AS 4708 Supp 1—2007

AS 4708 Supplement 1—2007

The Australian Forestry Standard—Guidance for medium and large native forest ownerships (Supplement 1 to AS 4708—2007)

This Australian Standard Supplement was prepared by the Australian Forestry Standard Technical Reference Committee of Australian Forestry Standard Limited. As an accredited Standards Development Organization, Australian Forestry Standard Limited develops and publishes Australian Standards®. The Standard Supplement was endorsed on behalf of the Council of Standards Australia on 7 August 2007.
It was published on 17 August 2007.

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Originated as AS 4708 Supplement 1(Int)—2003.
This edition AS 4708 Supplement 1—2007.

PUBLISHED BY:
Australian Forestry Standard Limited
Building 6, CSIRO Complex
Wilf Crane Crescent
[PO Box 7031]
YARRALUMLA ACT 2600

ISBN 0 7337 8373 2

PREFACE

This supplement to AS 4708—2007 has been prepared to provide guidance for forest managers and owners of medium and large native forest ownerships as defined by the Size of ownerships clause within Section 5—Certification framework in The Australian Forestry Standard.

AS 4708—2007 is herein referred to as 'the Standard' or AFS (Australian Forestry Standard). The requirement numbering mirrors the numbering in AS 4708—2007.

Supplements 1, 2 and 3 to The Australian Forestry Standard AS 4708—2007 are available separately or as a package.

They provide:

1. Guidance for medium and large native forest ownerships (Supplement 1).
2. Guidance for medium and large plantation ownerships (Supplement 2).
3. Guidance for small native forest and plantation ownerships (Supplement 3).

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

Guidance for medium and large native forest ownerships

A-4.1.1 Policy

GUIDE TO VERIFICATION

The intent of this requirement is to ensure commitment to a structured process for achieving the requirements of the Standard, in particular continuous improvement in management of the defined forest area (in terms of both the management system and its results).

Type of requirement

Document-based evaluation

Basis of assessment

That a forest management policy addressing forest management is in place (and publicly available) and is relevant to the nature, scale of ownership and impacts of the business.

That there is a commitment to compliance with relevant legislation and other requirements.

That there is ongoing development of awareness, personal commitment, motivation and leadership from top management or owner to systematic management and continual improvement in management performance.

That the forest manager demonstrates a long-term commitment to adhere to the requirements of the Standard.

Indicators

Forest management policy.

Ongoing programs/ processes to communicate and reinforce commitment to the forest management policy and environmental awareness to employees/staff/contractors.

GUIDE TO IMPLEMENTATION

The Forest Management Policy might include statements on:

- The core values and beliefs and mission of the manager, in relation to pursuing sustainable forest management, consistent with the AFS requirements.
- An awareness of and commitment to continual improvement in environmental performance.
- Compliance with relevant environmental regulations, laws and other criteria to which the manager subscribes , including payment of legally prescribed royalties, taxes, fees and charges and the requirements of codes of practice.
- Respect for relevant international agreements that Australia has ratified and internationally agreed principles of sustainable forest management.
- Minimising the environmental impacts of forest management activities.
- Key objectives and targets in relation to the forest performance management criteria and requirements of the Standard.
- Requirements of and communication with stakeholders.
- Developing procedures to monitor and evaluate the performance (outcomes) of management and associated performance indicators.
- Education and training of staff and employees.
- Sharing environmental experience.
- Encouraging compliance with the forest manager’s forest management system by suppliers and contractors.

Sources of information

Regulatory authorities, government agencies and associated web sites and informative material.

AS/NZS ISO 14001:2004 *Environmental Management Systems—Requirements with guidance for use.*

ISO TR 14061:1998 *Information to assist forestry organisations in the use of environmental management standards ISO14001 and ISO14004.*

NOTE: The ISO TR 14061:1998 has been withdrawn and would be used solely as an information source.

Industry associations, professional institutions and groups.

Commercial databases.

A-4.1.2 Planning

GUIDE TO VERIFICATION

The intent of this requirement is to ensure the development of a management plan (or equivalent instruments) that establishes a strategic framework for the achievement of the forest management performance requirements of the Standard and compliance with legal, and other requirements to which the organisation subscribes.

Type of requirement

Document-based evaluation

Basis of assessment

That a forest management plan or equivalent instruments have been formulated and are in place.

That specific aspects and impacts of the organisation's operational activities have been identified, assessed and, where appropriate, mapped in relation to the forest management performance requirements.

That objectives, targets and procedures in relation to the forest management performance requirements are established.

That legal and other requirements are identified.

That monitoring processes are planned.

That processes for stakeholder input have been established and implemented in accordance with requirement 4.2.2 of the Standard.

Indicators

Forest management plan (or equivalent instruments).

List of identified social, environmental, economic and cultural heritage values relevant to forest management performance criteria and requirements.

List of legal and other requirements.

Maps of specific aspects and impacts.

The protection and maintenance of significant environmental and other special values are considered in the forest management plan (or equivalent instruments).

Guidelines/procedures for controlling and preventing environmental impacts.

GUIDE TO IMPLEMENTATION

It is recognised that forest management plans (or equivalent instruments), including objectives and targets, will vary to accommodate forest type, regional conditions, tenure of the defined forest area and management intent. It is not the intent of this requirement to determine the specific format or content of the forest management plan (or equivalent instruments) and therefore the forest manager has scope to flexibly define the planning process and documents to suit his/her management processes, provided the basic forest management performance requirements of the standard are met. For public forest management agencies, traditional or statutorily defined management planning processes may provide the appropriate framework. Both public and private forest owners may seek to define more commercially relevant instruments that build on existing corporate, business and environmental planning processes.

The requirement recognises the importance of providing processes to allow stakeholders to participate meaningfully and to influence outcomes on important issues. The requirements for public participation are specifically addressed under Criterion 2 of the Standard.

A list, or register, of legal requirements pertaining to forest management activities would facilitate keeping track of compliance with such requirements. Legal requirements may include—

- Those specific to forest operations,
- Environmental laws,
- Authorisation, licences and permits, and
- Property rights and vestment of the resource.

Management plans (or equivalent instruments) might include maps, including relevant zoning, of the defined forest area, and environmental and other special values.

A-4.1.3 Implementation

GUIDE TO VERIFICATION

The intent of this requirement is to ensure the forest manager can demonstrate capacity to successfully implement the management system.

Type of requirement

Document-based evaluation with verification in the field

Basis of assessment

That operational controls for achieving objectives and targets of management and meeting the forest management performance requirements are in place.

That management plans (or equivalent instruments) and procedures for forest management operations and activities are documented, kept up-to-date, and can be readily located.

That contingency/emergency plans are in place to manage emergency and accident situations.

That human and financial resources, specialised skills, and technology essential to the implementation and control of the management system are appropriate to the type and scale of ownership.

That roles, responsibilities and authorities for staff and workers are defined.

That managers, supervisors and workers (including contractors and their workers and self-employed persons) understand their responsibilities and accountabilities and are sufficiently trained in their various tasks.

That an appropriate means for communication of relevant procedures and requirements to staff and workers, suppliers and contractors, and reporting of outcomes of forest management activities and incidents is established.

Indicators

Register/list of individual and group responsibilities and accountabilities.

Records of training of forest field workers in—

- Environmental awareness,
- Management process skills, and
- Proper application of operational procedures.

Specific operational plans, procedures, controls and guidelines relating to forest management performance requirements.

Reporting and reviewing processes.

GUIDE TO IMPLEMENTATION

Appropriate actions might include—

- Establishing a document control process that ensures relevant documents are up-to-date, complete and appropriately authorised, can be readily located and periodically reviewed and revised as necessary, and that obsolete documents are promptly removed.
- Preparing emergency and accident plans that include prevention and mitigation of environmental impacts.
- Establishing and ensuring minimum competency standards for key jobs and tasks.
- Training programs for employees, staff and workers, suppliers and contractors so that they are aware of their responsibility and accountability, are motivated in relation to meeting forest management performance requirements, key operators and staff and workers within the organisation identify and understand the legislative and other requirements affecting their activities, and are competent for the tasks they are required to perform.
- Providing operational plans for individual operations that incorporate a maps and identify relevant operating conditions and controls for specified activities—in terms of operational plans, the harvest plan will play a key role.

Operational plans might include on-site assessments of fauna, flora, water, soil and timber values for each area, coupe or compartment of forest proposed for harvesting. The harvest plan might also include the following parameters where relevant: silvicultural treatments, prescriptions for the protection of environmental values such as, flora, fauna and soil, and codes of practice covering licensing requirements, planning provisions for harvesting, tree marking and retention, wet weather controls, pollution controls, and protection of important natural and cultural heritage values.

A-4.1.4 Monitoring

GUIDE TO VERIFICATION

The intent of this requirement is to identify areas and causes of non-conformance, implement remedial actions and implement or modify controls to avoid repetition of the non-conformance to support continual improvement in forest management.

Type of requirement

Document-based evaluation with verification in the field

Basis of assessment

That appropriate auditing, monitoring and reporting procedures are in place for verifying legal compliance and conformance with management plans (or equivalent instruments) and procedures.

That compliance/conformance in the relevant environmental law, regulation and established performance indicators can be demonstrated, and/or that appropriate and effective corrective action can be demonstrated in response to identified non-conformance.

That long-term (performance-based) monitoring of forest management outcomes appropriate to type and scale of ownership is undertaken for relevant requirements so that adverse impacts that may arise can be detected and to ensure that procedures and strategies are appropriate.

That monitoring of the significant/key aspects of the forest resource and forest management activities is periodically performed.

That monitoring procedures allow for comparison of change over time.

That reliability/error rate is known (where it can be established statistically).

That legible, identifiable and traceable records of monitoring and evaluation of management are maintained.

Indicators

Records of monitoring outcomes.

Documentation of audits, monitoring and evaluation of the key impacts of the organisation's activities.

Documentation of changes in procedures resulting from corrective and preventative action.

Communications and reports of the results of monitoring to those within the organisation who are responsible for forest management performance.

GUIDE TO IMPLEMENTATION

Measuring, monitoring, evaluating, and maintaining appropriate records are key activities of management to ensure that management is performing in accordance with the stated forest management arrangements and performance requirements. Maintaining records of monitoring and evaluation, and subsequent reporting on performance of management, its achievements, and progress towards meeting the forest management performance requirements are key elements of the management system for achieving continual improvement. In recognition of the crucial role that the environment plays in forest management activities, the forest manager may report to stakeholders on performance in relation to designated forest management requirements. This provides a means of demonstrating corporate responsibility to the broader community.

Routine monitoring may detect compliance failures that are due to chance or that are not symptomatic of poor practice. Conversely, they may (by chance) fail to detect important breaches of practice. The AFS recognises the need to ensure that the reliability with which breaches of compliance will be detected is known and is appropriate to the scale and intensity of operations.

In common with other forest certification schemes, the AFS utilises the approach of setting minimum performance thresholds in key areas but builds on this approach by establishing a framework for continual improvement which incorporates a process within which trends in monitoring data trigger a range of responses appropriate for the importance of the change. For example, when unwanted trends in monitoring data are identified (e.g. a substantial decline, a consistent decline, or a run of results outside a control limit), it will trigger an

investigation to identify the cause of the trend and specify appropriate remedial action, if any.

Under this approach the discovery of a trend of concern would not in itself represent a breach of sustainable practices. Rather, certifiers should establish that—

- Reliability/error rates are known (in circumstances in which they can be established statistically);
- Assessment results are regularly plotted; and
- Trends in the data are noted and appropriate action taken.

A large number of the specific AFS requirements may not lend themselves to statistically reliable monitoring (including many of the requirements under Criteria 1, 2, 7, 8 and 9 of the Standard); however, there are many situations in which this approach is meaningful and practical, for example reporting of plantation survival, water pollution monitoring following chemical application, assessing compliance with stream-side buffer and other types of protective buffer prescriptions, and the efficacy of surveys for invasive species and disease.

Appropriate actions might include:

- Developing strategies for routine monitoring to build on research findings (for example intensive research may be used to establish the effectiveness of prescriptions in moderating particular impacts, strategic monitoring in a subset of managed areas could then be used to support extrapolations of research findings about moderating impacts to the defined forest area).
- Program of continual improvement.

There are two key aspects to implementing monitoring, measuring and evaluation processes as follows:

Routine monitoring of compliance of plans and management practices with legal requirements to ensure that planning and management practices are in accordance with planned arrangements and support the achievement of forest management performance criteria. Appropriate actions might include:

- Monitoring compliance with legislation and other requirements to which the organisation subscribes.
- Evaluation of audit reports of compliance or non-compliance with plans and operational procedures.
- Identifying and correcting deficiencies in forest management practices where non-compliance is identified.
- Maintaining appropriate monitoring, evaluation and audit records.

Routine monitoring of the performance and outcomes of forest management (in relation to forest management requirements) that is objective, verifiable and reproducible, and is commensurate with the size and nature of the organisation's activities.

This approach provides the forest manager with a monitoring 'tool' to identify deficiencies in forest management performance at an early stage, and fix any problems before they become entrenched or irreversible, thus reducing potential economic and environmental costs.

Appropriate actions might include:

- Routine monitoring of forest management (performance) outcomes using a systematic approach including stakeholder participation where appropriate.
- Regularly recording and visually plotting assessment results as trends of change to provide a baseline of typical patterns.
- Setting agreed forest management performance indicators and measures, 'management control limits or thresholds' and 'acceptable patterns' where the reliability/error rate can be established statistically to determine whether performance of management is

'within' or 'outside' these, as indicated by the monitored trends of change in a designated value.

- Significant changes in the nature or condition of a value (that is outside the agreed management control limits) are noted and root causes investigated and identified.
- Remedial management actions are taken when a significant or 'abnormal' adverse trend is detected, or, management can be enhanced when a trend indicates improvement in a particular value.

Setting performance indicators of forest management monitoring will allow the outcomes of forest management to be assessed for their effectiveness.

Routine monitoring may detect compliance failures that are due to chance or are not symptomatic of poor practice or they may (by chance) fail to detect important breaches of practice. The AFS recognises the need to ensure that the reliability with which breaches of compliance will be detected is known and is appropriate to the scale and intensity of operations.

This approach to monitoring aims to provide a system that is reasonably certain of detecting important changes, if they exist, and avoid the over-confidence in monitoring systems that assume if no problem is detected – none exists. Furthermore, it provides a basis for determining whether monitoring effort is excessive in order to minimise unnecessary monitoring (and thereby costs).

A-4.1.5 Review

GUIDE TO VERIFICATION

The intent of this requirement is to ensure the continuing suitability, adequacy and effectiveness of the forest management system and its procedures and to ensure continual improvement in management performance and forest management outcomes by establishing and maintaining appropriate mechanisms for evaluation and review.

Type of requirement

Document-based evaluation

Basis of assessment

That the results of audits of the management system and monitoring of forest operations and other information is periodically evaluated and reviewed.

That the components of the management system, including monitoring and feedback mechanisms for continual improvement, are periodically evaluated and reviewed.

That changes to the management system are implemented on the basis of these reviews, as well as changing circumstances including changing legal requirements, advances in scientific research and technology, lessons learnt from operational experience, market preferences, and the views of stakeholders.

Indicators

Records of review and evaluations.

Records of changed practices and management system elements.

Records of investment in research and development and technology transfer.

GUIDE TO IMPLEMENTATION

Management review may address the possible need for changes to policy, management objectives and targets, management plans or equivalent instruments and operational procedures, monitoring and evaluation, and other elements of the management system to meet changing circumstances and the commitment to continual improvement.

As part of the review process, appropriate actions might include:

- Reviewing changes in legal requirements, advances in scientific research and technology, lessons learnt from operational experience, market preferences, and changes in the expectations and views of stakeholders.
- An evaluation of management system components including review procedures and feed back mechanisms for continual improvement.
- A review of relevant research and development (R&D).
- Implementation of changes to the system as required.

An active investment in relevant R&D, whether directly or in cooperation and support for industry R&D corporations and Cooperative Research Centres, would demonstrate pro-activity in seeking continual improvement.

A-4.2.1 Identify stakeholders

GUIDE TO VERIFICATION

The intent of this requirement is to establish a basis for seeking stakeholder input to the forest management planning process through a comprehensive scoping exercise to identify relevant stakeholders appropriate to the scale and tenure of the defined forest area. The extent of relevant stakeholder interests for privately owned forested land may be narrower than for publicly owned forested land.

Type of requirement

Document-based evaluation and interviews with stakeholders

Basis of assessment

That a systematic and documented basis for identifying stakeholders has been implemented.

That a list of relevant stakeholders and contact information is established and maintained.

That no systematic or significant omissions are identified.

Indicators

List of neighbours and stakeholders identified.

GUIDE TO IMPLEMENTATION

Stakeholder types

Identification of stakeholders should aim to ensure that participating neighbours and stakeholders are representative of a wide range of interested parties. It is important to consider the broader public interest where decisions are likely to be seen as having regional significance.

Relevant stakeholders may include:

- Neighbours and local residents that may be impacted on directly by forestry operations.
- Local government bodies and regulatory authorities.
- Unions and employees.
- Community and forest user groups and organisations with an environment/conservation, economic, social or heritage interest in the defined forest area.
- Media.
- Indigenous groups or communities.
- Regional and local tourism associations.

Method

The methods used to identify possible stakeholders will vary, depending on the resources and time available to the forest manager and the types and location of the potential stakeholders and a number of the methods could be used together.

Attempts made to identify and communicate with stakeholders, as well as actual communication, should be documented and the documents retained to provide evidence of the forest manager's efforts to identify relevant stakeholders. The thoroughness of this process will not only help protect the interest of stakeholders, but assist in development of the forest project.

Methods might include—

- letter drops (e.g. to surrounding properties);
- formal documented communications and enquiries to boards, departments and groups;
- direct contact via the telephone;
- advertisements in local, regional and national newspapers; and
- face-to-face communication with potential stakeholders or persons that may have additional information.

Sources of information

Sources of information that can be used to identify stakeholders include:

- Former Aboriginal and Torres Strait Islander Commission (ATSIC) Regional Councils, Local Aboriginal Land Councils and local Indigenous communities.
- Local government authorities.
- State and Territory Government agencies responsible for forestry, lands and natural resources.
- Local industry or commerce groups.
- Relevant local individuals (neighbouring farms and residents).
- Local and regional community groups, environment and conservation groups and natural interest groups.

A-4.2.2 Public input

GUIDE TO VERIFICATION

The intent of this requirement is to provide opportunities for stakeholders to meaningfully participate in the forest management planning process and to influence its outcomes; however, this does not mean that decision-making should rest with stakeholders. Rather, the requirement provides a mechanism for the forest manager to demonstrate that public input is taken seriously by being responsive to and respectful of this input.

In the context of this requirement, it is noted that the extent of relevant stakeholder interests for publicly owned forested land will be significantly broader than will be the case on privately owned forested land.

Type of requirement

Document-based evaluation and interviews with stakeholders

Basis of assessment

That relevant stakeholders have been invited to participate in the development of the forest management plan (or equivalent instruments) and diligent efforts have been made to encourage their participation.

That stakeholders have access to relevant background information to support and encourage their interest in participating in the development of the management plan or equivalent instruments.

That stakeholder participation processes have clearly defined operating rules (including scope of activities; goals; timelines; selection criteria for participants [where necessary]; roles, responsibilities and obligations of participants; decision-making methods; information access; and dispute resolution), appropriate to the scale and tenure of the defined forest area and participants have an opportunity to influence the process's operating rules.

That stakeholder participation processes make allowances for cultural differences of participants.

Indicators

List of stakeholders contacted, including those that chose not to participate.

Records of communication to and from stakeholders regarding participation in the forest management planning process, including information provided to stakeholders.

Records of input from stakeholders to the management planning process and the forest manager's consideration and response to stakeholder input, including any processes to resolve disputes.

Level of stakeholder and community support for forest management.

GUIDE TO IMPLEMENTATION

The forest management planning process in which neighbours and stakeholders may participate is described in requirement 4.1.2 of the Standard. It is recognised that stakeholder participation is a multi-lateral process that may operate on different scales and time periods for different dimensions of the forest management planning process. The forest manager has flexibility to define appropriate methodologies that are consistent with its particular operating environment. This might build on existing stakeholder participation processes, addressing any gaps as necessary. Stakeholder input could include work carried out by other bodies under legislative or regulatory requirements such as planning approvals under local government processes or regional planning processes.

Relevant background information to support and encourage stakeholder participation in developing forest management planning might include provision of relevant information about the defined forest area /forest, its values and proposed management.

It is recognised that forest managers cannot ensure the participation of all relevant stakeholders in the forest management planning process. Forest managers will need to document that diligent efforts were made to engage stakeholders in an appropriate way.

It is also recognised that planning processes can raise issues and concerns outside the scope of the forest managers' responsibility or control. Clear articulation of the operating rules, particularly regarding the scope of the forest management planning process, will assist in demonstrating appropriate management of this issue.

A-4.2.3 Good neighbour

GUIDE TO VERIFICATION

The intent of this requirement is to encourage forest managers to be good neighbours by providing relevant information and notification of operational activities to adjacent landholders and regular users of the defined forest area, and seeking outcomes that minimise adverse impacts.

Type of requirement

Document-based evaluation and interviews with neighbours and regular users

Basis of assessment

That forest managers have communicated and consulted with neighbours on forest management operations that may have an impact on adjoining lands.

That every reasonable effort is made to resolve conflicts and contentious issues through fair consultation or appropriate conflict resolution techniques to achieve agreement or consent.

Indicators

List of adjoining landholders and land managers.

Records of communication/consultation with neighbours and regular users, including those relating to the identification and handling of disputes and grievances.

GUIDE TO IMPLEMENTATION

Assessing and controlling the impact on neighbours and regular users

Planning to assess the possible impact of forest operations on immediate neighbours, their property and assets, and regular users, access (for legal and traditional uses) is good practice. Once the impacts are identified, appropriate operational controls can be developed to manage the identified risks.

Forest management operations that could adversely impact on neighbours and regular users include:

- Fire management, including regeneration and hazard reduction burning (e.g. smoke haze and fence damage).
- Application of pesticides (e.g. spray drift and water quality).
- Animal pest control including baiting (e.g. non-target species).
- Harvesting and associated operations (e.g. visual amenity, noise and water quality).
- Roading and other infrastructure(e.g. dust and noise).

Ongoing communication

Notifying neighbours and regular users of proposed operations provides a high level of transparency through which stakeholders can gain confidence in the forest manager, leading to an ongoing working relationship. Even if the operations are unlikely to cause an unacceptable impact, it is good practice to keep neighbours and regular users informed before conducting major activities in the area. It is also necessary that forest managers notify the appropriate regulating authorities of any operations that require their before notification or approval.

Communication with immediate neighbours and regular users can be carried through—

- Letter drops;
- The telephone;
- Permanent or temporary signs located on the defined forest area boundaries;
- Advertisements in local, regional and national newspapers;
- Face-to-face communication or meetings; and
- Consultation with forest user groups, including Indigenous groups.

Resolving disputes

Disputes can result in delays and conflict. The resolution of disputes ensures stakeholders' and the forest manager's needs are addressed and satisfied to some mutually agreeable extent. Conflict resolution can often be difficult to achieve and, in some instances, may not satisfy all parties; however, genuine attempts to resolve conflicts is an essential part of any forest management system.

Procedures for dealing with complaints and disputes might cover:

- Identification and recording of complaints and disputes received (e.g., a complaints register).
- A mechanism for substantiation of complaints and disputes and identification of immediate and longer-term corrective and preventative actions.
- Documentation of agreements reached to resolve disputes.
- Documentation of corrective and preventative actions taken and assessment of their effectiveness.

The following guidelines may be used in resolving conflicts:

- Ensuring both parties are clear about the issues that are causing the conflict.
- Understanding the other party's point of view.
- Explaining your point of view and providing all the information behind your standpoint.
- Trying to identify areas where either party may be prepared to compromise.
- Using a mediator both parties believe to be neutral.

A-4.3.1 Identify biological diversity

GUIDE TO VERIFICATION

The intent of this requirement is to identify biological diversity values and assess the significance of those values to support their maintenance and protection during the conduct of forest management planning and operations.

Type of requirement

Document-based evaluation with verification in the field

Basis of assessment

That a systematic and documented basis for identifying biological diversity values has been implemented prior to operations/activities being undertaken that have the potential to impact on species or communities.

That listed threatened species and communities relevant to the defined forest area have been identified.

That no systematic or significant omissions are identified.

That assessments of their significance are undertaken.

Indicators

Records of review of biological diversity studies, records and relevant information.

Records of consultation with public land managers, competent professional personnel and relevant stakeholders.

Records of the assessment of significance of identified biological diversity values.

Records of assessment of risk that Significant Biological Diversity Values (see definitions in the Standard) have not been detected, or have been misclassified.

Lists and mapped locations of identified Significant Biological Diversity Values, including assessments of species abundance and habitat condition where possible.

Records of reviews undertaken in light of new information on biological diversity values.

Records of location and area (hectares) and list of Significant Biological Diversity Values (and related habitat).

Records of estimates of the abundance and condition, where applicable, of Significant Biological Diversity Values within the defined forest area.

Records of classification and mapping of the distribution and extent of vegetation and Significant Biological Diversity Values.

GUIDE TO IMPLEMENTATION

Identification of biological diversity values

Biological diversity values include—

- The types of forest types (or ecosystems), communities present and their respective growth stages; and
- The types of terrestrial and aquatic flora and fauna species present.

Information collected on biological diversity values may support their protection and maintenance through decisions that are based on—

- The extent of the value within region and defined forest area (abundance, spatial and temporal distribution);
- Sensitivity to various types of disturbance; and
- Viability of individual expressions (context and shape, history and condition and threatening processes).

Identification and assessment may be carried out over a period of time; however, the results must be available for an area before forest operations can commence. It should be recognised, in the context of this requirement, that new species or information is sometimes encountered during forest operations and 'identification' should be considered an ongoing process.

This information can be collected by internal personnel, external consultants, or experts on behalf of the company/forest manager.

Appropriate actions might also include procedures, including long-term research to actively identify biological diversity values.

Information concerning biological diversity values should be retained as primary evidence on which the company's/forest manager's actions are based and should be recorded on regional plans or other documents used by the company/forest manager to plan future operations. The information retained should include records detailing the avenues of information accessed by the manager in his/her investigations. This should include records of consultation with land managers, experts and relevant stakeholders.

Information on biological diversity values should be reviewed every five years, or over a shorter time period if significant new information is available, such as State of the Environment Reporting and State of the Forest Reporting.

Other appropriate actions might also include:

- Use of public land management agency expertise for advice on values at appropriate scales (regional and site specific where information is available).
- Use of accredited consultants to advise and recommend action on values.
- A cooperative approach to information sharing in a regional context on appropriate values to be protected and maintained.

Assessment of significance

An assessment must be carried out to determine the significance of the biological diversity values (see definitions in the Standard).

The findings of the analysis should be documented, along with the sources of information investigated, even if no information was identified.

Sources of information

The identification and assessment of biological diversity values on a bioregional basis is a desirable basis for planning assessment; however, it is recognised that data that transcends individual ownerships is typically only available on a regional basis.

Use can be made of existing information to determine the level of biological diversity in a region in which a forest manager is operating. Sources of information that may be utilised include:

- Lists of threatened species and communities in the region.

- Biological diversity surveys and assessments undertaken by, or for the forest manager.
- Information and advice from public land management agencies.
- Regional scientific studies and reports such as the biodiversity assessments undertaken for the Comprehensive Regional Assessments during the Regional Forest Agreements (RFA) and regional vegetation management plans.
- Work carried out by other bodies/organisations under legislative or regulatory requirements.
- Relevant databases, atlases and maps and Geographic Information Systems coverage.
- Comprehensive Adequate and Representative forest reserve system requirements.
- State and regional biodiversity strategies.
- Information collected during the consultation process with regulators, the various level of government, interest groups, recognised experts and individuals local experts and stakeholder groups.

A-4.3.2 Permanent forest estate

GUIDE TO VERIFICATION

The intent of this requirement is the following:

To contribute to the maintenance of an extensive and permanent native forest estate, acknowledging (as a general principle) that conversion of native vegetation, while sometimes justifiable in limited circumstances for forestry operations, has adverse impacts on biological diversity values.

The forest manager should not convert native vegetation on the defined forest area to plantation forest cover or a non- native vegetation cover. The requirement acknowledges that limited conversion may be allowable under specific circumstances including small-scale (up to 40 hectares) native vegetation clearing activities intended to provide some flexibility for plantation configuration in larger operations. Clearance of contiguous 40 hectares areas in smaller operations, simply to increase the available area of plantation development, would be considered against the spirit of this requirement. Offsets are required for small-scale clearing of native vegetation.

To ensure the maintenance of a permanent forest estate by requiring the forest manager avoid native vegetation clearance for conversion to plantation on the defined forest area. Any land clearance in this context refers explicitly to conversion of native vegetation to another forest land use or non-native vegetation cover. It does not include the harvesting and regeneration of native forests.

Type of requirement

Document-based with verification in the field

Basis of assessment

That the impact of any small-scale conversion of native vegetation on Significant Biological Diversity Values is identified and a risk assessment is undertaken which includes appropriate technical expertise, and appropriate offsets are identified and implemented.

That the forest management plan or equivalent instrument covers any small-scale conversion of native vegetation within its scope and objectives.

That such scope and objectives are consistent with the limited circumstances outlined in the requirement.

That expert assessment of altered or degraded land and appropriate offsets are available, where conversion of degraded land is undertaken and appropriate offsets identified.

That relevant legislation/regulations/approvals have been appropriately obtained.

That impact assessment and monitoring processes confirm that Significant Biological Diversity Values have been protected.

That the currency of legislation/regulations/approvals is confirmed and that relevant approvals are in place before commencing work.

That a register of 'transition' lands for which third party property rights exist has been prepared which details the location of the properties involved, the nature of such contractual rights (including date of signing), and the area of native vegetation clearing involved.

Indicators

Use of baseline studies of Significant Biological Diversity Values such as biodiversity reports from the Comprehensive Regional Assessment process, regional land use, vegetation or catchment management plans, and schedules from relevant threatened species legislation.

Plans and operational procedures identifying the location of Significant Biological Diversity Values that have been excluded from clearing of native vegetation.

Clear directions in the scope and objectives of the forest management plan or equivalent instrument on avoidance of native vegetation clearance.

Records of identification and risk assessment of potential impacts on native vegetation and Significant Biological Diversity Values.

Approvals obtained from relevant regulatory bodies for specific conversion of native vegetation and reports from those regulatory bodies on the forest owners' compliance with those approval conditions

Records of area of native vegetation cleared/converted and of areas excluded from clearing/conversion of native vegetation.

Records of the expert assessment of altered or degraded land, vegetation type and quality and identifiable offsets, and records of consultation with stakeholders, relevant state agencies and appropriately qualified scientists.

Records of appropriate offsets with statements on the Significant Biological Diversity Values contained within the offsets.

Records of how offsets will achieve a net gain in biodiversity in the landscape to compensate for the biodiversity loss from conversion.

Records of the offset risk assessment by suitably qualified technical experts used to assess net environmental benefits.

GUIDE TO IMPLEMENTATION

The specific circumstances in which requirement 4.3.2 of the Standard allows for native vegetation clearance are limited to clearing for infrastructure (not requiring offsets) and small-scale clearing for plantation design flexibility (requiring offsets). The following is

designed to help identify the situations in which clearing may be considered appropriate under the two circumstances in requirement 4.3.2 of the Standard.

Infrastructure

In this circumstance, there are two components:

1. The conversion of native vegetation on the defined forest area relates to the necessary infrastructure required by the forest manager to implement the approved forest management plan or equivalent instrument to ensure a sustainable enterprise. In this context, infrastructure can be considered as roadworks and associated structures, powerlines, buildings, permanent fences, fire towers, quarries, communications facilities, research plots, fire protection measures (helipads, boundary clearing breaks, internal cleared breaks), walking tracks or other relevant activities especially for occupational health and safety or public safety activities that is associated with the forest manager's approved forest management plan or equivalent instrument.
2. Infrastructure could also be related to Commonwealth, State or Territory legislation or regulation which empowers Governmental agencies or their authorized agents to undertake necessary clearing for national or State/Territory infrastructure development, for example, for essential public purposes—highways, powerlines, gas pipelines, communications or defence facilities.

Such conversion of native vegetation would not be considered to be part of the area under small-scale clearing.

Small-scale clearing

In this circumstance, the conversion of native vegetation within the Defined Forest Area may relate to small areas, no more than 10% of a single forest management unit, up to a limit of 40 hectares per certificate period. Under such circumstances offsets should be identified and implemented to ensure the maintenance and enhancement of a permanent forest estate. This small-scale clearing is intended to provide for both flexibility and rationalisation, and not for sequential conversion, which over time would constitute broadscale conversion of a significant part of the defined forest area.

For the purposes of defining 'small-scale clearing', a single forest management unit would usually be defined as the paddock, coupe, or property, (a discrete, contiguous forest managed by one owner, manager, or agency) not the total Defined Forest Area. The paddock, coupe or property would be in the tens or hundreds of hectares. Conversion within the single forest management unit would be described within the relevant operational instrument such as an approved forest practices plan, plantation operational plan or coupe plan.

Examples of this circumstance are as follows:

- Boundary rationalisation for the planting of an already essentially cleared property which will be offset by protection of reserved areas or rehabilitation of adversely impacted areas – an area of up to 10% of the property development may be justified.
- Conversion of altered or degraded land as a means to ensure a permanent forest estate.
- Consolidation of plantation areas to fit into a visual or aesthetic plan for the middle and distant landscape values of the defined forest area.

Such conversion of native vegetation should have, as a countervailing action for the activity, an appropriate environmental offset.

Offset criteria

Offsets provide an opportunity for a net gain in biodiversity in the landscape to compensate for the biodiversity loss from small-scale clearing. Small-scale clearing should be tested via

an offset mechanism that effectively balances the environmental outcomes of the conversion for relevant environmental values. Offsets should be based on clear and transparent risk assessment criteria and appropriate technical expertise. Three environmental values should be addressed; vegetation conservation status, vegetation landscape value and vegetation site quality and extent. Offsets are considered to have a net environmental benefit if—

i. offsets are in vegetation types of equal or greater conservation status to the vegetation proposed for conversion; and

ii. improvement in landscape value (the configuration of vegetation) from the offset exceed the losses in landscape value brought about by conversion; and

iii. improvement in vegetation site quality and quantity from the offset exceed losses in site quality and quantity from the conversion for the duration of the impact.

The following principles provide guidance in the development of offsets:

i. An environmental offset package should address both direct offsets and contributing offsets.

ii. Environmental offsets should ideally be 'like for like or better'.

iii. Positive environmental offset ratios should apply where risk of failure is apparent.

iv. Environmental offsets should entail a robust and consistent assessment process through the application of specific technical expertise.

v. Environmental offsets should be clearly defined, mapped, transparent and auditable.

Altered or degraded land

Altered or degraded land refers to land with native vegetation that is unlikely to be viable in the long-term under current management, so an offset that improves the long-term viability of other native vegetation is appropriate. Altered or degraded land includes derived vegetation types, which are vegetation types modified substantially since European Settlement, which have no relatively unmodified analogue. Consequently, in the case where the manager is clearing severely altered or degraded land and identifying appropriate offsets, he/she will not be limited to the conversion of 10% or 40 hectares as described in previous paragraphs.

Altered or degraded land consisting predominantly of native woody vegetation refers to land where the overstorey per cent foliage cover is less than 25% of the lower value of the overstorey per cent foliage cover value for that vegetation type that is not altered or degraded, and less than 50% of vegetation in the ground layer is indigenous species or greater than 90% is ploughed or fallow. Altered or degraded land consisting predominantly of native grassland, shrubland, wetland or herbfield vegetation refers to land where the less than 50% of vegetation in the ground layer is indigenous species or greater than 90% is ploughed or fallow. The overstorey and ground layer should be assessed using a scientifically robust method.

A vegetation type is a unit of vegetation description generally at the classification level of *subassociation* (Level VI) as defined in the Native Vegetation Information System (National Land and Water Resources Audit 2000).

Altered or degraded land includes native vegetation derived from events such as lawful clearing, weed invasion, cultivation and rotational farming practices and which is unlikely to be viable in the long-term under current management. Altered or degraded land does not include native vegetation that has been subject only to natural disturbances such as bushfire, storms, flood, drought or other natural causes. Previously harvested or burnt native forest and other vegetation, in itself, does not constitute degraded vegetation.

This requirement is not intended to prevent the clearing of native forests that have been severely degraded or damaged by the agents described, so as to enable rehabilitation through replanting to native vegetation or an appropriate plantation. It is recognized that the identification and assessment of such altered or degraded land including native vegetation will require suitably qualified persons who can document the baseline of the impact that includes maps showing the type, location and severity of the impacts and who can assist in scoping the rehabilitation process for the implementation by the plantation manager, and identifying suitable offsets in accordance with current offset policies and strategies.

These provisions are intended for an orderly and rapid exit from native vegetation clearing. They recognise that operations in train ort those for which binding contracts involving third-party land or forest owners were in place to December 31 2006, and which cannot be reversed, should be brought to conclusion within an explicit and transparent timeframe. Where operation have not commenced prior to December 31 2006, relevant lands should be detailed on a register made available for audit, which details the nature of the relevant contract, the property legal identifier, the property location and areas of native vegetation clearing involved. A summary of the register of 'transition' lands, detailing the areas of cleared native vegetation, should be published as part of the public audit summary as indicated in requirement 4.2.2 of the Standard.

General

In considering Significant Biological Diversity Values, appropriate actions to safeguard/protect biological diversity values would typically require the input of a suitably qualified scientific expert, and may be specified in operating guidelines or similar instructions which contain procedures for protecting retained native vegetation during forest operations.

A-4.3.3 Significant biological diversity

GUIDE TO VERIFICATION

The intent of this requirement is to ensure that forest managers utilise appropriate management practices in defined forest areas to protect and maintain Significant Biological Diversity Values.

Type of requirement

Document-based with verification in the field

Basis of assessment

That identified Significant Biological Diversity Values are considered and included in forest management planning processes for their protection and maintenance during forest operations.

That forest management plans (or equivalent instruments) and forest operations programs are consistent with relevant management prescriptions and guidelines for biodiversity conservation, and recovery/action plans (or equivalent instruments), where applicable, have been implemented.

That forest management planning and practices are modified to take account of interim guidelines, specialist advice and existing information for recently listed threatened species and communities.

That the implementation of management practices in respect of Significant Biological Diversity Values is monitored.

That the effectiveness of practices is reviewed and appropriate corrective action taken where problems are identified.

Indicators

Work procedures or prescriptions including management practices from relevant recovery/action plans.

Evidence that ecological expertise and advice is effectively utilised and incorporated into management plans or equivalent instruments and forest operations programs.

Documented management prescriptions and guidelines for the protection and maintenance of Significant Biological Diversity Values that are up-to-date and included in forest management plans or equivalent instruments and forest operations programs.

Records or registers of Significant Biological Diversity Values that are protected and maintained within the defined forest area.

GUIDE TO IMPLEMENTATION

Once the various Significant Biological Diversity Values have been identified, it is necessary for the forest manager to develop plans and procedures that will protect these values and minimise any damage during forest operations.

Appropriate action to safeguard biological diversity values should be specified in forest management plans or equivalent instruments and operational plans and guidelines.

Plans and operational guidelines may specify:

- Areas where forest operations must be excluded or modified to protect or manage for Significant Biological Diversity Values.
- Biological diversity values and features that must be maintained or managed for in the operating area during forest operations. These may include dead wood, hollow-bearing trees, remnant old-growth, and rare trees that represent Significant Biological Diversity Values, provide important habitat for a range of species, or contribute to the natural structure and function of the ecosystem.
- The procedures and practices that will be used to protect the Significant Biological Diversity Values, including references to additional plans and procedures.
- The monitoring that will be carried out to assess the effectiveness of the forest management plan and work practices in protecting the Significant Biological Diversity Values.

It should be noted that protecting and maintaining a Significant Biological Diversity Value does not necessarily mean that every individual within the community or group of interest needs to be protected. Protection decisions might be based on—

- Extent of the value within region (abundance, spatial and temporal distribution);
- Sensitivity to various types of disturbance; and
- Viability of individual expressions (context and shape, history and condition and threatening processes).

Plans and procedures developed to manage and maintain the Significant Biological Diversity Values will, as a minimum, need to comply with legal requirements relevant to the defined forest area. Appropriate safeguards for the protection and maintenance of

threatened species and communities are specified in recovery/action plans developed under Commonwealth and State and Territory legislative processes; however, it is recognised that development of recovery/action plans for new listings can take time and that, in the interim, practices should be modified to take account of known information and specialist advice.

Appropriate safeguards might also include assuming the presence of threatened species and communities where scientific data indicates their presence is likely or taking appropriate steps to determine presence or absence to a level of certainty appropriate to the scale and intensity of operations.

Scientifically based flora and fauna survey and monitoring methods are routinely used by State agencies or by flora and fauna experts and may be adopted or modified by forest managers to identify and monitor Significant Biological Diversity Values. Forest managers may consult or seek advice from State agency staff or qualified experts on effective monitoring requirements and their implementation. Methods should permit trends of change in the location, abundance and condition of Significant Biological Diversity Values to be measured over time for determining management outcomes and the effectiveness of forest management practices in relation to this requirement. Monitoring of indicator species will necessarily be limited by practicality and cost considerations.

Sources of information

Additional guidance for the protection and maintenance of Significant Biological Diversity Values can be obtained from:

- Codes of practice, prescriptions and protocols.
- Licences issued for biodiversity conservation.
- Survey and monitoring methods developed by State agencies.
- State agency staff.
- Experts or recognised consultants knowledgeable in the protection and/or monitoring of the Significant Biological Diversity Values in question.

A-4.3.4 Spatial configuration

GUIDE TO VERIFICATION

The intent of this requirement is to contribute to a mosaic of diverse habitat types at the regional level which aims to enhance regional biodiversity values in the long term.

Type of requirement

Document-based with verification in the field

Basis of assessment

That forest management planning and forest operations take into account fragmentation and connectivity of forest cover and a mix of growth stages of existing native vegetation.

That plans demonstrate an intention and strategy to maintain or enhance spatial forest cover of native vegetation in accordance with regional biological diversity priorities.

That plans demonstrate a strategy to achieve a mosaic of growth stages at the regional scale in accordance with regional biological diversity priorities.

Indicators

Records of monitoring of extent and age and/or growth stage structure of each extant forest type.

Plans that demonstrate an intention to maintain or enhance spatial forest cover in accordance with regional biological diversity priorities and taking account of risk arising from fire and damaging agents.

Plans that demonstrate a strategy to achieve a mosaic of growth stages at the local scale in accordance with regional biological diversity priorities and taking account of risk arising from fire and damaging agents.

GUIDE TO IMPLEMENTATION

The area (hectares), age class and growth stage of forest and its location within the landscape contributes towards the protection and maintenance of Significant Biological Diversity Values. The need to establish and/or maintain forest cover and consider its spatial configuration will depend on the impact forest operations could have on the Significant Biological Diversity Values present in both the defined forest area and in the surrounding region. The magnitude of the impact will likely depend on the size of the operations being conducted. Appropriate actions might include:

- Providing links or corridors between dedicated reserves or other protected areas.
- Providing for the temporal and spatial distribution of forest harvesting operations throughout the forest ownership consistent with economic and operational constraints.
- Providing a diversity of horizontal and vertical structures such as uneven-aged stands (consistent with management objectives and forest types).

On medium holdings, this may consist of retention of buffer strips to protect waterways and possibly the establishment of wildlife corridors, where needed.

In some cases, regional strategies or regulatory requirements may already be in place controlling the new wording—remove retain retention of forest types or mixes. In these instances, the forest manager is obliged to comply with these requirements. Where regional priorities and strategies have not been established, forest managers might consider priorities based on maintaining important elements of forest structure and growth stages over time within the defined forest area.

Changes in the mix of forest type, cover and structural growth stages (such as through unplanned fire or other catastrophic events) should be reviewed in relation to their impact on the protection and maintenance of Significant Biological Diversity Values and taken into account during the forest management planning process and reviews of forest management performance. The results of the monitoring should be used to update the forest management plan (or equivalent instruments), if required. Aerial photography, ground survey recording and mapping may be used to provide the information required.

Sources of information

Assistance in determining the need for and the correct type of forest configuration and type can be obtained from—

- State agencies;
- Forest management plans (or equivalent instruments);
- Regional biological diversity plans and strategies;
- Regional environmental planning schemes (or equivalent instruments); and

- Experts or consultants knowledgeable in the area.

This requirement lends itself to utilising the sources of information, especially resource information, developed in accordance with requirement 4.4.1 of the Standard for an integrated assessment and the inventory system used to monitor forest harvesting and growth.

The information identified and the sources used should be documented. The findings and conclusions reached concerning the establishment and maintenance of forest cover needs to be reflected in the forest management plan (or equivalent instruments) and related procedures. Forest management plans (or equivalent instruments) may include a record of the forest age class, growth stage and structure.

A-4.3.5 Regeneration establishment

GUIDE TO VERIFICATION

The intent of this requirement is to ensure that regeneration of native species after harvesting approximates the composition and distribution of forest types that existed naturally prior to harvesting.

Type of requirement

Document-based evaluation with verification in the field

Basis of assessment

That planning for native forest regeneration is included in forest management plans or equivalent instruments.

That where reasonably practicable forest reproductive material is from a species and provenance native to the defined forest area or from an equivalent locality.

That natural regeneration processes are utilised for regenerating the site where appropriate.

That procedures are in place and implemented to ensure, in so far as is economically possible and practicable, that the composition and distribution of regeneration approximates that prior to harvesting.

Indicators

Forest management plans and equivalent instruments.

Records of pre- and post-harvesting surveys.

Record of assessment of circumstances that would justify the use of species and provenances either not native to the defined forest area or not from an equivalent area.

Records of assessment of the likely original composition and distribution of dominant species.

GUIDE TO IMPLEMENTATION

An important aspect of regenerating native forests after harvesting is consideration of the local gene pool and species patterns. This requirement is most relevant to clearfall-seed operations and supplementary plantings within native forests to rehabilitate compacted areas such as landings or temporary roads/tracks; however, the requirement is not relevant to areas converted to plantation in accordance with requirement 4.3.2 of the Standard.

In order to fulfil this requirement, it will be necessary to identify the composition and distribution of species before harvesting. In general this information might be drawn from vegetation type maps, inventory plots and pre-harvest site inspections. In most cases pre-harvest surveys to precisely establish the species composition would not be required unless species of high conservation significance or uncertain regenerative capacity were likely to be present. Consideration could also be given to an assessment of the likely original composition and distribution of dominant species where past practices have altered the species mix.

Species that are not native to the area may be planted if suitable local seed is not available or if replanting needs to occur promptly. In either instance, species that simulate or approximate original biological diversity should be selected. The justification for the use of species and provenances either not native to the area or not from an equivalent area might address issues such as—

- Availability of appropriate reproductive material (such as in regenerating large areas following wildfires);
- Timing to ensure prompt regeneration, particularly for prompt rehabilitation of compacted areas; and
- Weather conditions influencing regeneration success.

Relevant records might include—

- Harvesting plans – type and extent;
- Fire history – extent and severity;
- Seed collection and provenance records;
- Seeding records from nurseries; and
- Regeneration surveys at regular intervals following commencement of monitoring.

The organisation's regeneration procedures should be documented, along with harvest plans, initial surveys, locations where seed has been collected, other sources of seed and root stock and regeneration surveys.

Regular monitoring of areas that have been regenerated is desirable to assess the success of the forest manager's efforts. Requirement 4.4.4 of the Standard also addresses regeneration of native forests, but focuses on effectiveness of regeneration to ensure that productive capacity is maintained. Specifications for the assessment of regeneration could incorporate specifications for assessments under requirements 4.3.5 and 4.4.4 of the Standard. Specifications for assessing regeneration in relation to composition and distribution might address—

- Whether dominant tree species in the pre-harvest stand are represented as seed-trees or in seed applied post-harvest; and
- Whether propagules of off-site species were applied post-harvest.

Intensity and frequency of regeneration sampling will be determined by forest type and silvicultural practice in accordance with the relevant specification for effective regeneration.

A-4.3.6 Spread of introduced species

GUIDE TO VERIFICATION

Not relevant to native forest.

A-4.3.7 Disturbance regimes

GUIDE TO VERIFICATION

The intent of this requirement is to support the use of fire and other disturbance factors, where periodic disturbance is an integral part of natural ecosystem structure and function, to maintain and enhance the biological diversity of native forest ecosystems.

Type of requirement

Document-based evaluation with verification in the field

Basis of assessment

That the need for a disturbance regime is assessed and evaluated for application.

That where appropriate, disturbance regime options (including traditional burning practices where known) have been identified and evaluated.

That an appropriate disturbance regime is implemented.

That the effects of the disturbance regime are monitored, records are maintained and there is a process of regular review to ensure that the disturbance regime is effective and appropriate.

Indicators

Records of assessment of circumstances to justify a disturbance regime.

Records of assessment of options for disturbance regime.

Plans for implementation of a disturbance regime.

Records of monitoring and assessment of effectiveness of the disturbance regime.

GUIDE TO IMPLEMENTATION

Disturbance factors and regimes may be used to promote a diversity of species, a mosaic of habitat types and successional stages of appropriate scale in the landscape (including a diversity of both horizontal and vertical vegetation structures), to promote species regeneration, and to help maintain functional processes upon which biological diversity of native forest ecosystems are dependent. Fire and other disturbance regimes may also be a tool to achieve desired outcomes under a number of the forest management performance requirements (see also requirements 4.5.3 and 4.4.6 of the Standard).

When considering the use of disturbance regimes, the risk to neighbouring property and forests (e.g. due to uncontrolled fires) should be considered. The size and topography of the area may also affect the viability or benefit of a disturbance regime.

It is recognised that disturbance regimes may not to be necessary or may indeed be detrimental in some ecosystems (see also requirement 4.5.3 of the Standard), for example, rainforest and some native conifer stands. Therefore, careful consideration of the need for disturbance regimes is required for sustainable forest management.

Appropriate actions may include:

- Prescribed fire regimes of varying intensity, frequency, season of occurrence and spatial pattern.
- Utilising traditional management systems, including traditional burning practices, which have contributed to the development of significant biological values.
- Mechanical disturbance of the forest floor.
- Thinning and harvesting regimes.
- Manipulation of understorey species.

Monitoring is desirable, to assess the success or otherwise of the disturbance regime used to assess trends of change and develop appropriate responses when the disturbance regime is reviewed for effectiveness. The forest manager should use the results of the reviews to decide whether the disturbance regime has achieved the stated aims.

Records of the following should be maintained:

- Assessments carried out to determine the applicability, method and aim of various disturbance regimes, as well as associated risks.
- Procedures followed to implement the disturbance regime and minimise any risk or potential damage previously identified in the assessment.
- Monitoring to assess the success of otherwise of disturbance regimes and trends.
- Any decisions to change the disturbance regime and reasons for the change.

Sources of information

Appropriate sources of information may include—

- Species and community management prescriptions, including threatened species recovery or action plans;
- Species silvicultural and ecological notes/guidelines;
- Research studies and reports on the effects of disturbance regimes on species, communities and ecosystems;
- Scientific research organisations (e.g. CSIRO and universities);
- Public conservation management agencies; and
- Regional studies, such as the biodiversity assessments (e.g. response to disturbance), undertaken for the Comprehensive Regional Assessments during the Regional Forest Agreement process.

A-4.4.1 Identify productive uses

GUIDE TO VERIFICATION

The intent of this requirement is to ensure that forest management is cognisant of the need to sustain the land's capacity over the long term to produce wood and non-wood products subject to legitimate uses, which in many cases, provide an economic benefit.

Type of requirement

Document-based evaluation

Basis of assessment

That existing productive uses of the defined forest area have been identified.

That a resource inventory and mapping system, and periodic monitoring of the resource appropriate to the nature and scale of operations is established and maintained.

That forest growth and yield estimates for designated wood products are undertaken.

That the accuracy of growth and yield estimates is known and appropriate to the scale and intensity of operations.

Indicators

Records of assessment of the productive capacity for existing wood and non-wood products.

GUIDE TO IMPLEMENTATION

This requirement focuses on the traditional/tangible products from a forest ecosystem as other ecosystem services, such as watershed functions or carbon emissions, are dealt with under other requirements (Criteria 6 and 7 of the Standard).

Wood and non-wood products might include—

- Sawlogs, veneer logs, pulp or residue logs, roundwood preservation material, poles, piles and girders, mining timber, post/fencing timber, and firewood; and
- Wildflowers, tree ferns, honey, grazing, extractive materials, forest foods eg berries, mushrooms, bush foods/tucker and medicines, game and seeds.

It is recognised that maintenance of the land's capacity to produce wood products inherently provides for the maintenance of the land's capacity to act as a carbon sink.

Appropriate actions might include:

- Statement of intent for productive forest uses.
- Recognition of inherent site factors which affect productive capacity.
- Development and monitoring of a productivity index over rotations.

The policies and procedures applicable to corporate and management planning such as business plan, marketing/commercial plan, and/or 'sustainable/marketable yield' considerations might include the identification and consideration of both wood and non-wood products.

Records of appropriate actions could be documented and maintained along with the possible uses identified.

A-4.4.2 Plan operations

GUIDE TO VERIFICATION

The intent of this requirement is to ensure that the forest planning processes required to undertake harvesting of wood products does not jeopardise the long-term productive capacity of the land.

Type of requirement

Document-based evaluation

Basis of assessment

That activities that could affect productive capacity of the forest land are identified.

That planning of forest operations takes addresses identified risks to productive capacity.

That growth and yield estimates are reconciled with production records/standing volume assessments and the recognition that catastrophic loss may from time to time occur.

That the timing of regeneration, silvicultural and harvesting operations are carried out so that the productive capacity of the forest site is not compromised.

Indicators

Forest inventory system including growth or assessment plots.

Recorded information pertaining to the identified aspects of growth and yield.

Forest management plans or equivalent instruments, including strategies (rationale) for annual harvest rates.

GUIDE TO IMPLEMENTATION

The requirement puts emphasis on ensuring that productive capacity is maintained and not compromised, which does not necessarily equate to sustainable yield. Productive capacity is a measure of a site's capacity to produce a range of wood and non-wood products, whereas sustainable yield is essentially a calculated yield for a particular product that can be maintained over time. Forest managers may determine sustainable yield as a basis for the maintenance of productive capacity.

It is recognised that harvesting levels in a particular year are not linked to maintenance of productive capacity, as yield will vary over time according to management strategies. Also harvesting levels will fluctuate in response to market and investment influences, amongst other factors. Strategies for annual harvest rates can encompass this flexibility while conforming to this requirement.

Appropriate actions might include:

1. Identify activities and risks that could affect the future capacity of the area to potentially produce the wood and non-wood products previously identified. These can include—
    - implementation of appropriate silvicultural techniques including harvesting methods and cutting cycle;
    - implementation of environmental controls;
    - soil protection and erosion management;
    - the management of roads and infrastructure;
    - use of chemicals;
    - fire management and protection; and
    - management of pests and diseases.

2. Developing and implementing forest management plans (or equivalent instruments) and procedures to address the identified risks. This process should include the documentation of projected yields. It should be noted that yields may vary substantially from year to year and may be affected by market forces (see also requirement 4.1.2 of the Standard).

Monitoring to assess the actual yields over a cycle, against the projections, can support the successful control of risks and ensure that sustainable yields (where relevant) of wood products will be maintained over the long term.

A-4.4.3 Silviculture

GUIDE TO VERIFICATION

The intent of this requirement is to ensure that silvicultural systems are scientifically based and properly planned and implemented so that the present and future productivity, health, vitality and ecological function of forests is sustained.

Type of requirement

Document-based evaluation with field verification

Basis of assessment

That silvicultural methods are appropriate and soundly based on the forest type, the specific stand and site conditions and product and market requirements.

That where silvicultural options are available, such options have been assessed and evaluated for application.

That silvicultural regimes are periodically reviewed and their effectiveness and appropriateness assessed.

Indicators

Manuals, guidelines and operational procedures of silvicultural practices.

Records of assessments of silvicultural options.

Trials of new silvicultural techniques.

GUIDE TO IMPLEMENTATION

The choice of an appropriate silvicultural system or systems for a given defined forest area/forest is an important decision in the pursuit of sustainable forest management.

A silvicultural system can be broadly defined as a set of cultural treatments aimed at achieving specified objectives of forest management. Silvicultural systems are usually named in a manner that describes the spatial and temporal distribution of tree removal at the coupe level. The systems (viz. clearfell, seedtree, shelterwood, selection) all lie on one of two continuums related to the size of the opening (small openings as in single tree or group selection to large openings as in clearfell) or the density of retained trees or overwood (high initial retention as in shelterwood to low retention as in seedtree). It is important, however, to note that this classical terminology should not constrain an innovative approach to silviculture where modified systems may be developed through research and extensive operational experience to meet specific management objectives.

The choice of a silvicultural system is influenced by a number of factors, many of which are not mutually exclusive. These factors may include:

1. Management objectives (for example, whether timber production is a priority use or a minor use).
2. The size of the forest estate/defined forest area (for example, a contiguous forest block of say 10 000 hectares offers more scope to achieve diversity in forest structure at the landscape level than does a small patch of say 10 hectares of fragmented forest).
3. Silvics (characteristics and requirements) of individual tree species. (Eucalypts vary markedly in their silvical characteristics such as flowering cycles, seed production, tolerance to shade from overwood, and response to exposure. Failure to take account of silvics, particularly in mixed eucalypt species forests, has in the past led to failed regeneration or altered species composition due to the application of inappropriate silvicultural systems.)
4. Occupational Health and Safety (OH&S) issues. (Working in forests is inherently hazardous and felling single trees or small groups of trees in tall forests is particularly dangerous, it being far safer to fall trees from an established ‘face’. Worker safety and related OH&S issues have until recently been largely ignored when determining appropriate silvicultural systems for many forests in Australia.)
5. Condition of forest. (Many forests have been affected by pests, pathogens, wildfire and other agents with the result that they now have low future capacity for quality wood production. This constrains the choice of silvicultural systems if timber production is a priority future use.)

   NOTE: A form of single tree selection commonly termed ‘sawmillers' selection’ was often practised in some Australian forests in the first half of the last Century resulting in a gradual degrade in the quality of the residual forests for timber production.
6. Wood quality considerations (Degrade of retained trees due to damage during harvesting or from epicormic growth due to exposure can be significant, and this limits future opportunities for value adding.)
7. Likely yields of products and the current and future markets for those products.
8. Costs and cost effectiveness of different silvicultural systems.

Irrespective of which silvicultural system is adopted, successful regeneration (a key requirement of sustainable forest management) requires a complete analysis to confirm that the following three essential requirements can be met:

1. A receptive seedbed (burnt or soil disturbed).
2. Seed supply. (Viable seeds in sufficient numbers from natural sources such as seed trees or from artificial sources by hand or aerial sowing. Planting is a further option.)
3. Favourable conditions for seedling establishment. (Frost, drought, browsing, etc can cause high mortality of germinants and seedlings, while fertile soils and competition free conditions can promote rapid establishment.)

All of the above issues were considered in arriving at the position adopted on silvicultural practices, as reflected in 4.4.3 requirement of the Standard. 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 if they are soundly based and help meet individual management objectives.

The evaluation of silviculture methods needs to be documented. The evaluation could demonstrate how the silviculture method will optimise production in the defined forest area, while still maintaining it within its long-term sustainable limits. The assessment may also demonstrate additional benefits, such as how the silviculture method complements the management of other areas and assists or improves maintenance of other values described within the Standard.

A-4.4.4 Regeneration (of native forests)/establishment

GUIDE TO VERIFICATION

The intent of this requirement is to ensure specifications for effective stocking are defined and an assessment and monitoring mechanisms are in place, which ensures prescribed stocking levels are achieved.

Type of requirement

Document-based evaluation with verification in the field

Basis of assessment

That an appropriate specification for effective stocking and assessment methodologies relevant to forest type is determined.

That levels of regeneration are assessed in a timely manner for conformance with targets for effective stocking.

That remedial action and contingency plans are developed.

That appropriate remedial action, where necessary, is implemented according to the assessment methodology and in-line with management objectives.

That the timing of regeneration after harvesting facilitates rapid re-occupation of the site.

That a program for the control of potential damage agents to regeneration is in place (see also requirements 4.5.2 and 4.5.5 of the Standard).

Indicators

Specifications for effective stocking.

Assessment methodologies.

Silvicultural prescriptions recognising timing for regeneration.

Regeneration/establishment plans.

Remedial action and contingency plans.

Records of assessments of stocking and of remedial action undertaken.

GUIDE TO IMPLEMENTATION

In the context of this requirement, it is recognised that regeneration may not be desirable after some harvesting operations such as thinning.

The forest manager needs to develop specifications for the regeneration of native forests that will achieve optimal regrowth based on the species being regenerated and the local conditions. The specification might deal with—

- Stocking density;
- Species types; and
- Variation in density over time to allow for thinning operations.

Appropriate actions after harvesting to ensure effective regeneration might include:

- Timing of regeneration to achieve optimum rates of establishment.
- Implementing fauna grazing and browsing damage control programs to facilitate regeneration success.
- Taking any appropriate remedial action to ensure stocking meets prescribed levels.
- Undertaking enrichment planting or other appropriate strategy to supplement the number of seedlings growing in an area or where regeneration is below minimum prescribed levels.

Areas being regenerated need to be regularly monitored to assess whether stocking rates are in accordance with the specifications. Recognised stock assessment techniques may be

utilised for this purpose and the results of assessments to determine stocking levels recorded. If the stocking rates are found not to comply with the specifications, then the forest manager may—

- Carry out thinning operations to reduce stocking rates to the specification;
- Take action to reduce losses from animal damage;
- Take actions to ensure species mix are in compliance with the specification; or
- Carry out additional plantings to supplement loss of seedlings.

A-4.4.5 Damage to growing stock

GUIDE TO VERIFICATION

The intent of this requirement is that forest managers avoid or keep damage to standing trees within tolerable levels during forest operations such as timber harvesting and extraction, non-commercial thinning, chemical application, construction and/or maintenance of roads and stream crossings, and slash disposal and fuel hazard reduction burning.

Type of requirement

Document-based evaluation with verification in the field

Basis of assessment

That mechanical agents of tree damage have been identified.

That operational controls are in place to ensure damage to forest growing stock and immediate environment during forest operations is kept to tolerable levels.

That an appropriate specification for tolerable levels of damage (and its assessment) exists and is quantifiable where practicable.

That procedures are in place to assess and/or monitor damage and ensure corrective action is taken where necessary.

Indicators

Quantifiable levels of tolerable damage to growing stock and designated values.

Records of damage assessment for growing stock and designated values.

Evidence of corrective and preventative actions.

GUIDE TO IMPLEMENTATION

The forest manager needs to identify forest operations that may cause damage to forest stock and therefore affect the health of the defined forest area. Once these potential areas of damage are identified—

- Plans can be developed to minimise the damage including appropriate prescriptions on the type of damage to avoid/minimise and the mechanisms to achieve such might be specified in harvesting or other operational plans;
- Procedures can be developed to prevent or minimise degradation of timber quality during forest operations;
- Specific strategies, such as directional felling and extraction track location, may be specified in harvesting plans;

- A reporting system be developed to assess and report unacceptable levels of damage;
- Procedures implemented to take corrective actions and assess its effectiveness in the event of unacceptable damage; and
- Staff, workers, and contractors are trained in the procedures and reporting system.

Even with the best of care, some level of damage will inevitably occur during forest operations. To determine whether the damage is 'tolerable' or 'unacceptable', specifications need to be developed for each operation that may cause damage. These can be—

- Descriptive specifications, describing the level of damage that is deemed 'tolerable', or 'unacceptable';
- Based on a quantitative amount (e.g. damage per hectare or on a percentage of an individual tree basis); or
- Some combination of the two.

Procedures developed to minimise damage should be incorporated into forest operational plans.

In the context of this requirement, what constitutes tolerable damage from forest operations needs to be considered in the context of the commercial and other values of the defined forest area and the extent and scale of the forest operation.

A-4.4.6 Unplanned fire

GUIDE TO VERIFICATION

The intent of this requirement is to ensure forest managers take effective measures to reduce the extent and impact of unplanned fires and have the capacity to respond at a level appropriate to their resources and the capital at risk in the forest.

Type of requirement

Document-based evaluation with verification in the field

Basis of assessment

That risk factors contributing to the incidence, extent and severity of unplanned fires have been identified and evaluated.

That a forest fire management and control system to protect human life and property and the environment are in place.

That forest managers are contributing to regional fire management planning and the regional fire prevention and control infrastructure (such as, access roads, fire trails, fire towers, helipads) at an appropriate level.

That the fire management and suppression capability commensurate with the forest manager's resources are capable of delivering an effective outcome in reducing the potential damage from unplanned fires.

Indicators

Assessment of regional fire history, cause, origins (including traditional burning practices), incidence, extent and severity.

Assessments of fire risk.

Plans and operational procedures for fire management, suppression and control.

Linkages with regional fire authorities.

Communication/participation with land/fire control managers and other agencies.

GUIDE TO IMPLEMENTATION

In the context of this requirement, for forest managers to ensure an effective regional response, there is a need to provide information to regional fire authorities on the capacity and infrastructure that their organisation possesses and which supports regional fire management and control.

Appropriate actions might include:

- Awareness of regional fire management, and control and response plans.
- Contributing to or participating with local bushfire brigades.
- Development of property management plans or equivalent instruments within the context of regional fire management and control.
- Development and maintenance of fire breaks and fuel-reduced areas within a local and regional context.
- Participation in local fire committees and/or regional fire suppression or policy fora.
- Reduction of combustible forest litter, including accumulated residues after harvesting.
- Development of site-specific fire management, fire control and fire response plans.
- Development and maintenance of fire suppression and detection/surveillance capabilities and resources.
- Fire prevention programs (internal, inter-agency or co-operative programs).
- Encouraging (as agreed with indigenous stakeholders) traditional burning practices where culturally appropriate and consistent with other requirements of the Standard (see Criterion 3 of the Standard and other relevant requirements of the Criterion).

A-4.5.1 Identify damage agents

GUIDE TO VERIFICATION

The intent of this requirement is to ensure that forest managers are cognisant of relevant and potential damage agents, are able to identify such agents in the field and are able to assess and prioritise the impact of an agent in relation to prevention/control measures.

Type of requirement

Document-based evaluation with verification in the field

Basis of assessment

That relevant damage agents have been identified.

That relevant damage agents have been assessed for impact and prioritised for prevention/control measures.

That an appropriate specification for acceptable levels of damage, and its assessment, exists.

Indicators

Records of scientific advice on damage agents from relevant authorities.

List of actual and potential damage agents for the forest region/defined forest area.

Records of assessments of impact and prioritisation of prevention/control measures.

Specifications for acceptable levels of damage.

GUIDE TO IMPLEMENTATION

The identified damage agents, including non-native fauna and flora which may compete with species local to the defined forest area and disrupt the forest ecosystem, can affect any part of the forest ecosystem; therefore, the forest manager must not only include those agents that can affect trees, but also those that affect other fauna and flora within the forest ecosystem. Policies and procedures applicable to this requirement need to be cognisant of the identification and consideration of degraded native forests (see requirement 4.5.4 of the Standard).

Appropriate actions might include—

- Pests, pathogens and weeds identification guides, including their characteristics for field identification, for the potential damage agents specific to forest type, species and locality;
- Assessing the susceptibility of native forest species to pests and diseases; and
- Training of staff in pest, pathogen and weed identification.

Identifying damage agents

When identifying damage agents, the forest manager must review both the damage agents present in the defined forest area and those surrounding the defined forest area, which could impact on the forest ecosystem some time in the future. Once identified, the damage agents need to be assessed and prioritised, based on the actual or potential damage they may cause. For existing damage agents in the defined forest area, a survey to assess the extent and severity of damage may be required to determine the priority that will be placed on each damage agent. When determining the priority to place on a damage agent, legal requirements (e.g., for declared weeds) need to be considered.

The assessment and findings should be documented and retained by the forest manager, along with maps showing the type, location and severity of damage agents.

Prioritisation of damage agents for prevention/control measures needs to be considered in the context of the economic and other values of the defined forest area.

Sources of information

- Formally proclaimed or declared pathogens, weeds and areas of infestation.
- Surveys of the location, extent and severity of damage agents.
- Plant and animal pests and disease surveys.
- Regional monitoring and control programs.
- Scientific advice (e.g., CSIRO, research institutes, universities).
- Government departments or agencies.

A-4.5.2 Maintain health

GUIDE TO VERIFICATION

The intent of this requirement is to ensure that forest managers take appropriate measures within his/her capacity, to lessen the impact of damage agents on the defined forest area forest.

Type of requirement

Document-based evaluation with verification in the field

Basis of assessment

That a plan and procedures are in place for forest health surveillance.

That an integrated pest management plan is in place for those damage agents that have been assessed as being significant.

That there is an awareness of the Generic Incursion Management Plan for the Australian Forest Sector[1] for new incursions of damage agents.

That procedures for the control or eradication of priority damage agents are implemented according to determined damage thresholds.

That risk assessment and management procedures are in place for protection of healthy vegetation known to be susceptible to damage agents.

That there is no evidence of non-compliance with legislative requirements for pest, pathogen and weed control and management.

Indicators

Assessments of significance of impact of damage agents.

Plans and operational procedures for control or eradication of damage agencies.

Records of consultation with landholders and other agencies.

Participation/support in State forest health committees.

Forest health surveillance and risk assessment program.

Maps or records of the location, extent (hectares) and estimate of the numbers (quantitative or qualitative) or severity of infestation of particular damage agents.

Records of assessment of changes in the extent and severity of damage agents.

Records of review of control procedures where damage agencies are increasing in area and/or numbers and severity.

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[1] *Responding to Incursions—A Generic Incursion Management Plan for Forest Pests and Diseases*. Commissioned and Published by the Forest Health Committee on behalf of the Standing Committee on Forestry. May 2000.

GUIDE TO IMPLEMENTATION

Early detection through surveillance programs of pests, pathogens and weeds, and the capacity for their control and management through professionally trained staff and workers and coordinated responses are considered crucial to the success of control and management of damage agents.

In relation to this requirement, it must be recognised that some problems may predate the certification assessment by many years and the assessment needs to look at evidence of strategies to manage current infestations and to control any further spread and new infestations. It is recognised that control of pests, pathogens and weeds may not, in all instances, be possible.

In the context of this requirement—

- 'Healthy' relates to forest where identified diseases or pathogens are absent, or below determined thresholds;
- Damage agents to be managed may include endemic and exotic weeds, insect and vertebrate pests (including native and feral animals) and pathogens; and
- The focus for weeds is on weeds of national significance, State/Territory and local Government lists of 'proclaimed/declared' weeds.

Appropriate actions to manage current infestations and to control any further spread of new infestations might include:

- Assessing management options for preventing or controlling the spread of pests, pathogens and weeds.
- Developing appropriate thresholds for initiating management actions.
- Participating in cross sectorial initiatives for management of pests, pathogens and weeds (e.g. Rural Lands Protection Boards or equivalent bodies).
- Developing an integrated pest management strategy consistent with principles outlined in the National Weed Strategy and Vertebrate Pest Management Strategy.
- Putting in place procedures for the protection of healthy vegetation, known to be susceptible to important and recognised pests (including feral animals) and pathogens and weeds (e.g. seeking specialist advice where forest operations are planned for healthy forest vegetation or controlling defined forest area access, where necessary).
- Keeping records of pest, pathogen and weed occurrence.
- Monitoring frequency of crown dieback and tree death.
- Co-ordinating activities with neighbours and regular users.
- Documenting the use of control agents and putting in place procedures to ensure their use is appropriate for the purpose intended.
- Consulting with State and Commonwealth agencies, such as the Australian Quarantine Inspection Service, when possible new incursions of exotic pests or pathogens are detected.
- Providing of education and training for staff and contractors in the identification and control of damage agents, e.g. drawing on publications such as '*Forests and Timber: A Field Guide to Exotic Pests and Diseases*'[2].
- Identifying of quarantine areas and boundaries for pathogens (e.g. Phytophthora), both in the field, and on relevant maps.

When developing strategies to control damage agents, the forest manager needs to take the following issues into account:

- The priority that has been placed on each damage agent.

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[2] *Forests and Timber: A Field Guide to Exotic Pests and Diseases* Published by the Australian Quarantine and Inspection Service, the National Office of Animal and Plant Health and the Ministerial Council on Forestry, Fisheries and Aquaculture – Standing Committee on Forestry. Commonwealth of Australia, 2000

- The effectiveness of strategies that may already be in place.
- Whether total eradication of the damage agent is possible, practical or affordable.
- If total eradication is not possible or practical, what is a tolerable level of damage.

The forest manager may consider it prudent to implement a monitoring program that—

- Continually monitors for emergence of new pests, pathogens and weeds;
- Periodically monitors the location, extent and severity of existing damage agents;
- Continually monitors forest condition;
- Assesses the effectiveness of control strategies and procedures; and
- Assesses the effect on the forest ecosystem following major outbreaks or a catastrophic event.

Based on monitoring results, damage agent control strategies and procedures may be amended or augmented if they are not providing an adequate level of control over the damage agent.

Sources of information

- Relevant State Government departments (forestry, natural resources, conservation, agriculture, etc.).
- Consulting experts and specialists.
- Research institutions (e.g., CSIRO, universities).

A-4.5.3 Fire and disturbance regimes

GUIDE TO VERIFICATION

The intent of this requirement is to promote forest ecosystem health and vitality by the use of appropriate disturbance regimes at varying levels within the forest ecosystem, which contribute to natural structures and processes and enhance, stability, vitality and disease resistance capacity.

Type of requirement

Document-based evaluation with verification in the field

Basis of assessment

That the need for a disturbance regime to maintain and enhance ecosystem health and vitality is assessed.

That where assessed as appropriate, disturbance regime options have been evaluated.

That appropriate disturbance regimes are implemented and monitored.

That there is an assessment mechanism to determine effectiveness.

Indicators

Assessment of the need for disturbance regimes and evaluation of options (including understanding traditional management systems/burning practices).

Forest management plans or equivalent instruments including zoning for prescribed levels of fire and other disturbance regimes are in place.

Forest operations are undertaken in accordance with forest management plans or equivalent instruments.

GUIDE TO IMPLEMENTATION

Fire and other disturbance regimes may be important in recycling of nutrients, regenerating and promoting a range of species that contribute to ecosystem structure and function, controlling both noxious and environmental weeds and decreasing the potential for outbreaks of pathogens, insects and disease in litter. These regimes may be a tool to achieve desired outcomes under a number of the forest management performance requirements.

The maintenance of health and vitality of ecosystems can be facilitated by managing for balanced composition, distribution, and structure and function of forests including genetic, species and structural diversity, and might be covered by the following:

- Establishing and maintaining spatial configuration of forest cover and growth stages (see requirement 4.3.4 of the Standard).
- Protecting and maintaining biological diversity values through the regeneration of native forests (see requirement 4.3.5 of the Standard).
- Using managed fire regimes (see requirement 4.3.7 of the Standard).
- Reducing the environmental impacts through management and control of unplanned fires (see requirement 4.4.6 of the Standard).
- Implementing silvicultural regimes that are appropriate for the forest type, specific stand and site conditions (see requirement 4.4.3 of the Standard).

It is recognised that some disturbance regimes may be detrimental in some ecosystems (e.g. rainforest and some native conifer stands). Therefore, careful consideration of the need for disturbance regimes is required for sustainable forest management based on the species present, their spatial distribution and the topography. The most appropriate disturbance regime then needs to be developed and implemented. Threats to life and neighbouring property due to fire must also be carefully considered if this type of disturbance regime is to be used.

Assessment of the need for a disturbance regime might include consideration of:

- Initial reviews or surveys of the area to determine species present, their interaction and areas where disturbance regimes may or may not contribute to the forest ecosystems health and vitality.
- Scientific studies and reports of effects of disturbance regimes on plant and animal species and communities and forest ecosystem structure and function, which affect ecosystem health and vitality.
- The structure of the forest ecosystem, (specifically the communities present within the forest ecosystem; the function these communities play within the ecosystem and how they affect the ecosystem's health and vitality; and how possible disturbance regimes will affect these communities and eventually the ecosystem).
- Regional studies such as the biodiversity assessments undertaken for the Regional Forest Agreement process.
- Ongoing research into disturbance regimes and appropriate recommendations for forest management.

Appropriate actions might include:

- Assessing the ecological requirements of forest for a disturbance regime to maintain health and vitality based on the criteria listed above.
- Assessing and evaluating all management options for protecting and maintaining forest ecosystem health and vitality.
- Balancing the pressure of animal populations and grazing on forest regeneration and growth as well as on biodiversity to avoid negative environmental impacts.
- Implementing an appropriate disturbance regime that is practicable and affordable.
- Gaining an understanding of the practices of traditional pattern burning, and involvement of indigenous groups in formulating disturbance regime.

The forest manager may consider implementing periodic surveys to check on the forest ecosystem's health and vitality. The impact of the disturbance regime may be assessed to determine whether it is achieving the initial objectives, or whether the disturbance regime may need to be amended, augmented or terminated.

Sources of information

- Public agency expertise, especially research sections.
- Use of accredited contractors or consultants.
- A co-operative approach to implementation with other forest owners and/or public agencies.

A-4.5.4 Rehabilitate degraded forest

GUIDE TO VERIFICATION

The intent of this requirement is to promote rehabilitation of degraded or damaged forests to return them to an acceptable standard of health, structure and stocking for commercial or non-commercial purposes.

Type of requirement

Document-based evaluation with verification in the field

Basis of assessment

That the impact of damage agents on the defined forest area has been assessed.

That where appropriate, feasible options for rehabilitation are assessed.

That cost-effective and practicable rehabilitation action is implemented.

Indicators

Evaluation and/or assessment of significance and extent of damage to the defined forest area.

Plans and/or operational procedures committing to rehabilitation.

GUIDE TO IMPLEMENTATION

It is recognised that markets for damaged wood, the capacity to fund rehabilitation works and the future worth of the forest once rehabilitated will influence what is reasonably practicable for the forest manager in the implementation of this requirement.

Appropriate actions might include:

- Identifying degraded or damaged forests within the defined forest area and assessing their potential for rehabilitation.
- Considering market capacity for damaged wood.
- Prioritising rehabilitation requirements.
- Developing action plans that are soundly based on research, financial and operational needs and which demonstrate intention to rehabilitate degraded or damaged forests, such as controlling defined forest area access, where necessary, to facilitate rehabilitation.
- Developing specifications for rehabilitation (e.g. composition, stocking rates, reduction of damage agents) required to achieve the desired level of rehabilitation and ecosystem health.
- Consulting and involving volunteer or community groups or Indigenous communities in rehabilitation efforts.

Policies and procedures applicable to forest management planning may facilitate the identification and consideration of degraded or damaged forests and the monitoring of the success of any rehabilitation program.

A-4.5.5 Chemical use

GUIDE TO VERIFICATION

The intent of this requirement is to reduce reliance on the use of chemicals consistent with availability of practical and cost-effective alternatives.

Type of requirement

Document-based evaluation with verification in the field

Basis of assessment

That legal obligations and other relevant guidelines for use of chemicals are identified and assessed.

That use of chemicals is documented, to record precise usage including rationale for use, site description, rate and method of application.

That options or alternative measures to reduce reliance on the use of chemicals have been identified and assessed for effectiveness and cost, and are periodically reviewed.

That forest management planning and operational controls are periodically reviewed to incorporate viable options or measures to reduce reliance on the use of chemicals.

Indicators

Plans and operational procedures for chemical use.

Records of monitoring of chemical usage.

Records of assessment of alternative measures.

Use of environmentally friendly chemicals.

GUIDE TO IMPLEMENTATION

Alternatives measures to the use of chemicals might include safe biological control agents and mechanical methods. Assessment of alternative measures might determine whether they are viable and cost-effective in delivering similar results (for example, in terms of maintaining productive capacity or control of pests) while not increasing risk of adverse impacts or foregoing achievement of critical forest management outcomes. Options and measures to reduce reliance on actual chemical use would also include consideration of operational controls as part of integrated pest/pathogen management systems.

It is recognised that in the context of this requirement that the use of a fertiliser regime in native forests is generally not favoured unless justification and benefits for its adoption including a risk assessment have been undertaken by the forest manager.

Appropriate actions might include:

- Considering the in situ environmental impacts in the assessment of chemical selection for use.
- Ensuring awareness of relevant regulatory requirements for chemical use and manufacturers' instructions and guidelines.
- Making decisions about types of chemicals that the forest manager will not use based on assessments of toxicity, bio-accumulativeness and persistence such as the WHO type 1a and 1b chlorinated hydrocarbons.
- Documenting the use of chemicals, including rationale for use, site description, rate and method of application.

- Avoiding chemicals and application methods with high risks of non-target impacts.
- Implementing nutrient management and alternative weed management strategies.
- A chemical use strategy which reduces reliance on less environmentally friendly chemicals in favour of more environmentally friendly chemicals.

A-4.6.1 Identify soil and water values

GUIDE TO VERIFICATION

The intent of this requirement is to ensure that forest managers are cognisant of relevant and potential soil and water values of management concern, are able to identify such values in the field and are able to assess the impact of the values in relation to prevention/control measures.

Type of requirement

Document-based evaluation with verification in the field

Basis of assessment

That relevant soil and water values of management concern have been identified.

That appropriate specifications for acceptable levels of concern for relevant properties, and their assessment, exists.

Indicators

List of identified soil and water values that can be adversely affected by forest operations.

Records of assessment of soil and water values identified as being adversely affected by forest operations (links with requirements 4.1.2 and 4.1.3 of the Standard).

Forest management plan (or equivalent instruments) that addresses impacts of forest operations on identified soils and water values.

Records of review of regional catchment studies and catchment management objectives to identify significant values and threats.

Records of consultation with relevant land managers and other competent personnel to identify significant values and threats.

GUIDE TO IMPLEMENTATION

In the context of this requirement, the key issues to consider are the impacts that erosion, compaction, contamination and fertility linked to soil structure may have on identified soil and water values.

Appropriate actions might include:

- Systematic assessment of erosion hazard and compaction potential.
- Identification of optimum timing for undertaking forest operations dependent on soil conditions.
- Identification of ground-water recharge zones and saline groundwater.
- Inventory of road waterway crossings.

A-4.6.2 Water quality

GUIDE TO VERIFICATION

The intent of this requirement is to minimise the impact of forest operations on critical water quality parameters beyond the range of natural variation.

Type of requirement

Document-based evaluation with verification in the field

Basis of assessment

That management planning demonstrates a consideration of water quality and regional catchment objectives and incorporates these into management plans or equivalent instruments and operational plans where applicable.

That appropriate action is taken in the field to protect and maintain water quality.

Indicators

Forest management plan or equivalent instruments that identifies waterways, position of riparian zones, buffer strips and protected areas.

Operational plans, codes of practice, operational procedures and programs for minimising soil transport from disturbed areas, maintaining riparian zones and buffer strips, and the design, construction and maintenance of roads and roadway crossings of waterways are in place.

Records of the results of water quality monitoring and research.

GUIDE TO IMPLEMENTATION

Forest operations have the potential to impact on water quality primarily by causing particulates and sediment to enter streams. In some parts of Australia, there is potential for forest operations to impact on stream salinity. The potential for impact on water quality increases with soil erodibility and slope, particularly in areas subject to high intensity rainfall events.

The issue of water pollution from chemical usage and spills is covered at requirement 4.6.5 of the Standard.

In the context of this requirement, roads include roads and tracks both temporary and permanent.

Appropriate action to safeguard catchment and water values might be specified in codes of practice or other operating or environmental guidelines or prescriptions. These could include:

- Water bodies and waterways at high risk of degradation.
- Areas where operations must be excluded or restricted under certain circumstances.
- Features of significance for maintenance of water quality that occur in the operating area that must be protected during forest operations such as ephemeral streams and floodplains or riparian zones and vegetation that enhances soil and water resources (e.g. wetlands).
- Operating conditions for forest operations such as for timing of operations; locating, designing, constructing and maintaining roads; regulating the use of roads; roadway crossings of waterways to recognised standards intended to minimise degradation of water quality.
- Implementing practices to minimise transport of soil from disturbed areas into waterways.
- Assessment of forest land capability class to minimise risk of damage.
- Zonation of forest to take into account features of significance for the maintenance of water quality.
- Matching timber extraction systems to the product, topography and rainfall characteristics.
- Participation in or contribution to regional bodies dealing with catchment and vegetation management.
- Adhering to protective measures specified in codes of practice, legislative instruments and regional prescriptions.
- Adopting the Australian River Assessment System (AUSRIVAS) for rating ecological health of freshwaters by biological monitoring and habitat assessment on the basis of environmental attributes—geographical, physical and chemical features.
- Monitoring water quality and, where consistent with natural conditions, against the Australian and New Zealand Guidelines for fresh and marine water quality (2000).

NOTE: Natural water flows from pristine streams may often exceed the Australian guidelines for freshwater quality, particularly in high-flow conditions.

Sources of information

- Public natural resource management and environmental protection agencies.
- Regional studies (e.g. those by research bodies such as universities and CSIRO and through the RFA process).
- Regional land capability studies or environmental impact assessments.
- State and regional catchment management strategies.

A-4.6.3 Water flows

GUIDE TO VERIFICATION

The intent of this requirement is to promote management planning (primarily for operational activities) that considers relevant actions in relation to the information that is available on streamflow/water yields and seeks to minimise adverse environmental impacts of changes in hydrological flows.

Type of requirement

Document-based evaluation

Basis of assessment

That impacts of forest management on water yield are in accord with appropriately authorised catchment goals.

That appropriate action is taken to minimise unplanned adverse impacts, including risk assessment of uncertain short and long-term disturbances (e.g. fire) that can impact on hydrological flows.

Indicators

Records of review of catchment studies and catchment management objectives.

Records of consultation with relevant land and water managers, specialists in catchment modelling and other competent personnel.

Cooperative arrangements with relevant land and water managers in monitoring of trends in water yields and impacts of forest management activities on water yield.

Maps and other planning instruments.

Records of water yield trends.

GUIDE TO IMPLEMENTATION

In the context of this requirement, it is not required of forest managers to establish regional catchment goals but to respect them where they are developed through appropriate processes.

It is recognised that while the timing and volume of flows are largely beyond the control of forest managers, the distribution of forests and forest operations in a catchment and over time can have an impact on flows. Also forest managers need to recognise the historical variations in streamflows.

Appropriate actions might include:

- Increasing water yield by thinning.
- Providing for the temporal and spatial dispersal of forest harvesting operations throughout the defined forest area.
- Developing best practice operating guidelines to safeguard catchment and water values.

- Maintaining a mosaic of different age classes in a catchment to minimise the chances of particular effects from operations.

Sources of information

- Hydrological, groundwater and soil data from relevant land and water management agencies e.g. public agencies, research institutions and Catchment Management Authorities or equivalent.
- Regional studies (e.g. those by research bodies such as universities and CSIRO and the RFA process).
- Recognised catchment management strategies and plans such as those developed under the National Action Plan for Salinity and Water Quality in Australia (2000).

A-4.6.4 Soil properties

GUIDE TO VERIFICATION

The intent of this requirement is to ensure that the design and conduct of forest operation takes into account the need to maintain the physical, chemical and biological properties of soil and, if suitable situations, arise to improve those properties.

Type of requirement

Document-based evaluation with verification in the field

Basis of assessment

That relevant soil properties are identified and assessed for their significance in relation to erosion hazard and/or compaction potential.

That identified soil properties are considered in the design of forest operations and appropriate action taken during forest operations to protect, maintain and enhance soil properties.

That soil movement is minimised during slash management activities.

That nutrient loss through the removal of nutrients in harvested forest products is minimised.

That actions are taken in forest operational areas to prevent significant soil movement.

That, where required, restoration or rehabilitation of forest operational areas is undertaken.

Indicators

Reviewed regional soil studies for consideration in management planning and implementation of forest operations.

Records of consultation with relevant land managers and other competent personnel.

Recorded known soil properties on maps or other planning instruments.

Records of evaluation of soil damage agents and options to avoid, minimise or correct damage.

Application of codes of practice or other appropriate operational procedures.

Changes in rate of forest growth and yield (linked to Criterion 4 of the Standard).

Appropriately designed and constructed roads, extraction tracks and log landings.

GUIDE TO IMPLEMENTATION

Natural soil capital is vitally important to most ecosystem cycles and functions. Forest soil loss or physical redistribution can lower soil fertility or affect sediment delivery to streams. Changes in physical, chemical and biological properties of soil due to forest management activities can adversely affect soil fertility and thus ecosystem processes.

Protecting natural soil capital includes consideration of—

- Protection of soil structure and fertility;
- Minimising nutrient loss as a result of nutrient take-off due to harvesting and other management operations (e.g. non-burning of logging slash) in so far as the mechanics of the process are understood; and
- Protection of soil stability and provision for erosion control.

To meet this requirement, the forest manager may consider:

- Systematically assessing areas for erosion hazard prior to work commencing.
- Strategies to minimise major soil disturbance within forest harvesting areas.
- Identifying or developing and implementing appropriate codes of practice or operational guidelines or procedures where not already required by legislation.
- Designing and implementing forest operations (including silvicultural techniques, temporary and permanent roadways, extraction tracks and product storage areas) to take account of the topography and specific soil types and qualities known or believed to occur at the site of forest operations and in accordance with relevant codes of practice or equivalent instruments or operational guidelines.
- Strategies to minimise nutrient loss and take-off in harvesting, site preparation and establishment practices.
- Restoring or rehabilitating log landings, extraction tracks, temporary roads and product storage areas in accordance with relevant codes of practice or equivalent instruments or operational guidelines.

In the context of this requirement, zones of major soil disturbance are areas occupied by log dumps, access tracks, fire breaks, temporary tracks used for machinery movement around a coupe and extraction tracks and relates to harvesting activities only.

Minimising soil disturbance, managing water flows, maintaining debris cover or establishing cover crops, as appropriate may minimise soil erosion.

Appropriate action to safeguard soil properties might be specified in operating guidelines which may include:

- Areas where operations must be excluded.
- Features that occur in the operating area that must be protected during forest operations.
- Operating conditions for forest operations and other measures which regulate site disturbance.

Other appropriate actions might include:

- Maintaining the integrity of the litter layer and understorey compatible with natural cycles maintenance of acceptable risk of catastrophic fire.
- Minimising soil re-distribution downslope.
- Maintaining site organic matter and nutrient supplying capacity, particularly through management of slash material.
- Timing of operations in relation to seasonal weather patterns.
- Closing operations in conditions when unacceptable soil damage would occur.
- Ensuring that operational plans consider factors such as harvesting unit size, slope and location; design and location of landings and extraction tracks; harvesting equipment; and areas excluded from harvesting.
- Rehabilitating extraction tracks, temporary roads, log dumps and any other earthworks associated with harvesting operations.
- Assessing erosion hazard based on soil erodibility, rainfall and slope.
- Selecting techniques appropriate to erosion hazard.
- Applying an appropriate nutrient management regime.

Sources of information

- Public land/natural resource management and environmental protection agencies.
- Regional studies (e.g. those by research bodies such as universities and CSIRO and the RFA process).
- State and regional catchment and vegetation management strategies.

A-4.6.5 Pollution and contamination

GUIDE TO VERIFICATION

The intent of this requirement is to promote appropriate management of chemical application activities so that pollution and contamination of soil and waterways is either avoided or minimised and to ensure the proper disposal of any waste.

Type of requirement

Document-based evaluation with verification in the field

Basis of assessment

That legal obligations and other relevant guidelines for preventing or constraining water pollution and soil contamination are identified and assessed for their implications for the forest manager.

That management planning and operational activities demonstrate consideration of water pollution and soil contamination agents.

That appropriate monitoring procedures are in place.

That response and remedial action plans have been developed and implemented where necessary.

That there is no evidence of significant or systematic non-compliance with relevant legislation or codes of practice resulting in water and soil pollution.

Indicators

Records of reviews of legal obligations and other requirements.

Evaluation of polluting and contaminating agents and options to avoid or minimise damage.

Chemical Code of Practice.

An Environmental Management System (EMS) or equivalent system in place to deal with chemical usage.

Existence of remedial action plans.

Results of monitoring.

GUIDE TO IMPLEMENTATION

To meet this requirement, the forest manager could consider:

- Preventative and corrective procedures to prevent spills and overspray from chemicals entering waterways and to contain spills and minimise overspray.
- Measures to minimise the risk of chemicals from planned applications being transported into waterways.
- Measures to ensure transport, storage, transfer and disposal of fuels, lubricants and chemicals is undertaken in such a way that the risk of water pollution and soil contamination is minimised.
- Prescribed methods for disposal of waste fuels, lubricants and chemicals are in place.
- Response and remedial plans to mitigate water pollution and soil contamination incidents including risk assessments and routine testing are in place.

Within the context of this requirement, risk includes a consideration of both the likelihood and the consequence of the pollution or contamination within the defined forest area.

Appropriate actions might also include:

- Documenting and monitoring use and application of chemicals.
- Routine water testing following use of chemicals in forest operations.
- Consideration of the in-situ environmental impacts in the assessment of chemical selection for use.
- Providing equipment and training for staff and workers, and operators to minimise health and environmental risks.
- Ensuring awareness of relevant regulatory requirements for chemical use and manufacturers instructions and guidelines.
- Ensuring buffers are in place around water ways.

In the context of this requirement, chemicals include—

- Fertilisers;
- Pesticides;
- Fuel and lubricants; and
- Bio-solids.

A-4.7.1 Greenhouse gas emissions

GUIDE TO VERIFICATION

The intent of this requirement is to promote consideration of and a commitment to planning and practice options that reduce greenhouse gas emissions.

Type of requirement

Document-based evaluation

Basis of assessment

That minimisation of greenhouse gas emissions is considered in the planning and management of forest operations.

That any guidelines, procedures and prescriptions to minimise greenhouse gas emissions are documented.

Indicators

Evaluation of consideration of greenhouse gas emissions in planning and management.

Plans, operational procedures, guidelines and procedures to minimise greenhouse gas emissions.

GUIDE TO IMPLEMENTATION

Forest managers might seek to reduce fuel consumption in order to reduce costs and achieve efficiencies in operational activities.

Appropriate actions might include:

- Evaluation of practices to minimise greenhouse gas emissions.
- Evaluation of compliance with National and State policies on greenhouse gas management.
- Evaluation of strategies and options for improving fuel efficiency and reducing fossil fuel consumption.
- Evaluation of opportunities for producing renewable energy.
- Regular servicing of equipment to promote efficiency in use.

Sources of information

Greenhouse gas management strategies or policies, such as the National Greenhouse Strategy relevant to forestry operations and vegetation management.

The Greenhouse Challenge program.

Australian Fuel Efficiency ratings.

A-4.8.1 Indigenous peoples' rights

GUIDE TO VERIFICATION

The intent of this requirement is to ensure that due recognition, acknowledgement and enjoyment of Aboriginal peoples' and Torres Strait Islander peoples' culture is maintained within Australia's natural resources especially the forested environment. It allows for the maintenance of ecosystems based on traditional land use methods, where appropriate to the forest management outcomes of an organisation.

Type of requirement

Document-based evaluation with interview verification

Basis of assessment

That appropriate consultation is initiated or occurs with Indigenous people to identify and acknowledge their traditional knowledge in forest management and use of forest species and other non-wood products.

That where practicable and appropriate traditional knowledge is utilised in the management of forest species and other non-wood products.

Indicators

Records of consultation or invitations to consult with relevant individuals or organisations.

Partnerships or co-operative agreements with Indigenous groups.

Plans and operational procedures referencing Indigenous people's knowledge.

Records of consent to practice and participate in the cultural and traditional customs.

Demonstration of traditional land use methods, as appropriate.

GUIDE TO IMPLEMENTATION

It is in the national interest for a more effective Indigenous heritage protection regime to be in place. This would recognise Indigenous people's ownership of their own heritage and recognise the intellectual property rights inherent in tangible and intangible Indigenous heritage in forests.

In the context of this requirement, the economic aspirations of Indigenous people's does not mean co-ownership of forest resources but relates to the acknowledged support for forest-related economic development (e.g. harvest contracting, tourism, bush tucker), which may involve Indigenous people.

Appropriate action might include:

- Fostering of professional relationships with Indigenous people that can be considered both responsive and flexible to Indigenous needs and as part of an ongoing and continual process.
- Encouraging a significant contribution to decision making by Indigenous people and use of Indigenous knowledge in the protection of the forest environment.
- Recognising Indigenous ownership of wildlife.
- Working closely with Indigenous people to ensure efficient and reliable contacts and communications between parties.
- Understanding and consideration of culturally significant areas and needs noting that Indigenous people within Australia are distinct and may need to be treated on an independent/individual basis.

Sources of information

- Former Aboriginal and Torres Strait Islander Commission (ATSIC) Board of Commissioners and Regional Councils.
- Local Aboriginal Land Councils and Indigenous Coordination Centres.

- The Environment policy of the former ATSIC 1994
- National Indigenous Forestry Strategy (Australian Government Department of Agriculture, Fisheries and Forestry).
- Forest and Timber Inquiry Resource Assessment Commission Consultancy Series 'A review of Aboriginal Uses and values of Forests December 1990' by Scott Cane.
- The Indigenous Land Corporation.

A-4.8.2 Heritage values

GUIDE TO VERIFICATION

The intent of this requirement is to ensure that important natural heritage values and cultural, religious, spiritual and social heritage values and sites are recognised and adequately protected during forest operations.

Type of requirement

Document-based evaluation with field verification

Basis of assessment

That known Indigenous and non-Indigenous natural heritage values and cultural religious, spiritual and social heritage sites and values are identified and respected.

That assessments of their significance have been arranged or have been undertaken where appropriate.

That forest management plans or equivalent instruments and actions take account of those values and sites in implementation by setting aside, protecting from harvesting operations or managing by prescription identified significant sites.

That there has been appropriate consultation and/or collaboration prior to any required approvals being obtained.

Indicators

Policies, operational procedures, guidelines or plans pertaining to values and sites.

Records of review of relevant records and information.

Records of approvals, where required, for forest operations.

Records of consultation with relevant individuals, organisations or forest managers.

GUIDE TO IMPLEMENTATION

Appropriate action by the forest manager to safeguard heritage values might include:

- Collaboration with relevant Indigenous people to facilitate protection of Indigenous values during forest operations.
- Implementation of zoning practices in culturally significant areas so that no degradation or disturbance occurs to highly sensitive regions during forest operations.
- Safeguarding non-Indigenous heritage values through identification of known values and by regularly updating inventories of non-Indigenous heritage values.
- Assessment of the importance of non-Indigenous heritage in the regional context, based on relevant studies and forest planning instruments.
- Identification of important non-Indigenous heritage values by recording on maps or other planning instruments.
- Consideration of important non-Indigenous heritage values in the preparation of forest management plans or equivalent instruments and appropriate actions implemented in consultation with the appropriate bodies.

- Inclusion of procedures to protect heritage values within operational guidelines including management in an appropriate manner to preclude degradation or loss and considering community and volunteer involvement in management of some values.
- Collaboration with heritage and tourism interests to facilitate the protection and enjoyment of heritage values.

In the context of this requirement, natural, cultural and biological heritage values may include trees or stands of special cultural or social significance, such as arboreta, geomorphological features, national estate and landscape, and high scenic quality.

A-4.8.3 Traditional uses

GUIDE TO VERIFICATION

The intent of this requirement is to maintain pre-existing rights to the use of forested lands, especially for legal and traditional uses. Where such uses threaten the integrity of the defined forest area or the achievement of the forest management performance criteria, the forest manager should pursue negotiated outcomes.

Type of requirement

Document-based evaluation with field verification

Basis of assessment

That there has been an evaluation of community traditional uses in conjunction with relevant parties or communities of the existing legal rights or traditional Indigenous and non-Indigenous uses of the forests in relation to the forest manager's activities.

That there is no evidence of unreasonable refusal of access for existing legal rights or traditional uses.

That the rights of local communities to natural resources pertaining to their land are respected and communities participate in the uses, management and conservation of the resources on their land.

That Indigenous peoples control forest management on their land where legal rights apply.

That illegal and other unauthorised activities are identified and reasonable efforts are made to effectively control such activities.

That forest-based recreation and forest-based tourism is permitted in approved areas.

That there has been an evaluation of the impact of existing legal rights or traditional uses of the forests on the integrity of the defined forest area or the achievement of the forest management performance criteria.

That existing legal and traditional uses are on a scale that does not threaten the integrity of the defined forest area or the objectives of forest management.

That disputes over tenure claims and use rights are resolved through legal process.

That conflicts between existing legal and traditional uses and the integrity of the defined forest area or the forest management performance requirements are resolved by negotiation utilising dispute resolution mechanisms identified (see requirement 4.2.3 of the Standard).

Indicators

Records of assessments of significance of impact of legal or traditional uses on the defined forest area.

Agreements for permissive or traditional uses.

Records of approvals for authorised activities.

Records of actions on illegal and other unauthorised activities.

Records of consultation with relevant individuals, organisations and land managers.

Records of dispute resolution outcomes.

GUIDE TO IMPLEMENTATION

A significant area of the public forest estate (including that under private leasehold) may have residual native title and land rights. These issues are a matter of contemporary debate and are yet to be resolved. This requires careful consideration of potential threats to the integrity of the defined forest area or the attainment of the forest management performance criteria.

Appropriate action might include:

- Providing infrastructure and visitor facilities, including access and interpretation displays for forest-based tourism and forest-based recreation, where appropriate.
- Providing reasonable access for traditional Indigenous land users to meet spiritual and cultural needs.
- Providing mechanisms for the communication and notification of requirements for existing legal or traditional uses.
- Respecting the rights of local communities to natural resources pertaining to the land.
- Where there are special demands for further public access for training and public education about forest practices, reasonable efforts are made to meet this demand.
- Ensuring relevant OH&S requirements are recognised in the pursuance of any legal rights or uses of the defined forest area.

A-4.9.1 Regional development

GUIDE TO VERIFICATION

The intent of this requirement is to ensure an appropriate contribution that will benefit and support regional communities with economic and social ties to defined forest area and forest related industries.

Type of requirement

Document-based evaluation and consultation with relevant regional bodies

Basis of assessment

That forest management is cognisant of regional forest industry issues and the practicable opportunities that may flow from such issues having due regard to the role of forestry in rural and regional development and the environmental, social, economic and cultural requirements of the Standard.

That reasonable employment opportunities for regional contractors and suppliers are provided.

That forest managers contribute to the framework of regional communities at an appropriate level.

Indicators

Review of issues and practicable opportunities.

Contribution to regional forest based industries, employment and businesses.

Communication and consultation with regional bodies within commercial constraints.

Periodic economic, environmental and social reporting.

Recreation plans and facilities.

Educational programs.

GUIDE TO IMPLEMENTATION

Appropriate regional bodies might include local Government authorities (Council or Shire) regional development boards or equivalent, Australian Forest Growers chapters, city/town chambers of commerce, farm forestry networks, training or safety bodies, industry/university co-operative arrangements, regional community groups and other non-government organisations, (e.g. Timber Communities Australia).

In the context of this requirement, the framework for regional communities may involve the activities undertaken by a forest manager both within the defined forest area and in the general region, which may not be considered as core activity of the organisation such as visitor and interpretation facilities, educational activities, sponsorship of events and persons, where appropriate.

Appropriate and practicable opportunities might relate to—

- Commercial forestry;
- Development of further local product processing;
- Biological diversity;
- Recreational functions and forest tourism;
- Indigenous enterprises;
- Educational activities; and
- Sponsored landscape and/or environmental rehabilitation.

Appropriate actions might include:

- Participating in or contributing to regional industry bodies and associations (where existing).

- Contributing to flow of forest products to regional industries including new value-adding industries.
- Using regional service contractors, providers and businesses.
- Making reasonable provision of employment opportunities for regional communities.
- Contributing to the planning, establishing and maintaining/maintenance of infrastructure to facilitate efficient delivery of goods and services.
- Promoting consideration of the benefits attributed to forests in the development of regional development plans.
- Contributing to social benefit of forest management.
- Sponsoring opportunities which have economic or social spin-offs.

A-4.9.2 Optimal use

GUIDE TO VERIFICATION

The intent of this requirement is to encourage forest managers to consider opportunities for value adding and procedures to maximise value of production at operational sites, recognising that the market ultimately determines what is a saleable commodity and that forest managers can only harvest for sale what the forest is producing.

Type of requirement

Document-based evaluation with verification in the field

Basis of assessment

That the forest management options for forest products were assessed and strategies/procedures developed, having due regard to the economic, social, environmental and cultural requirements of the Standard, for—

- Value adding to a range of forest products at operational sites;
- Minimising waste resulting from harvesting;
- Optimising production within sustainable limits;
- Contributing to the planning, establishing and maintenance of infrastructure to facilitate efficient delivery of forest products and services whilst at the same time minimising negative impacts on the environment; and
- Avoiding damage to other forest resources and products (see requirement 4.4.5 of the Standard).

That forest managers consider procedures to maximise value of production at operational sites.

That infrastructure for the efficient and effective delivery of forest products and services is established, maintained and protected for the benefits of society.

Indicators

Forest management plan (or equivalent instruments).

Marketing/commercial plan for forest products.

Records of assessment of product opportunities.

Operational procedures for product grading.

Silvicultural practices and long term management plans.

GUIDE TO IMPLEMENTATION

Where appropriate to scale, the right actions might include:

- Ensuring felling and handling of the forest resource are carried out to maximise net log value recovery.
- Allowing competitive access to forest produce for large scale enterprises.
- Providing for small scale and specialist markets opportunities by product specification, pricing and segregation.
- Exploring new and potential markets commensurate with resource estimates.
- Optimising recovery and use of products from operations where economically viable and within environmental constraints.
- Exploring opportunities for local processing of the forest's diversity of products.
- Contributing to the planning, establishing and maintenance of infrastructure (such as roads and bridges) to facilitate efficient delivery of forest products and services.
- Providing opportunities for non-wood products as an integrated component of the output of the forest rotation/cutting cycle.

A-4.9.3 Employment/skills development

GUIDE TO VERIFICATION

The intent of this requirement is for forest managers to provide a commitment to a stable, skilled workforce and to the skills enhancement of the workforce that is involved in the management of the defined forest area.

Type of requirement

Document-based and interview evaluation

Basis of assessment

That there is a commitment to skills development, including multi-skilling, in line with organisational needs and requirements as well as employee/staff and workers aspirations, including contractors and seasonal staff.

That there is commitment to long-term employment relationships, including to contractors and seasonal staff.

That there is reasonable provision of employment opportunities for people in regional communities.

That there is ongoing dialogue with the relevant unions representing an organisation's employees and contractors at an appropriate level.

Indicators

Organisational training and existence of skills and training needs register.

Training opportunities for employees, contractors and seasonal staff.

Human resource policy related to skills development, workforce qualifications and improvement in competency.

Relevance of human resource policy to individual roles.

Training budgets.

Identification and introduction of new technology enhancing skills.

Cross-cultural training for forest workers.

GUIDE TO IMPLEMENTATION

The benefit of ongoing access to both skilled staff and workers and a skilled employment pool needs to be considered when planning activities, given the multiple functions of forests and the seasonal nature of some work (e.g. bushfire season, planting, pruning/thinning, nursery, pests and weed control).

Appropriate actions might include:

- Balancing work program to provide continuity of work.
- Ensuring employment opportunities are open and available to local communities.
- Involvement with industry bodies that promote training and regional development.
- Commitment to increasing labour productivity through skills upgrading and better use of applicable new technology.
- Developing long-term relationships with contractors and seasonal workers and support skills development to provide ongoing access to skilled staff and workers.
- Education and training on relevant Indigenous matters to gain an understanding of appropriate procedures and actions for liaising with Indigenous peoples.
- Using national competency standards as a basis for skills development programs.
- Considering the ILO convention (142) concerning vocational guidance and vocational training in the development of human resources.

Sources of information

Regional education centres (e.g. TAFE or equivalent).

Programs of the former ATSIC.

Government agencies.

Relevant forestry based unions.

Timber industry training authorities or boards (such as Forest and Forest Products Employment Skills Company [FAFPESC] or State Industry Training Advisory Body [ITAB]).

A-4.9.4 Occupational health and safety

GUIDE TO VERIFICATION

The intent of this requirement is to ensure that health and safety requirements are taken into account in the planning, organisation and supervision of forest operations and to provide a safe workplace and safe work practices for staff and workers, including contractors and seasonal employees that are involved in the management of the defined forest area.

Type of requirement

Document-based evaluation with verification in the field

Basis of assessment

That the forest manager commits to occupational health and safety, including rehabilitation where practicable, and the development of reforms to facilitate improvements in workplace health and safety.

That health and safety requirements are taken into account in planning, implementing and supervising forest operations.

That the forest manager has plans or equivalent instruments and actions to meet the occupational health and safety requirements for a workplace.

That there is no evidence of non-compliance with relevant occupational health and safety employment legislation.

Indicators

Safety and health policy statement.

Occupational Health & Safety (OH&S) role in job descriptions of supervisors.

Safety programs for employees, contractors and seasonal staff.

Safety performance (incidence of accidents).

Safety committees or staff and worker awareness programs.

Operator licences/Certificates of competency.

GUIDE TO IMPLEMENTATION

This requirement recognises that the provision of a safe workplace and the development and implementation of safe work practices provides benefits not just to the forest manager and the staff or workers but also provides broader community benefits particularly for families who are dependent on staff and workers.

Appropriate actions might include:

- Putting in place an OH&S policy and practices for staff and workers.
- Systematically undertaking risk assessment and, as a result, identifying hazards and preventative measures.
- Ensuring that all operators are trained to designated industry standards in the safe and efficient use of equipment and machinery.
- All necessary equipment, tools, machines and substances are in safe and serviceable condition.
- Putting in place processes to ensure contractors meet their safety specifications including compliance with relevant safety legislation.
- Putting in place procedures to ensure safety of the general public where relevant.

A-4.9.5 Workers rights

GUIDE TO VERIFICATION

The intent of this requirement is to respect the rights of employees and other workers/staff and workers including their rights to join a union or association in the workplace and equality of employment and treatment for those involved in the management of the defined forest area.

Type of requirement

Document-based evaluation with verification in the field

Basis of assessment

That the forest manager has plans or equivalent instruments and actions to take account of equal employment opportunities for employees/staff and workers and the freedom of association in the workplace.

That the forest manager respects the rights of employees and other workers/staff and workers including their right to form and join a trade union of their choice.

That the forest manager does not discriminate in hiring, advancement, dismissal, remuneration and employment-related benefits on grounds such as age, race, gender, religion or sexual orientation.

That the forest manager carries out collective bargaining with staff and workers and their representatives in good faith and with best efforts to reach agreement.

That there is no evidence of non-compliance with employment legislation and collective agreements in force.

Indicators

Equal Employment Opportunity and other policy statements.

Staff and worker committees or staff and worker awareness programs.

Records of inspections.

Payroll of enterprise and/or contractors.

Findings of employment surveys.

GUIDE TO IMPLEMENTATION

Appropriate actions might include policies and procedures for—

- Respecting the rights of staff and workers to join a union or association without fear of intimidation or reprisal;
- Non-discrimination in hiring, advancement, dismissal, remuneration and employment-related benefits;
- Fair remuneration for staff and workers, including contractors and self-employed;
- Use of grievance and compensation mechanisms (see also requirement 4.2.3 of the Standard); and
- Strict adherence to minimum age provisions of labour laws and avoiding the use of workers under 18 years of age in heavy or hazardous work except for the purpose of training.

Through compliance with labour laws and respect for core International Labour Organisations (ILO) conventions, requirements 4.9.3 to 4.9.5 of the Standard provide a framework for ensuring that workers receive an equitable share of benefits of forest management.

The core ILO conventions identified by the International Federation of Building and Wood Workers are:

- Convention No. 29—Forced or Compulsory Labour
- Convention No. 87—Freedom of Association and Protection of the Right to Organise
- Convention No. 98—Application of the Principles of the Right to Organise and to Bargain Collectively
- Convention No. 100—Equal Remuneration for Men and Women Workers for Work of Equal Value
- Convention No. 105—Abolition of Forced Labour
- Convention No. 111—Discrimination in Respect of Employment and Occupation
- Convention No. 138—Minimum Age for Admission to Employment

NOTES

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[1] Standards Accreditation Board is now known as the Accreditation Board for Standards Development Organisations.

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ISBN 0 7337 8373 2