) and temperate and boreal forests (the Montreal Process).

The 12 Montreal Process member countries, including Australia, have developed a framework of seven criteria and 67 indicators for use at the national level. The seven criteria include the maintenance of: biological diversity; productive capacity; ecosystem health and vitality; soil and water resources; global carbon cycles; socio-economic benefits; and an effective legal and institutional framework. Australia has agreed that the seven Montreal process criteria address all the forest values that the broader community seeks to maintain. Australian Forestry and Conservation Ministers have also endorsed a regional framework of sub-national (regional) criteria and indicators that have been adapted from nationally agreed criteria for use at a regional level.

Internet Addresses:
http://www.mpci.org/home_e.html
http://www.affa.gov.au/forestry (search within the Sustainable forest management in Australia)

The United Nation's Framework Convention on Climate Change

The objective of the Framework Convention on Climate Change (FCCC) and related legal instruments (e.g., the Kyoto Protocol) is to stabilise greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. The Convention seeks to achieve such a level within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.

The FCCC recognises that all Parties have a common but differentiated responsibility to address climate change. The Convention further recognises that each Party is unique and, therefore, its climate change response strategy must be tailored to suit its particular circumstances. The FCCC is relevant to forestry in that forest biomass and soils are

significant stores of carbon and harvesting and other human disturbances and many natural ecological processes in forests may affect carbon fluxes between forest lands and the atmosphere. Forests may also be markedly affected by future climate change caused by human-induced increases in greenhouse gas concentrations.

Internet Addresses:
http://unfccc.int/2860.php

http://www.greenhouse.gov.au/naturalresources.html

International Context

The following are processes in the international arena that have an impact on the formulation of national forest policy and the future application of the Standard.

WWF/ IUCN forest reservation targets

The World-Wide Fund for Nature and the International Union for the Conservation of Nature through the 'Forests for Life – The WWF/IUCN forest policy book' have developed a joint position regarding forest problems such as deforestation and loss of forest quality, the causes of and implications for forest problems, and appropriate responses to those problems. A forest vision that provides for two key objectives (and associated targets) of these organisations are —

- establishment of a network of ecologically representative protected areas (covering at least 10% of the world's forest area by the year 2000); and
- environmentally appropriate, socially beneficial and economically viable forest management outside protected areas (including independent certification of 25 million hectares by the year 2001).

Internet Address:
http://www.panda.org/about_wwf/what_we_do/forests/our_solutions/partnerships/iucn.cfm

International Organization for Standardization's Environmental Management Standards (ISO 14000)

The International Organization for Standardization (ISO) is a non-governmental organisation established to develop international agreements, which are published as International Standards. ISO 14000 is a series of international, voluntary environmental management standards developed to provide organisations with a common framework for managing environmental issues. The ISO 14001 Standard 'Environmental management systems (EMS)—Requirements with guidance for use' is the standard within the ISO 14000 series that specifies the requirements of an environmental management system. The key elements of an AS/NZS ISO 14001 EMS are the following:

- An environmental policy and the requirements to pursue this policy via objectives, targets, and environmental programs.
- Analysis of the environmental aspects of the organisation (including its processes, products and services as well as the goods and services used by the organisation).
- Implementation and organisation of processes to control and improve operational activities that are critical from an environmental perspective (including both products and services of an organisation).
- Checking and corrective action including the monitoring, measurement, and recording of the characteristics and activities that can have a significant impact on the environment.
- Review of the EMS by the organisation's top management to ensure its continuing suitability, adequacy and effectiveness.

- Continual improvement through a cyclical process of planning, implementation, checking and reviewing.

An ISO working group on forestry, under the technical committee developing the EMS standards, has prepared a technical report (ISO TR 14061 - *Information to assist forestry organizations in the use of Environmental Management System standards ISO 14001 and ISO 14004*) on linking EMSs with forest management performance objectives, including sustainable forest management principles and intergovernmental criteria and indicators.

Internet Address:
http://www.iso.ch/iso/en/iso9000-14000/iso14000/iso14000index.html

Forest Stewardship Council's principles and criteria

The Forest Stewardship Council (FSC) is an international non-profit organisation founded in 1993. The FSC has developed a set of Principles of Forest Stewardship as the basis of an international certification and labelling scheme. The FSC also supports the development of national and local forestry standards that implement their Principles of Forest Stewardship at the local level. The FSC's Principles of Forest Stewardship are the following:

- 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.
- Long-term tenure and use rights to the land and forest resources shall be clearly defined, documented and legally established.
- The legal and customary rights of indigenous peoples to own, use and manage their lands, territories, and resources shall be recognised and respected.
- Forest management operations shall maintain or enhance the long-term social and economic well-being of forest workers and local communities.
- 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.
- 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.
- 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.
- 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.
- 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.
- Plantations shall be planned and managed in accordance with the above Principles. 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.

Internet Address:
http://www.fsc.org/fsc

Programme for the Endorsement of Forest Certification schemes

The Programme for the Endorsement of Forest Certification (PEFC) schemes is voluntary private sector initiative based on a consensus view among relevant interested parties on sustainable forest management at the national or regional level and offers a Pan European framework for the establishment of mutually compatible national certification systems, based on independent third party auditing, and their mutual recognition.

The PEFC aims to strengthen and improve the positive image of forestry and wood as a renewable raw material, contribute to the promotion of economically viable, environmentally appropriate and socially beneficial management of forests, as defined by the Helsinki-criteria established by the Ministerial Conferences on the Protection of Forests in Europe, give assurance to customers, and the general public, that forests certified under the program are managed as defined by the Helsinki-criteria.

PEFC is a global umbrella organisation for the assessment of and mutual recognition of national forest certification schemes developed in a multi-stakeholder process. These national schemes build upon the inter-governmental processes for the promotion of sustainable forest management, a series of on going mechanisms supported by 149 governments in the world covering 85% of the world's forest area.

PEFC provides a framework for the development of and mutual recognition of national or sub-national forest certification schemes that have been developed locally according to internationally recognised requirements for sustainable forest managements.

PEFC provides an assurance mechanism to purchasers of wood and paper products that they are promoting the sustainable management of forests.

PEFC contributes to the environmentally appropriate, socially beneficial and economically viable management of forests for present and future generations.

PEFC aims at strengthening and improving the positive image of forestry and wood as a renewable raw material.

Internet Address:
http://www.pefc.org/

National Context

The international commitments section outlines various processes that have a bearing on forest issues at a national level. The response by Australia has been the formulation of various strategies, statements, agreements, and the like, to address the international commitments. The major ones, in consideration of forests, are set out below.

National Strategy on Ecologically Sustainable Development

The National Strategy on Ecologically Sustainable Development (NSESD) was endorsed and released by the Council of Australian Governments in 1992. It outlines key objectives for the management of Australia's native forests. The Council agreed that future development of relevant programs and policies, particularly those that are national in character, should take place within the framework of the Strategy and the Intergovernmental Agreement on the Environment.

The strategy identifies the following principles:

- Decision making processes should effectively integrate both long and short-term economic, environmental, social and equity considerations.
- Where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.
- The global dimension of environmental impacts of actions and policies should be recognised and considered.
- The need to develop a strong, growing and diversified economy which can enhance the capacity for environmental protection should be recognised.
- The need to maintain and enhance international competitiveness in an environmentally sound manner should be recognised.
- Cost effective and flexible policy instruments should be adopted, such as improved valuation, pricing and incentive mechanisms.
- Decisions and actions should provide for broad community involvement on issues which affect them.

The NSESD is a strategic policy framework for governments to adapt institutional arrangements to ensure ESD principles and objectives are taken into account in policy decisions.

Internet Address:
http://www.environment.gov.au/psg/igu/national.html#strategy OR
http://www.deh.gov.au/esd/national/nsesd/index.html

National Forest Policy Statement

The 1992 National Forest Policy Statement (NFPS) provides agreed objectives and policies for the future of Australia's public and private forests and a framework for achieving balanced returns to the community from the forest estate. The shared vision of ecologically sustainable management of Australia's forests involves the following:

- Retaining the unique character of Australian forests, their integrity and biological diversity.
- Increasing the total area of forest.
- Managing forests for all their values and uses so as to optimise benefits to the community.

- Ecologically sustainable management of private forests that complements the conservation and commercial objectives of public forest management.
- Sustainable forest-based industries, founded on excellence and innovation, expanding to contribute further to economic and employment growth.
- Efficient, environmentally sensitive and sustainable forest use.
- Forest management that is effective and responsive to the community.
- Community understanding of the values of forests and sustainable forest management, and participation in decision-making processes relating to forest use and management.

Australian Governments have actively implemented the NFPS, including through the development and implementation of the National Forest Reserve Criteria, National Principles for Related to Wood Production in Plantations and the Regional Forest Agreement (RFA) process.

The NFPS contains, as an attachment, the Australian Forestry Council's 1991 Forest Practices Related to Wood Production in Native Forests: National Principles. The Native Forest Principles provide a consistent and scientific basis for management to which all States are committed. The Native Forest Principles cover—

- authorisation;
- safety;
- principles of environmental care;
- implementation; and
- monitoring and review.

Internet Address:
http://www.affa.gov.au/content/publications.cfm?objectid=cda4caf9-d118-4e13-aac472ac7603ebe5

Wood and Paper Industry Strategy

The Wood and Paper Industry Strategy (WAPIS) enhanced the development of an ecologically sustainable, value-adding forest industry sector. Its aim was to promote the development of the wood and paper industry by expanding the plantation resource base, by accelerating research and development of value-added products and fast grown plantation trees, by increasing international competitiveness and by the development of an internationally recognised certification scheme for sustainably produced forest products.

Its initiatives included—

- expanding the plantation/farm forestry program by providing funding for a range of regional and strategic projects;
- research and development funding to improve value-added processing including new products for woodchip and sawmill residues and utilisation of fast grown regrowth and plantation timber;
- data collection initiatives to provide data and analysis of market conditions and the regional economic analysis of plantation development; and
- developing criteria and indicators of ecological sustainability on which to demonstrate Australia's ecologically sustainable forest management.

Implementation of WAPIS included coordination, liaison and negotiation with the States, local government, forest/timber industries and project proponents.

Forest Practices Related to Wood Production in Plantations: National Principles

The National Plantation Principles were developed by the Standing Committee of Forestry (SCF) as a result of an undertaking in the NFPS to produce a companion volume to the Australian Forestry Council's 1991 Forest Practices Related to Wood Production in Native Forests: National Principles. The National Plantation Principles, which were endorsed by the MCFFA in 1995, establish a framework for a consistent and scientific approach to the sustainable management of both public and private plantations and a sound basis for the development or evaluation of Codes of Practice.

The National Plantation Principles cover—

- principles of environmental care;
- safety; planning;
- access;
- establishment and maintenance;
- timber harvesting;
- forest protection; and
- monitoring and review.

Internet Address:
http://www.affa.gov.au/content/publications.cfm?objectid=24b09632-f7bc-4082-9e77d52084babd15

Intergovernmental Agreement on the Environment

The 1992 Intergovernmental Agreement on the Environment (IGAE) was endorsed by the Council of Australian Governments and provides a framework for cooperation between the Commonwealth and the States on environment, resource and conservation management. It facilitates a cooperative national approach to the environment, defines roles of respective Governments and provides greater certainty of Government and business decision-making. It encourages better environmental protection and reduces duplication of functions between different levels of Governments.

The IGAE principles include the following:

- A recognition of the role of both Commonwealth and State Governments in relation to the environment.
- The concept of ecological sustainable development provides potential for the integration of environmental and economic considerations in decision making and for balancing the interests of current and future generations.
- It is vital to develop and continue land use programs and cooperative arrangements to achieve sustainable land use and to conserve and improve Australia's biota, and soil and water resources which are basic to the maintenance of essential ecological processes and the production of food, fibre and shelter.

Internet Address:
http://www.deh.gov.au/esd/national/igae/index.html

National Strategy for the Conservation of Australia's Biological Diversity

The National Strategy for the Conservation of Australia's Biological Diversity was prepared by the Australia New Zealand Environment and Conservation Council (ANZECC) and endorsed by Australian Governments in 1996. The purpose of the strategy is to implement Australia's obligations under the Convention on Biological Diversity. The

fundamental basis of the strategy is the incorporation of biodiversity conservation in all relevant decision-making and management processes.

The following principles have been adopted to guide the strategy's implementation:

- Biological diversity is best conserved in situ.
- Although all levels of government have clear responsibility, the cooperation of conservation groups, resource users, indigenous peoples, and the community in general is critical to the conservation of biological diversity.
- It is vital to anticipate, prevent and attack at source the causes of significant reduction or loss of biological diversity.
- Processes for and decisions about the allocation and use of Australia's resources should be efficient, equitable and transparent.
- Lack of full knowledge should not be an excuse for postponing action to conserve biological diversity.
- The conservation of Australia's biological diversity is affected by international activities and requires actions extending beyond Australia's national jurisdiction.
- Australians operating beyond our national jurisdiction should respect the principles of conservation and ecologically sustainable use of biological diversity and act in accordance with any relevant national or international laws.
- Central to the conservation of Australia's biological diversity is the establishment of a comprehensive, representative and adequate system of ecologically viable protected areas integrated with the sympathetic management of all other areas, including agricultural and other resource production systems.
- The close, traditional association of Australia's indigenous peoples with Australia's biological diversity should be recognised, as should the desirability of sharing equitably benefits arising from the innovative use of traditional knowledge of biological diversity.

Internet Address:
http://www.deh.gov.au/biodiversity/publications/strategy/index.html

Nationally Agreed Criteria for the Establishment of a Comprehensive, Adequate and Representative Reserve System for Forests in Australia

The National Forest Reserve Criteria were developed by the Joint ANZECC/MCFFA NFPS Implementation Sub-committee (JANIS) and were endorsed by MCFFA and ANZECC in late 1996-early 1997. The JANIS criteria provide an objective basis for evaluating and subsequently ensuring conservation of biological diversity and other values within a national reserve system. They establish a framework for the establishment of the forest reserve system based on the three principles of comprehensiveness, adequacy and representativeness and on the protection of old-growth forest and wilderness. The JANIS criteria are intended to guide the development of comprehensive, adequate and representative (CAR) reserves systems in the RFA regions.

The following criteria are to be applied flexibly to define the CAR reserves in regions where RFAs are being considered:

- 15% of the pre-1750 distribution of each forest or ecosystem type with considerations applied according to regional circumstances.
- 60% of the existing old-growth forest in recognised vulnerable forest type, more if rare or depleted.
- 90%, or more, of high quality wilderness forests.

- remaining occurrences of rare and endangered forest ecosystems including rare old-growth.
- for representativeness, sample the full range of biological variation within each forest type.

Internet Address:
http://www.affa.gov.au/content/output.cfm?ObjectID=D2C48F86-BA-11A1-A2200060B0A03289

Regional framework of criteria and indicators

The Ministerial Council on Forestry, Fisheries and Aquaculture (MCFFA) endorsed the use of the internationally agreed Montreal Process criteria and indicators as the basis for assessing sustainable forest management at the national level. The Montreal Process indicators have also provided the basis for the development of a regional (sub-national) framework of indicators to be used at the regional level. The Commonwealth-State Montreal Process Implementation Group for Australia (MIG) undertook this task in consultation with stakeholders.

The framework, which has been endorsed by MCFFA and ANZECC, provides a starting point in the assessment of sustainable forest management at the regional level. It also provides for a phased implementation strategy that recognises the need for further work to develop and implement cost-effective or practical approaches for some indicators.

Internet Address:
http://www.affa.gov.au/content/publications.cfm?ObjectID=D4696EF3-97-4D27-A00D0D586164433A

State and Territory Legal and Institutional Frameworks

State and Territory Governments and the Commonwealth Government are involved in forest policy, planning, management and regulation, at different levels and in different contextual frameworks.

The coordination of sustainable forest management policy at a national level is carried out under the auspices of the Forestry and Forest Products Committee (FFPC) of the Primary Industries Standing Committee, which reports to the Primary Industries Ministerial Council. In the Australian context, the membership of the FFPC comprises representatives of the Australian Government Department of Agriculture, Fisheries and Forestry, the Commonwealth's forest policy agency, the Commonwealth Scientific and Industrial Research Organisation's (CSIRO)—Forestry and Forest Products Division and the heads of State and Territory forest management regulation and operational agencies throughout Australia.

The Commonwealth's responsibilities in forest management relate mainly to an institutional framework (legislation, international forums on forestry, national policies, funding initiatives, education) and range from the implementation of international treaties, to cultural heritage, to its export controls for forest products and the application of taxation laws.

State and Territory legislation defines the allocation of forested land tenures and specifies the administrative framework and policy structure within which the public and private forests are managed. A range of different authorities undertakes the administration of public forested land. These include national parks and wildlife services, forest management agencies, water boards and land and natural resource management agencies. These and other agencies are responsible for legislation and land-use planning, environment impact assessment and regulation, threatened species conservation, heritage protection and pollution control in forest management.

In relation to forest management for wood production, the administrative agencies, the main instruments of legislation and the purpose of such legislation, are set out in Tables A to I for all Australian Governments/States and Territories. The tables are structured to reflect all land tenures though some legislation may only be applicable to public or private lands. The main emphasis of the State and Territory tables is the scope of legislation impacting on forest management in Australia. If access to the full text of the legislation is required, the relevant State or Territory Internet site is provided beneath each State or Territory table. The consolidated State and Commonwealth Government legislative Internet site of http://www.austlii.edu.au/databases.html#sa could also be used as a reference site.

The States and Territories approach to forest management administrative structures varies, with some states, such as NSW and Tasmania, emphasising the independence of their forest management agencies and conservation agencies while others, such as Victoria and Western Australia, combine forest management administration with broader land and resource management responsibilities. Some States, such as Queensland and Western Australia, are also pursuing the separation of functional aspects of forest management between the custodial and operational levels. Other States have provided a greater degree of operating autonomy for the forest management agencies, e.g., South Australia and Western Australia.

Most States are taking an increasing interest in facilitating private forest management either as a commercial venture or as farm forestry through separate agencies, e.g., Private Forests Tasmania and Private Forestry Unit in DPI, Victoria which provide advice, assistance, education, to private land-holders, resource managers and companies.

TABLE A

Main legislation relevant to Commonwealth forest management activities and responsibilities

Agency	Main Legislation	Purpose
Department of Agriculture, Fisheries and Forestry	*Export Control Act 1982*	To control the export of various regulated products, including unprocessed wood and woodchips.
Department of Agriculture, Fisheries and Forestry	*Forestry and Timber Bureau Act 1930*	To provide for certain administrative, research and education functions at the Commonwealth level that have been transferred to AFFA, the CSIRO and the Department of Forestry at the ANU respectively.
Department of Agriculture, Fisheries and Forestry	*Quarantine Act 1908*	The Act with its subordinate regulations and proclamations provides the comprehensive system of control to prevent the introduction into Australia of diseases or pests affecting human beings, animals or plants.
Department of Environment and Water Resources	*Aboriginal and Torres Strait Islander Heritage Protection Act 1984*	To preserve and protect places, areas (including Australian waters) and objects of particular significance to Aboriginal people. The Act operates alongside State legislation except where the State legislation is inconsistent with the Commonwealth Act.
Department of Immigration and Multicultural and Indigenous Affairs	*Native Title Act 1993 (Amended 1998)* *Aboriginal Land Rights (Northern Territory) Act 1976*	To provide a mechanism, for claimants and non-claimants, to determine whether native title exists and what the rights are that comprise that native title. A determination under the Act will establish whether the holders have exclusive possession and, if not, the native title rights and interests that are of importance.
Department of Environment and Water Resources	*Environment Protection and Biodiversity Conservation Act 1999* *Environment Protection and Biodiversity Conservation Amendment (Wildlife Protection) Act 2001*	The EPBC Act is the Commonwealth's national environmental law covering threatened species and ecological communities, National Heritage places, World Heritage, Ramsar wetlands, protected areas, and wildlife. The EPBC Act promotes the conservation of biodiversity by providing strong protection for— • listed species and communities in Commonwealth areas (this includes listed threatened species and ecological communities, listed migratory species and listed marine species); • cetaceans (all whales, dolphins and porpoises) in Commonwealth waters and outside Australian waters; • protected species in the Territories of Christmas Island, Cocos (Keeling) Islands and Coral Sea Islands;

		• protected areas (World Heritage properties; Ramsar wetlands; Biosphere reserves; Commonwealth reserves; and conservation zones); and • wildlife species and wildlife products subject to international trade. The EPBC Act also provides for the protection and conservation of heritage values through listing of National and Commonwealth heritage places.
Department of Agriculture, Fisheries and Forestry	*Regional Forest Agreements Act 2002*	The Act's main provisions are: • RFA forestry operations are excluded from Commonwealth legislation relating to export controls, the environment (with limited exceptions); • the Commonwealth is bound to the termination and compensation provisions of RFAs; • information about RFAs is published; • RFAs and related reports and reviews are tabled in the Commonwealth Parliament; • there is a comprehensive and publicly available information sources in relation to Australia's forests; and • the Forest and Wood Products Council continues as an industry consultation forum, to be reviewed in 2004.

For access to any of the legislation above, the following Internet address should be used: http://www.austlii.edu.au/au/legis/cth/consol_act/

TABLE B

Main Legislation Relevant to the Management of Victoria's Timber Harvesting Activities

Agency	Main Legislation	Purpose
Department of Sustainability and Environment	*Conservation, Forests and Lands Act, 1987*	To provide a framework for a land management system and to make necessary administrative, financial and enforcement provisions, including Codes of Practice for Timber Production and Fire Management.
Department of Sustainability and Environment	*Forests Act, 1958* *Key Subordinate Legislation under the Forests Act.* *Forests (Timber Harvesting) Regulations 2000* *Forests (Miscellaneous) Regulations 2000*	To consolidate the law for the management and protection of State forests, including timber harvesting and fire management. To regulate the environmental aspects of timber harvesting by providing for licensing of forest operators. To make provision for certain matters concerning forests and forest produce, including branding and sawmill returns.
Department of Sustainability and Environment	*Forests (Wood Pulp Agreement) Act 1996*	To ratify an Agreement between the Minister administering the Forests Act 1958 and AMCOR Limited with respect to the supply of pulpwood for the manufacture of wood pulp and for other purposes.
Department of Sustainability and Environment	*Sustainable Forests (Timber) Act 2004*	To provide the framework for sustainable forest management, the allocation of timber resources to VicForests and the management of timber harvesting operations.
Department of Sustainability and Environment	*Safety on Public Land Act 2004*	To provide for public safety in State forests by providing for the establishment and enforcement of public safety zones for a variety of purposes, including timber-harvesting operations.
Department of Sustainability and Environment	*Flora and Fauna Guarantee Act, 1988*	To establish a legal and administrative structure to enable and promote the conservation of Victoria's native flora and fauna, and to provide for a choice of procedures that can be used for the conservation, management or control of flora and fauna and the management of potentially threatening processes.
Department of Sustainability and Environment	*Catchment and Land Protection Act, 1994*	To set up a framework for the integrated management and protection of catchments, to encourage community participation in the management of land and water resources and to set up a system of controls on noxious weeds and pest animals.
Department of Sustainability and Environment	*Land Act, 1958*	To consolidate the Law relating to the sale and occupation of Crown Lands, including provision for a range of licences in State Forest.

Department Sustainability and Environment	*National Parks Act 1975*	To provide a framework for the establishment and management of national parks and to make provision for certain other parks, including harvesting in selected parks.
Environment Protection Authority	*Environment Protection Act 1970*	To establish the Environment Protection Authority and to provide for the protection of the environment.
Department of Sustainability and Environment	*Victorian Environmental Assessment Council Act 2001*	To establish the Victorian Environmental Assessment Council to conduct investigations and make recommendations relating to the protection and ecologically sustainable management of the environment and natural resources of public land.
Department of Sustainability and Environment	*Commissioner for Environmental Sustainability Act 2003*	To provide for the appointment, objectives, functions and powers of the Commissioner for Environmental Sustainability. This includes preparation of the Report of the State of the Environment of Victoria.
Department of Sustainability and Environment	*Heritage Rivers Act 1992*	To make provision for Victorian heritage rivers by providing for the protection of public land in particular parts of rivers and river catchment areas in Victoria, which have significant nature conservation, recreation, scenic or cultural heritage attributes.
Department of Sustainability and Environment	*Crown Land (Reserves) Act 1978*	To provide for the Reservation of Crown Lands for certain purposes and for the Management of such Reserved Lands.
Department of Sustainability and Environment	*Reference Areas Act 1978*	Provides for the protection, control and management of certain Special Areas of Crown Land to be preserved in their natural state, as far as is possible, due to their ecological interest and significance.
Department of Sustainability and Environment	*Planning and Environment Act 1987*	To establish a framework for planning the use, development and protection of land in Victoria in the present and long-term interests of all Victorians Provides for the protection of natural processes and genetic diversity, and to conserve places of scientific, aesthetic or special conservation value. Requires administration and enforcement of planning schemes, which specify appropriate controls on the use, development and protection of land, including timber production on private land.
Country Fire Authority	*Country Fire Authority Act 1958*	Confers on the Authority a responsibility to prevent and suppress fire on all land (urban and rural) outside the Melbourne Metropolitan Fire District, but does not include any forest, national park or protected public land.

Department of Primary Industries	*Forestry Rights Act 1996*	Separates ownership of the land from ownership of the trees on the land and provides legal security to the 'Forest Property Owner', and recognises carbon sequestration rights, and enables ownership of these rights separately from the trees and the land.
Department of Sustainability and Environment	*Extractive Industries Development Act 1995*	Provides for an assessment and approvals process for extractive industries; ensures that operations are carried out safely and rehabilitation of quarried land is undertaken; provides for the payment of royalties for stone extracted from Crown land.
Victorian WorkCover Authority	*Occupational Health and Safety Act 2004*	To ensure health, safety and welfare of employees and other persons at work; to eliminate risks to the health and, safety; to ensure public is not placed at risk by the conduct of those working.
VicRoads (Department of Sustainability and Environment (on State forest and Crown land))	*Road Management Act 2004*	Establishes a framework for management of the road network. Outlines role, function & powers of a road authority; requires road management plans to be prepared; provides for declaration and discontinuance of roads; requires a register of public roads to be kept by the responsible road authority; provides for the construction, inspection, maintenance and repair of public roads; provides for issues relating to civil liability arising out of road management.

For access to any of the legislation above, the following Internet address should be used:
http://www.dms.dpc.vic.gov.au/ OR http://austlii.edu.au/au/legis/vic/consol_act/

TABLE C

Main Legislation Relevant for the Assessment & Approval of Forestry in NSW

Agency	Main Legislation	Purpose
NSW Department of Primary Industries - Forests NSW	*Forestry Act, 1916.*	Provides for an adequate supply of timber and protection of environmental values.
NSW Department of Primary Industries - Forests NSW	*Timber Marketing Act, 1977.*	Enacts procedures to ensure appropriate quality in the grading and sale of timber.
NSW Department of Environment and Conservation - Environment Protection Authority	*Protection of the Environment Operations Act, 1997* *Contaminated Lands Management Act, 1997*	Provides for the protection of water quality from harvesting through the application of an Environmental Protection Licence and reporting on contaminated sites.
NSW Department of Environment and Conservation - Environment Protection Authority	*Pesticides Act, 1999*	Provides for the use of pesticides (including herbicides) to ensure compliance with label conditions.
NSW Department of Environment and Conservation - National Parks and Wildlife Service	*National Parks and Wildlife Act, 1974* *Threatened Species Conservation Act, 1995* *Threatened Species Legislation Amendment Act, 2004*	Provides for protection of native species and habitat, especially threatened species, through the application of agreed Conservation Protocols or Codes of Practice. Provides for the registration and protection of Aboriginal heritage sites. Amends the 1995 Act by integrating conservation into decisions and planning processes concerning land use and development assessment with the Act coming into force in 2005 along with the uncommenced amendments from 2002.
NSW Department of Environment and Conservation - National Parks and Wildlife Service	*Wilderness Act, 1987*	Provides for the identification, protection and use of wilderness.
NSW Department of Planning	*Environmental Planning and Assessment Act, 1979*	Requires assessment of the environmental (and other) effects of activities that are not conducted under an integrated forestry operations approval issued under the Forestry and National Parks Estate Act 1998.
NSW Department of Natural Resources	*Forestry and National Park Estate Act, 1998*	Provides for NSW Forest Agreements together with Integrated Forestry Operations Approvals, which integrate the licensing of State Forests forestry operations for a 20-year period.

Agency	Main Legislation	Purpose
Natural Resources Commission	*Natural Resources Commission Act, 2003*	Provides for an independent body with broad investigating and reporting functions, to establish a scientific basis for properly informed management of natural resources, adoption of State-wide standards and targets, and advice on conditions for broad-scale clearing for purposes of Native Vegetation Act 2003.
NSW Department of Natural Resources	*Plantations and Reafforestation Act, 1999*	Provides for the integrated approval and regulation of plantation operations on authorised plantations.
NSW Department of Natural Resources	*Native Vegetation Act, 2003 (Provisions not yet commenced – due late 2005)*	Intended to repeal the Native Vegetation Conservation Act 1997. Regulations under the Act currently being developed including a Code of Private Native Forestry.
NSW Department of Natural Resources	*Native Vegetation Conservation Act, 1997*	Regulates the clearing of native vegetation (including trees) on private and some Crown lands, by requiring consent or compliance with a Regional Vegetation Management Plan or Code of Practice. (Will be repealed by Native Vegetation Act 2003.)
NSW Department of Natural Resources	*Catchment Management Authorities Act, 2003*	Establishes authorities for purpose of developing operational, investment and decision-making natural resource functions to catchment level to ensure proper management of natural resources in interests of the State and in consultation with Natural Resource Commission. Authorities are to develop Catchment Action Plans to implement management decisions.
NSW Department of Natural Resources	*Soil Conservation Act, 1938*	Promotes the Department to oversee protection of the State's soil when affected by other agencies, including Forests NSW.
NSW Department of Natural Resources	*Aboriginal Land Rights Act, 1983*	Makes recognition of Aboriginal people's traditional and cultural rights to the land and provides for the vesting of claimable Crown lands in the NSW Aboriginal Land Council or Local Aboriginal Land Councils on the Aboriginal owner's behalf.
NSW Department of Natural Resources	*Native Title (NSW) Act, 1994*	Confirms certain rights and ensures NSW law is consistent with actions in the Native Title Act 1993 (C'wlth) concerning future acts that affect native title.
National Native Title Tribunal	*Native Title Act, 1993 (Commonwealth)*	Acknowledges native title and provides mechanisms to protect native title interests.
NSW Heritage Office	*Heritage Act, 1977*	Provides for the identification and conservation of environmental heritage.

Agency	Main Legislation	Purpose
NSW Department of Primary Industries - Fisheries	*Fisheries Management Act, 1994*	Provides for the protection of fish habitat, threatened fish species and the maintenance of fish passage through the application of a Fisheries Licence.
NSW Department of Primary Industries - Agriculture	*Noxious Weeds Act, 1993*	Provides for categorisation of noxious weeds and specifies the extent of control required for each category by private and public landholders.
Rural Lands Protection Boards	*Rural Lands Protection Act, 1998*	Provides for the protection of rural lands through the functions of Rural Lands Protection Boards, as statutory bodies responsible for the management of pest and insect control.
NSW Department of Natural Resources	*Water Management Act, 2000*	Promotes sustainable and integrated management of water sources of State through development of Water Management Plans in specified Water Management Areas.
NSW Rural Fire Services	*Rural Fires Act, 1997*	Provides for the coordinated prevention and suppression of bush fires.
NSW Workcover Authority of NSW	*Occupational Health and Safety Act, 2000*	Legislates for the occurrence of a safe work environment, use of safe equipment and adherence to safe working practices.

For access to any of the legislation above, the following Internet address should be used:
http://www.legislation.nsw.gov.au/ OR http://www.austlii.edu.au/au/legis/nsw/consol_act

TABLE D

Principal Queensland Legislation Affecting the Delivery of Sustainable Forestry

Agency	Main Legislation	Purpose
Environmental Protection Agency	*Aboriginal Cultural Heritage Act 2003*	Provides for the effective recognition, protection and conservation of Aboriginal cultural heritage
Department of Primary Industries & Fisheries	*Agricultural Chemicals Distribution Control Act 1966*	Provides for declaration of hazardous areas and sets restrictions on distribution of chemicals.
Environmental Protection Agency	*Environmental Protection Act 1994*	Aims to protect Queensland's environment through an integrated management program that is consistent with ecologically sustainable development. Through the Act and subordinate Environmental Protection Policies (EPPs), binds all persons, including the State, and is to be administered with community involvement.
Department of Emergency Services	*Fire and Rescue Authority Act 1990*	Aims to reduce loss and damage on rural lands.
Environmental Protection Agency, Department of Natural Resources and Mines & Department of Primary Industries & Fisheries	*Forestry Act 1959*	Provides for forest reservation, management, silvicultural treatment and protection of State Forests, and the sale and disposal of forest products and quarry material, the property of the crown on State Forests, Timber Reserves and on Other Crown Lands.
Department of Local Government and Planning	*Integrated Planning Act 1997*	Seeks to achieve ecological sustainability through coordinating and integrating planning, and managing the process of development and the effects of development on the environment. Local Government planning schemes are one of the main instruments that progresses the aims of the IPA. Regulates the development of land and captures a range of activities, including timber growing; covers the clearing of all types of vegetation; and provides security for established farm forestry enterprises.

Agency	Main Legislation	Purpose
Department of Natural Resources and Mines	*Vegetation Management Act 1999*	Promotes 'legitimate' (sustainable) forestry on private land. Regulates the clearing of vegetation in a way that conserves the — • Remnant endangered regional ecosystems, remnant of concern regional ecosystems, remnant not of concern regional ecosystems • Vegetation in declared areas • Ensure clearing does not cause land degradation • Prevent loss of biodiversity • Maintain ecological processes • Manage environmental effects of clearing • Reduce greenhouse gas emissions
Department of Natural Resources and Mines	*Land Act 1994*	Requires land to which this Act applies to be managed for the benefit of the people of Queensland by having regard to—Sustainability, Evaluation, Development, Community Purpose, Protection, Consultation and Administration
Department of Primary Industries & Fisheries	*Diseases in Timber Act 1975*	Provides for the taking of measures for the extermination, prevention, or control of the dissemination of any disease in timber and for related purposes.
Department of Primary Industries & Fisheries	*Timber Utilisation and Marketing Act 1987*	Relates to the sale of *Lyctus*-susceptible timber, and controls the use of wood preservative chemicals.
Department of Industrial Relations	*Workplace Health and Safety Act 1995*	Objective is to prevent a person's death, injury or illness being caused by a workplace, by workplace activities or by specified high-risk plant
Environmental Protection Agency and Department of Natural Resources and Mines	*Nature Conservation Act 1992*	Provides for the conservation of nature, dedication and declaration of protected areas of Crown land, management of protected areas and protection of native wildlife and its habitat and conservation plans. States that a person must not interfere with a cultural or natural resource of a protected area, unless approved under certain conditions.
Department of Primary Industries & Fisheries	*Plant Protection Act 1989*	Provides for the control and removal of pest infestation of plants in Queensland, helps other jurisdictions prevent, control or remove plant pests, diseases, pest infestations, infections and conditions, and facilitates the movement of plants in and out of Queensland.
Environmental Protection Agency	*Queensland Heritage Act 1992*	Provides for the conservation of Queensland's heritage, recording of protected areas, and restrictions on development of such areas.

Agency	Main Legislation	Purpose
Department of Main Roads and Department of Transport	*Transport Infrastructure Act 1994*	Provides a regime that allows for and encourages effective integrated and efficient management of a system of transport infrastructure. Amongst other objectives, in the case of roads, to establish a regime which (ii) influence can be exercised over the total road network in a way that contributes to overall transport efficiency
Department of Main Roads and Department of Transport	*Transport Planning and Coordination Act 1994*	Aims to improve, within the government's overall policy agenda— • the economic, trade and regional development performance of Queensland; and • the quality of life of Queenslanders; by achieving overall transport effectiveness and efficiency through strategic planning and management of transport resources.
Environmental Protection Agency	*Aboriginal Land Act 1991* *Torres Strait Islander Land Act 1991*	To provide for the granting, and the claiming and granting, of land as Aboriginal land, and for other purposes. To provide for the granting, and the claiming and granting, of land as Torres Strait Islander land, and for other purposes.
Department of Natural Resources and Mines	*Land Title Act 1994*	Consolidates and reforms the law about the registration of freehold land and interests in freehold land, and for other related purposes.

For access to any of the legislation above, the following Internet address should be used:
http://www.legislation.qld.gov.au/legislation.htm OR http://www.austlii.edu.au/au/legis/qld/consol_act/

TABLE E

Main legislation directing the implementation of sustainable forest management in Tasmania

Agency	Main Legislation	Purpose
Forestry Tasmania	*Forestry Act 1920*	Empowers Forestry Tasmania with responsibility for exclusive control and management of forest products and forest operations for State forest.
Forest Practices Board	*Forest Practices Act 1985*	Establishes the Forest Practices Code and Forest Practices System to provide for the sustainable management of forest values on any land subject to forest operations. Provides for the establishment of Private Timber Reserves on private land to provide security of long-term forestry use for land owners.
Department of Primary Industries, Water and Environment	*Environmental Management and Pollution Control Act 1994*	Establishes duty of care on everyone to prevent or minimise environmental harm. Defines potentially harmful activities requiring assessment and approval. Identifies notification requirements for environmental incidents.
Department of Primary Industries, Water and Environment	*Land Use Planning and Approvals Act 1993*	Provides for land use planning and approvals except for forest practices specifically regulated by the *Forest Practices Act 1985*
Department of Primary Industries, Water and Environment	*Nature Conservation Act 2002*	The conservation and protection of fauna, flora and geological diversity of the State, to provide for the declaration of national parks and other reserved land and for related purposes.
Department of Primary Industries, Water and Environment (Parks and Wildlife Service)	*Threatened Species Protection Act 1995*	To provide for the conservation management of scheduled threatened species of flora and fauna.
Department of Primary Industries, Water and Environment	Natural Resources Management Act 2002	The establishment of the Tasmanian Natural Resources Management Council and regional committees for natural resource management and to provide for the development of regional strategies for natural resource management.
Department of Primary Industries, Water and Environment (Parks and Wildlife Service)	*Aboriginal Relics Act 1975*	To provide for the identification and protection of all Aboriginal relics (sites).
Office of Aboriginal Affairs, Department of Premier and Cabinet	*Aboriginal Land Act 1995*	To promote reconciliation with the Tasmanian Aboriginal community by granting to Aboriginal people certain parcels of land of historic or cultural significance.

Department of Primary Industries, Water and Environment (Parks and Wildlife Service)	*Historic Cultural Heritage Act 1995*	To identify, assess and protect historic (post settlement) cultural heritage.
Department of Primary Industries, Water and Environment	*Weed Management Act 2000*	Requires landowner to destroy, prevent breeding of, control, eradicate or reduce spread of designated declared weeds depending on the requirement for listed weed species.
Department of Primary Industries, Water and Environment	*Agricultural and Veterinary Chemicals (Control of Use) Act 1995*	Prevents restricted chemicals being used without a permit, being registered under the AgVet Code and having approved labelling in accordance with the Code.
Department of Primary Industries, Water and Environment	*Animal Welfare Act 1993; Animal Welfare Regulations 1993*	Prescribes substances and animals, which includes the use of 1080 (sodium fluoroacetate) for the control of wallabies, brush tail possums and rabbits.
Department of Tourism, Parks, Heritage and the Arts	*National Parks and Reserves Management Act 2002.*	To provide for the management of national parks and other reserved land, to repeal the National Parks and Wildlife Act 1970 and related purposes.
Workplace Standards Tasmania	*Workplace Health and Safety Act 1995* *Workplace Health and Safety Regulations 1998*	Provides for the health and safety of persons employed, engaged or affected by industry.
Department of Health and Human Services (Tasmania Fire Service)	*Fire Service Act 1979*	Provides for the control and use of fire in the urban and rural environment.

For access to any of the legislation above, the following Internet address should be used:
http://www.thelaw.tas.gov.au/index.w3p OR http://www.austlii.edu.au/au/legis/tas/consol_act/

TABLE F

Main Western Australian Legislation Affecting the Delivery of Sustainable Forest Management

Agency	Main Legislation	Purpose
Department of Conservation and Land Management	*Conservation and Land Management (CALM) Act 1984.* *CALM Amendment Act 2000* *Forest Management Regulations 1993.*	Empowers CALM to plan and manage forests on Crown Land tenures. Responsibility for the conservation and protection of indigenous flora and fauna on all tenures, including private land. Establishes the Conservation Commission of W.A. to advise Minister on application of principles of ESFM and production and harvesting on a sustained yield basis of forest produce. To regulate forest management activities, particularly timber harvesting.
Department of Conservation and Land Management	*Wildlife Conservation Act 1950*	Protect declared flora or fauna, including those likely to become extinct, rare, or otherwise in need of special protection from adverse effects resulting from forest management.
Department of Environmental Protection	*Environmental Protection Act 1986*	Provides for the assessment of the environmental impacts of forest management proposal and allows the Minister to set conditions on implementation to moderate adverse impacts.
Forest Products Commission	*Sandalwood Act 1929* *Sandalwood Regulations 1993.*	Provides for the regulation of sandalwood harvesting.
Aboriginal Affairs Department.	*Aboriginal Heritage Act 1972*	Provides protection for Indigenous objects and places of significance. Protect Aboriginal cultural material from damage resulting from forest management activities.
Forest Products Commission	*Forest Products Act 2000*	Provides for the Forest Product Commission to participate in forest management planning, ensures the principles of ecologically sustainable forest management are applied in the management of indigenous (native) forest products located on public land and gives Forest Products Commission the responsibility for all harvesting and the sale of forest products.
Fire and Emergency Services	*Bush Fires Act 1954*	Provides for fire management and the control of fire in rural areas.
Department of Industry and Resources	*Carbon Rights Act 2003*	Provides for the creation and effect of certain interests in land in relation to the effects of carbon sequestration from, and carbon release to, the atmosphere, and for related matters.

Department of Local Government	*Control of Vehicles (Off-Road Areas) Act 1978*	Prohibits the use of vehicles in certain places, to make provision as to the use of vehicles other than on a road, to provide for areas where the use of off-road vehicles shall be permitted, for the registration of off-road vehicles, and for related purposes.
Water and Rivers Commission	*Country Areas Water Supply Act 1947* *Country Areas Water Supply (Clearing Licence) Regulations 1981* *Country Areas Water Supply By-Laws 1957* *Metropolitan Water Supply Sewerage and Drainage Act 1909*	The safeguarding of water supply. Allows Water & Rivers Commission to control clearing in selected catchments and to establish By-Laws to regulate land use to control potential pollution in a Public Drinking Water Source Area. Provides for protection of vegetation on all land tenures if clearing is likely to affect water quality or yield.
Agriculture WA	*Soil and Land Conservation Act 1945*	Provides for the protection of soil and water resources by establishing controls on clearing native vegetation on all tenures and drainage works. Mainly relevant to plantation activities. Provides for protection of vegetation on all land tenures if clearing is likely to affect land degradation.
Heritage Council of WA	*Heritage of Western Australia Act 1990*	Provides for the protection and conservation of cultural heritage from disturbing activities, facilitation of development that is in harmony with cultural values, and promotion of public awareness.
Health Department.	*Health Act 1911.* *Health (Pesticide) Regulations 1956*	Controls the use of pesticides in forest management.
Agriculture WA	*Aerial Spraying Control Act 1966* *Aerial Spraying Control Regulations 1971*	Regulates the use of aerial spraying to prevent off-site effects. Significant for plantation management.
Agriculture WA	*Agriculture and Related Resources Protection Act 1976 and Agriculture Protection Board Act 1950*	Control feral animals and declared plants and animals.
WorkSafe	*Occupational Safety and Health Act 1984* *Timber Industry Regulation Act 1926*	To protect workers by ensuring provision and maintenance of safe work place and systems of work.
Agriculture Protection Board	*Agriculture Protection Board Act 1950*	The control of declared plants and animals required by section 39 of the ARRP ACT 1976.

Department of Land Administration	*Land Administration Act 1997*	Consolidates and reforms the law about Crown Land and the compulsory acquisition of land generally, to repeal the Land Act 1933 and to provide for related matters.
Agriculture WA	*Agriculture and Veterinary Chemicals (Western Australia) Act 1995*	To regulate the use of agricultural chemicals. This Act implements the Commonwealth Agricultural and Veterinary Chemicals Code Act 1994.
The Biological Control Authority of WA	*Biological Control Act 1986*	To make provision for the biological control of pests in Western Australia. This is part of Australia wide uniform legislation. The Commonwealth Biological Control Act 1984 refers in relation to this State Legislation.
Department of Agriculture	*Plant Diseases Act 1914*	Prevent the introduction into Western Australia of diseases affecting plants, to provide for the eradication of such diseases and to prevent the spread thereof, and to amend and consolidate the law relating to such matters.
	Dangerous Goods (Transport) Act 1998	To provide for the safe transport of dangerous goods by vehicles.
	Explosives and Dangerous Goods Act 1961	The Act regulates the authorisation, manufacture, importation and use of explosives and the classification, making, storage, carriage and sale of explosives and dangerous goods.
Fisheries WA	*Fish Resources Management Act 1994*	The management of fish resources. This includes any public authority that proposes to construct, alter or modify a dam, weir or reservoir on a river, creek or other naturally flowing stream.
Water Corporation	*Land Drainage Act 1925*	Provide for the drainage of land, the use of drains and drainage water and the constitution of drainage districts and for other relevant purposes.
Water and Rivers Commission	*Rights in Water and Irrigation Act 1914*	To manage water resources sustainably; protect environmental values; encourage the efficient use of water; and actively engage local communities in management.
Department of Local Government	*Local Government Act 1995*	Provide for a system of local government in Western Australia, to amend the Local Government Act 1960 and for related purposes.

Local Government Authorities	*Town Planning and Development Act 1928*	The Act sets out 30 general Provisions for a Town Planning Scheme. No. 10 includes the classification, or zoning for, among other things, conservation, agricultural or rural use, protection of the environment or landscape. No. 11A includes the preservation of trees and the planting or replanting of trees or particular species of trees. This is relevant to plantations on private property.
Water and Rivers Commission	*Waterways Conservation Act 1976*	To make provision for the conservation and management of certain waters and of the associated land and environment. It also addresses any concern regarding pollution of a river, inlet or estuary.

For access to any of the legislation above, the following Internet address should be used:
http://www.slp.wa.gov.au/statutes/swans.nsf OR http://www.austlii.edu.au/au/legis/wa/consol_act/

TABLE G

Main Legislation Relevant to Forestry Operations in South Australia on all tenures

Agency	Main Legislation	Purpose
Department of State Aboriginal Affairs	*Aboriginal Heritage Act 1988*	Provides protection and preservation of Aboriginal heritage.
Primary Industries & Resources South Australia	*Agricultural and Veterinary Products (Control of Use) Act 2002*	Regulates the use of agricultural and veterinary chemicals in SOUTH AUSTRALIA. General duty, when using agricultural products, to prevent the product from escaping the target area and causing harm. Number of offences relating to the storage, use and disposal of agricultural chemical products and standards prescribed for the sale of fertilisers.
Department of Water, Land and Biodiversity Conservation	*Animal and Plant Control (Agricultural Protection and Other Purposes) Act 1986*	Provides for the control of animals and plants, for the protection of agriculture and the environment, and for the safety of the public.
SA Biological Control Authority	*Biological Control Act 1986*	Provides for the biological control of pests, involving the control of organisms by the release of live organisms of another kind. Primarily aimed at agricultural pests. Act essentially provides the procedures to be followed. Regulates the actions of the Biological Control Authority and prevents the release of agent organisms before sufficient research is completed.
South Australian Country Fire Service	*Country Fires Act 1989*	Provides for the prevention, control and suppression of bushfires in country areas of the State.
Department for Administrative & Information Services—Public Sector Workforce Relations	*Dangerous Substances Act 1979*	Regulates the storage and use of substances declared to be dangerous substances, including fuels, gases and flammable liquids.
Planning SA (Department for Transport and Urban Planning) Local Councils	*Development Act 1993*	Regulates all development in South Australia by providing specific assessment and approval processes for all actions that fall within the definition of 'development' This includes developing land for commercial forestry with regard to conformity to Council Development Plans.
Environment Protection Agency (Department for Environment and Heritage)	*Environment Protection Act 1993*	Promotes the principles of ESD based on sound environmental practices and policies that protect, restore and enhance the quality of the environment. Includes provisions for pollution control, licences covering prescribed activities and general duty of care requirements to minimise harm to the environment.

ForestrySA (South Australian Forestry Corporation)	*Forestry Act 1950*	Provide for the creation, management and protection of State Forests, including conservation, development and management of 'native forest reserves'. NOTE: NOT APPLICABLE TO PRIVATE LAND.
ForestrySA (South Australian Forestry Corporation)	*Forest Property Act 2000*	Enables trees and land to be separately owned for improved investment security and transferability. Act also provides for harvest security – 'right to harvest'.
Primary Industries & Resources South Australia	*Fruit and Plant Protection Act 1992*	Provides for the protection of fruit and plants from disease. Outlines the obligations for reporting of such diseases to prevent the spread of disease.
Heritage SA (Department for Environment and Heritage)	*Heritage Act 1993*	Provides protection and preservation of European heritage.
Mineral Resources Group—Department of Primary Industries and Resources SA	*Mining Act 1971*	Regulates the conduct of mining activities in South Australia by requiring proponents obtain licences and leases for all stages of the mining activity. Act sets out the conditions for those leases, over what land they may be granted and what rights are conferred by such leases.
National Parks and Wildlife SA (Department for Environment and Heritage)	*National Parks and Wildlife Act 1972*	Provides protection measures for endangered and vulnerable plants and animals. Provides for the establishment of reserves for public benefit and recreation.
Native Vegetation Council and Department of Water, Land and Biodiversity Conservation	*Native Vegetation Act 1991*	Objective is the preservation of native vegetation and includes legislative controls for native vegetation clearance.
Department of Water, Land and Biodiversity Conservation	*Natural Resources Management Act 2004*	Promotes sustainable and integrated management of the State's natural resources and makes provision for the protection of the State's natural resources.
Workplace Services Department for Administrative and Information Services	*Occupational Health Safety and Welfare Act 1986*	Provides for the health, safety and welfare of persons at work. In addition, serves to protect the public against risks to health or safety arising out of work related activities, including the use and operation of plant and equipment.
Animal Welfare Advisory Committee	*Prevention of Cruelty to Animals Act 1985*	Act aims to achieve prevention of cruelty to any animal. Trapping of animals may occur subject to constraints.

Local Councils SA Health Commission' Public and Environmental Health Council	*Public and Environmental Health Act 1987*	Deals with the protection of public health, including provisions prohibiting pollution of water supplies, offensive activities, offensive odours, insanitary conditions on premises, discharge of waste into a public place. Seeks to prevent the spread of certain diseases through notification and containment procedures.
Local Councils	*River Murray Act 2003*	Provides increased protection for the River Murray catchment in South Australia.
Department of Water, Land and Biodiversity Conservation	*Soil Conservation and Land Care Act 1989*	Seeks to ensure that conservation and rehabilitation of land becomes an integral part of sustainable land management.
South Eastern Water Conservation and Drainage Board Local Councils	*South Eastern Water Conservation and Drainage Act 1992*	Prevents/minimises damage to agricultural production and the environment caused by flooding in the South East of South Australia. Aims to improve soil quality productiveness generally throughout rural land of the South East of South Australia, and to enhance the development of the environment of the South East of South Australia. Establishes a number of duties for private land owners.
Local Councils	*Water Conservation Act 1936*	Brings together all the provisions for the conservation of water. Protects the waterways of South Australia.
Department of Water, Land and Biodiversity Conservation	*Water Resources Act 1997*	Controls the use of water resources, including the development of Catchment Water Management Plans covering water allocation polices for prescribed water resources. Provides for the health and vitality of ecosystems that depend on these resources.
Wilderness Advisory Committee Department of Environment and Planning Department for Environment and Heritage (National Parks and Wildlife)	*Wilderness Protection Act 1992*	Protects areas of pristine habitat throughout South Australia. Provides for the declaration of Wilderness Protection Areas. Wilderness areas are those areas that have been minimally subjected to modern technology, exotic plants, animals or other organisms.

For access to any of the legislation above, the following Internet address should be used:
http://www.parliament.sa.gov.au/dbsearch/legsearc.htm OR
http://www.austlii.edu.au/au/legis/sa/consol_act/

TABLE H

Principal Northern Territory Legislation Affecting the Delivery of Sustainable Forestry

Agency	Main Legislation	Purpose
Department of Business, Industry and Resource Development	*Plant Diseases Control Act 2000*	An Act relating to the provision and eradication of diseases in plants.
Department of Infrastructure, Planning and Environment	*Pastoral Lands Act 2000*	An Act to make provision for the conservation and granting of title to pastoral land and the administration, management and conservation of pastoral land, and for related purposes.
Department of Infrastructure, Planning and Environment	*Parks and Wildlife Commission Act 2000*	An Act to establish a Commission to establish and manage, or assist in the management of, Parks, Reserves, Sanctuaries and other land, to encourage protection, conservation and sustainable use of wildlife, to establish a land-holding corporation in connection with these purposes, and for related purposes.
Department of Business, Industry and Resource Development	*Noxious Weed Act 2000*	An Act to provide for the eradication or control of noxious weeds.
Department of Infrastructure, Planning and Environment	*Water Act 2000*	An Act to provide for the investigation, allocation, use, control, protection management and administration of water resources and related purposes.
Department of Infrastructure, Planning and Environment	*Bush Fires Act*	An Act relating to the prevention and suppression of bush fires.
Department of Infrastructure, Planning and Environment	*Environment Assessment Act 1994*	An Act to provide for the assessment of the Environmental effects of development proposals and for the protection of the Environment.
Department of Infrastructure, Planning and Environment	*Land Acquisition (Pastoral Leases) Act 1982*	An Act relating to the acquisition by the Territory of certain interests in land.
Department of Business, Industry and Resource Development	*Mining Act 2000*	An Act relating to mining.
Department of Infrastructure, Planning and Environment	*Water Management and Pollution Control Act 2000*	An Act to provide for the protection of the environment through encouragement of effective Waste Management and Pollution Prevention and control practices and for related purposes.
Department of Infrastructure, Planning and Environment	*Aboriginal Lands Act 1992*	An Act to provide for access to Aboriginal Land, certain roads bordered by Aboriginal Land and the seas adjacent to Aboriginal Land.
Department of Infrastructure, Planning and Environment	*Crown Lands Act 2000*	An Act relating to Crown Land.

Department of Infrastructure, Planning and Environment	*Northern Territory Codes of Practice for Forestry Plantations*	To facilitate forestry development by providing a document consistent across all land tenures. It ensures that all clearing in the Northern Territory, irrespective of land tenure, is subject to approval by the Minister for Lands and Planning pursuant to Sect. 31 (1) of the Planning Act.

For access to any of the legislation above, the following Internet address should be used:
http://notes.nt.gov.au/dcm/legislat/legislat.nsf?OpenDatabase OR
http://www.austlii.edu.au/au/legis/nt/consol_act/

TABLE I

Main Legislation Relevant for the Assessment and Approval of ACT Forests' Forestry Activities

Agency	Main Legislation	Purpose
ACT Forests	*No applicable legislation*	To allow ACT Forests to operate as manager of forest resource.
Environment ACT	*Environment Protection Act 1997* *Cotter River Act 1914*	Establishes an environmental duty of care in relation to water quality and other environmental pressures and to protect soil and water quality aspects of harvesting through the application of a Pollution Control licence.
Environment ACT	*Nature Conservation Act 1980*	To protect native flora, fauna and habitat, especially threatened species, through the application of agreed Conservation Protocols or Codes of Practice. Provides management authority for national parks and nature reserves.
Department of Urban Services (Planning)	*Land (Planning and Environment) Act 1991*	Specifies procedures for environmental impact assessment and management objectives for land defined as Public Land and where commercial forestry can take place and requirements for planning approvals.
ACT Bushfire Service	*Bushfire Act 1936*	Provides authority for the management of wildfire and bushfire fuel hazard.
Department of Urban Services (Heritage)	*Heritage Objects Act 1991*	Provides protection to heritage objects and sites (both post-European and Aboriginal).
Department of Urban Services (Planning) and National Capital Authority (Commonwealth)	*National Land Ordinance 1989*	Approval process for lands that have national (Commonwealth) planning control. (Several forest areas are located on such lands.)
Department of Urban Services (Planning and Environment)	*Enclosed Lands Protection Act 1943* *Protection of Lands Act 1937* *Recovery of Lands Act 1929*	Provide for protection of, caveats over and changes to ownership of Territory land.
Department of Urban Services (Planning and Environment)	*Water Resources Act 1998*	Controls access and use of water from water bodies and groundwater, establishes environmental flow requirements and provides for protection of lands required for water catchment
ACT Workcover	*Occupational Health and Safety Act 1989*	Approval of forestry processes as they apply to OH&S regulations

Note: There is no freehold land in the ACT and no private forest industry.

For access to any of the legislation above, the following Internet address should be used: http://www.legislation.act.gov.au/ OR http://www.austlii.edu.au/au/legis/act/consol_act

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