

Tasmanian Reserve Management Code of Practice 2003



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DEPARTMENT
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Tasmania
DEPARTMENT *of*
INFRASTRUCTURE,
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The Tasmanian Reserve Management Code of Practice

Review of the Tasmanian Reserve Management Code of Practice

The *Tasmanian Reserve Management Code of Practice* will be reviewed at five-yearly intervals and changes will be incorporated to ensure that best practice techniques and approaches to reserve management are incorporated.

In addition, a parallel review of the *Mineral Exploration Code of Practice* is proposed so that the two Codes will be consistent in relation to activities where both Codes apply.

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How to use the Code

The *Tasmanian Reserve Management Code of Practice* (the Code) is divided into four parts. These parts are divided into broad sections that are then sub-divided into subject areas.

Part A, Introduction – provides background information about the Code, where it applies, and importantly, who the Code has been developed for. This part also provides the principles of natural and cultural heritage management and reserve management.

Part B, Guidelines for Activities – is the prescriptive component of the Code to which reserve managers are required to adhere. It provides the ‘rules’ for many reserve management activities. Part B also covers the key elements of activity assessment but does not include assessment procedures. The latter are subject to agency policy and administrative arrangements and reserve managers should refer to these.

Each subject area within Part B has two main components:

GENERAL PRINCIPLES – provides the principles of management, relevant definitions, legislation and sources of information.

BASIC APPROACH – contains the management prescriptions specifying how the principal activities associated with the subject are conducted.

In the Basic Approach there are two types of statement:

- The ‘will’ statement is to be applied in a practical manner to activities undertaken in reserves. Statements of this kind indicate that the action will be implemented without exception.
- The ‘should’ statement indicates the desirable practice for most situations and is to be interpreted by the reserve manager. Statements of this kind indicate that the action is highly desirable and will be implemented unless there is good reason for making exceptions and acceptable environmental outcomes can still be achieved.

This approach is similar to that adopted in the *Forest Practices Code*.

Part C, Approval Processes, Statutory Powers and Third Party Activity Assessment – briefly outlines Tasmanian and Commonwealth legislation that relates to planning, reserve management and values conservation with an emphasis on the authority the legislation confers for the conduct of activities in reserves. Activities that are assessed and controlled by other legislation, but can occur on reserved land, are also outlined.

Background information and guidelines for assessing third party minor activities are provided for reserve managers who are required to assess applications for using reserved land. These are guidelines only and are not prescriptive. Procedures are subject to agency policy and administrative arrangements. Reserve managers should refer to these.

Part D, Acronyms, Glossary, Key Sources and Appendix – provides lists of useful terms, references and web sites as well as the Appendix.

When using the Code to obtain guidance for a management issue or activity, users should first look for information specific to the proposed activity (eg. fire management, built structures, weed control). Subject areas are cross-referenced to other sections in the Code that may have some bearing on how an activity is conducted.

Citing of references has been kept as simple as possible and, as such, does not rigorously adhere to one convention. Where a date is not given for a manual, code or policy, it should be assumed that the latest version of the document is referred to. This approach takes into account revisions and updates of these documents.

Two symbols are used in the code:

- 🔗 This symbol refers to other sections of the Code or other key documents that contain information or prescriptions relevant to an activity.
- 👤 This symbol identifies situations where specialist advice should be sought.



Photograph: Louise Gifford

- 1 Context
- 2 Guiding Principles

1.1 Background

The *Tasmanian Reserve Management Code of Practice* (the Code) is the result of a commitment under the Tasmanian Regional Forest Agreement (RFA) to develop and implement a code of practice to cover all environmental practices in reserves. The Code is seen as an important element in the framework for protecting conservation values encompassed by the Comprehensive, Adequate and Representative (CAR) reserve system, which was expanded under the RFA to meet agreed reservation targets for wilderness, old growth forest and biodiversity.

It will complement other management codes of practice, such as the *Forest Practices Code*, *Quarry Code of Practice* and *Mineral Exploration Code of Practice*.

Under Clause 94 of the RFA, implementation of the Code will be subject to annual compliance audits. It will also be subject to five-yearly independent expert review. Opportunities for community input into this process will be provided. The independent review will be facilitated if the application of the Code has been monitored in terms of both compliance and the achievement of desired outcomes.

In order to achieve an acceptable level of compliance, staff training will be an integral part of the Code's implementation. Established training programs will be utilised where possible.

THE OBJECTIVES OF THE CODE ARE TO:

- document appropriate management practices and standards for lands formally reserved for conservation in Tasmania;
- promote consistency in management practices and standards across the range of reserve types and tenures, subject to the statutory objectives of the different reserve classes;
- provide an assessment and planning tool by documenting relevant standards and providing an overview of statutory assessment and approval processes;
- improve transparency to the public of the management systems and procedures for reserved lands, and provide opportunities for public input (through public comment on a draft code and at five-yearly reviews); and
- provide links and consistency between this Code, the *Forest Practices Code*, the *Quarry Code of Practice* and the *Mineral Exploration Code of Practice*, as they apply to activities within reserves.

1.2 What Does the Code Do?

The Code specifies appropriate standards and practices for new activities in any land-based reserve that have been assessed and approved through reserve planning processes.

The Code will contribute to the protection of natural and cultural values including the National Estate values within reserves identified under the RFA.

It is important to note that the Code applies only to activities compatible with the Management Objectives for the particular class of reserve as specified in the Schedules of the *National Parks and Reserves Management Act 2002*, the *Forestry Act 1920*, and the *Crown Lands Act 1976*.

Activities are subject to the provisions of any applicable management plan. Management objectives for the different classes of reserve are set out in Appendix 1.

Importantly, the Code does not give authority for the activities described in the Code to be conducted in reserves but aims to guide their conduct where approvals have been obtained through statutory or agency administrative procedures.

The Code provides information and guidance for activities except where there is an inconsistency with policy in a statutory management plan, then the management plan takes precedence.

It is recognised that management plans and strategies aim to provide an overarching framework for future management of reserves while the Code primarily provides best practice operational standards. It does not aim to replace detailed project planning and environmental impact assessment processes employed by reserve managers.

The Code uses the term activity for all existing or proposed reserve-based activities conducted by the reserve manager as well as those carried out under authority (ie. lease, licence or permit). It encompasses a range of other terms describing reserve-based activities, such as works, development, project, operation, use, maintenance, practice or action, and can include protection, conservation and rehabilitation activities.

1.3 Where Does the Code Apply?

The Code applies to all land-based reserves managed under the *National Parks and Reserves Management Act 2002*, to forest reserves under the *Forestry Act 1920*, and to certain public reserves under the *Crown Lands Act 1976*.

The Code applies to those public reserves that have significant natural and cultural values and are still in a largely natural condition. It does not apply to public reserves that have been highly modified and developed such as school grounds. Those public reserves to which the Code will apply will be identified as resources permit. There are several thousand of these reserves in Tasmania.

Although the Code directly applies to reserved land, it can also be used, where appropriate, to guide activities that commonly occur on unallocated Crown land between high and low water mark.

The Code may also apply to covenanted or reserved private land where agreed to by the landowner and referred to in the covenant, management agreement or conservation plan for the land.

This version of the Code does not apply to marine areas within reserves. Although there is overlap in reserve management practices for marine and land-based areas, marine areas are beyond the scope of this initial version of the Code.

1.4 Who Needs to Use this Code?

The *Tasmanian Reserve Management Code of Practice* is primarily aimed at reserve managers – the people or organisations responsible for managing lands reserved for conservation in Tasmania. The Parks and Wildlife Service and Forestry Tasmania manage the majority of Tasmania's formal reserves and are required to undertake activities in accordance with this Code.

In the future, local government and conservation management trusts who manage the balance of reserves covered by the *National Parks and Reserves Management Act 2002* may also be required to meet the provisions of this Code where specified by a lease or approval conditions.

In addition, landowners managing private reserves under agreement may also wish to use specified sections of this Code for managing values. Where this occurs, the Code may be referred to in the negotiated management agreement.

Community groups and individuals who are planning conservation projects on reserved or private land can also use this Code for guidance.

The Code is most relevant to the reserve-based management activities of field staff such as rangers and foresters and does not aim to guide specialist activities (eg. research, survey management and recording) which are normally directed by professional standards and systems. However, activities by specialists must still conform to Code standards.

Where a contractor carries out a management activity, it is the responsibility of the reserve manager to ensure that the activities are conducted in accordance with this Code.

Proponents who carry out non-departmental activities under an issued authority such as a lease, licence, permit or exemption need to be aware of the Code but are not required to interpret it. They may, however, be subject to the provisions of the Code through their obligation to meet the conditions placed on their operation in a reserve.

The Code should be referred to by the reserve manager during the assessment of applications for an authority, lease, licence or permit, or exemption applications for activities within reserves, to ensure that activities can meet the requirements of the Code.

The Code is not aimed at reserve visitors, although it prescribes codes of conduct for recreational activities with which visitors are encouraged to comply.

For the purpose of this Code, marine is defined as all land and waters below low water mark, excluding structures attached to the land (eg. jetties). These structures are deemed to be part of the land-based reserve to which the Code applies.

2

Guiding Principles

This section sets out the guiding principles for all aspects of reserve management. They are based on:

- *The Australian Natural Heritage Charter: Standards and principles for the conservation of places of natural heritage significance*; and
- *The Australia ICOMOS Charter for the Conservation of Places of Cultural Significance (The Burra Charter)*.

The primary objective of reserves is the conservation of natural and cultural values. The following principles assist in achieving this and reserve activities should be underpinned by them.

PRINCIPLES OF NATURAL AND CULTURAL HERITAGE MANAGEMENT

- 1 **Principle of Inter-generational Equity** – This generation should ensure that the health, diversity and productivity of the environment and the integrity and significance of cultural places are maintained or enhanced for the benefit of current and future generations.
- 2 **Principle of Intra-generational Equity** – The policies and decisions that affect current generations must incorporate social equity measures to ensure the equitable distribution of costs and benefits.
- 3 **Principle of Existence Value** – Living organisms, earth processes and ecosystems may have value beyond the social, economic or cultural values held by humans.
- 4 **Principle of Inter-dependency** – Natural systems are made up of inter-dependent components linked by natural processes. An action that affects one part of the system will also affect other parts; no part of the system should be managed without regard to its role within the system and its inter-dependency on other parts of the system.
- 5 **Principle of Uncertainty** – Our knowledge of natural and cultural heritage and the processes affecting them is incomplete, and the full potential significance or value of natural and cultural heritage remains unknown because of this uncertain state of knowledge.
- 6 **Precautionary Principle** – Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation or harmful disturbance to cultural places. Application of this principle should be guided by (i) careful evaluation to avoid, wherever practicable, serious or irreversible damage, and (ii) an assessment of the risk-weighted consequences of various options.
- 7 **Principle of Ecological Sustainability** – Decision-making processes should include both long- and short-term considerations, and in particular should maintain geodiversity and biodiversity, the physical and ecological processes that support natural diversity, and the effective functional role of ecosystems and of natural diversity within those systems.
- 8 **Principle of Indigenous People's Rights** – Decision-making processes should recognise the rights, and take into account the interests, of Tasmania's indigenous people.
- 9 **Principle of Community Involvement** – Decision-making processes should provide for broad and meaningful community involvement in issues that affect them, without being dominated or determined by particular sectors or interests.
- 10 **Principle of Transparency of Decision-making** – The framework and processes for decision-making should be transparent, and the basis of decisions should be accessible to the public.

PRINCIPLES OF RESERVE MANAGEMENT

- 1 **Protection and maintenance of natural and cultural values** is a fundamental objective in managing reserved areas and should direct all aspects of management. As far as practicable, the effects of management on the full range of natural and cultural values should be considered in determining appropriate practices.
- 2 **Threatening processes** which are degrading, or which could degrade, the natural and cultural values of the reserve should be identified. Strategies to avoid or ameliorate the threatening processes should be developed and implemented.
- 3 **Restoration of degraded sites** should be considered where this can promote the reserve management objectives and has been identified as a management priority through the planning process.
- 4 **A systematic planning process** is fundamental to good reserve management practices. The planning process should provide a framework for integrating the multiple objectives and uses for which reserves are managed in a strategic and cost-effective way and including strategies for avoiding or ameliorating threatening processes.
- 5 **Good data** are essential for informed decision-making. Where existing data are inadequate to predict the effects of a management action with reasonable certainty, a process should be developed to improve the data available for decision-making. However, where the impacts of an activity can be reasonably predicted on the basis of scientific study and past experience, incomplete data should not be the principal reason for preventing an activity from proceeding.
- 6 **The significance of values** should be assessed and a statement of policy developed which identifies management options for their protection.
- 7 **Appropriate strategies** should be developed and implemented through a management plan or other management, planning or policy document.
- 8 **Resource requirements and responsibilities** for implementing management strategies should be identified in the planning process.
- 9 **Community involvement** in the management of a reserve should be promoted through consultative processes and, where feasible, in collaboration with community groups.
- 10 **A collaborative approach with Tasmania's indigenous people** should be promoted through joint management initiatives and other appropriate mechanisms.
- 11 **Monitoring of management performance and outcomes** should be ongoing. If monitoring indicates that benchmarks are not being achieved, the management approach should be modified to develop a more effective approach.
- 12 **A record of decisions and actions** should be maintained to promote transparency and facilitate evaluation of management procedures.



Photograph Michael Pemberton

3.0 Activity Assessment

4.0 Looking After Reserve Values

- 4.1 Geodiversity
- 4.2 Flora and Fauna Values
- 4.3 Landscape
- 4.4 Wilderness and Wild Rivers
- 4.5 Cultural Values
- 4.6 Social Values
- 4.7 Recreational Values
- 4.8 Environmental Quality (Air, Water, Noise)

5.0 Protecting Reserves

- 5.1 Fire Management
- 5.2 Weed Control
- 5.3 Plant Disease Management
- 5.4 Exotic Animal Control
- 5.5 Soil Conservation
- 5.6 Land Rehabilitation
- 5.7 Dangerous Goods and Agricultural Chemicals
- 5.8 Spills and Emergencies

6.0 Visitor Services and Infrastructure

- 6.1 Provision of Visitor Services and Infrastructure
- 6.2 Communication
- 6.3 Roads and Vehicular Tracks
- 6.4 Road Maintenance, Closure and Barriers
- 6.5 Non-vehicular Tracks
- 6.6 Air Access
- 6.7 Built Structures
- 6.8 Day-use Areas and Campsites
- 6.9 Shore-based and Aquatic Infrastructure
- 6.10 Drinking Water Supply
- 6.11 Waste Management
- 6.12 Sanitary Systems

7.0 Recreational Codes of Conduct

3

Activity Assessment

Activity proposals need to be assessed so that reserve values and the potential impacts of a proposed activity are systematically considered. This section contains general prescriptions for the assessment of activities. Where the assessment of an activity requires the consideration of a specific value, threat or standard, then this is referred to in the relevant section of the Code. See Section 4 (Looking After Reserve Values), Section 5 (Protecting Reserves) and Section 6 (Visitor Services and Infrastructure) for specific prescriptions.

GENERAL PRINCIPLES

The approval processes used to reach a decision about new reserve activities vary according to the nature and size of the activity proposed.

It is recognised that an assessment of proposed developments and activities provides a basis for managing and minimising their potential impacts and risks. This applies equally to both internal proposals and third party proposals. Figure 1 (in Section 8) provides a summary of legislation and State policies relevant to the assessment and approval of reserve activities. Also see Section 8 (Approval Processes and Statutory Powers) and Section 9 (Assessing Third Party Minor Activities).

The administrative arrangements that are employed by a reserve management body for assessing the environmental impacts of an activity should include the following key elements:

- standardised and repeatable procedures based on principles of good practice;
- transparent, consultative processes which include a range of stakeholders relevant to the circumstances;
- a level of assessment that is appropriate for the proposed activity, including environmental risk;
- balanced, credible information;
- consideration of cumulative effects;
- decisions and actions that are issues-focussed;
- consideration of alternatives;
- adequate documentation of decisions and actions;
- monitoring of compliance and effects; and
- accountability in decision-making.

BASIC APPROACH

All statutory requirements will be met in the approval of activities in reserves.

Proposed activities (both internal and third party activities) will be assessed in order to minimise or reduce the potential for impacts of an activity on reserve values.

The level of assessment will be appropriate to the activity and its potential for affecting reserve values.

Where documented decision support systems or procedures are not available or do not provide adequate information for identifying values and their significance, or clear direction for the particular activity or circumstance, then specialist advice should be sought.

The recommendations and input from specialists should be incorporated, where appropriate, into an activity proposal.

The assessment process will need to consider, where relevant, whether reservation levels for CAR values could be affected in the regional context.

The activity assessment process should take account of the cumulative effect of developments, uses and proposals on reserve values and visitor experience.

When considering a proposal and before a decision is made, other available options should be identified. Where there is no acceptable option, the activity should not proceed.

Decisions about reserve activities should be recorded.

The JANIS Report (1997) provides guidelines for the reservation of the CAR values: biodiversity, old growth forest and wilderness, taking into account reserve design and management and social and economic considerations.

Options for a proposed activity could include:

- *the range of feasible and appropriate conservation and rehabilitation measures available;*
- *alternative locations for the activity;*
- *methods of reducing any adverse impacts of an activity on a value or site to an acceptable level.*

Table 1 should be used to prioritise a management response where there is conflict in management for multiple values.

TABLE 1

- 1 Identify and describe the nature of the conflict between the maintenance of values.
- 2 Identify and fill important gaps in knowledge of the values affected as far as practicable.
- 3 Consider alternative approaches to management that avoid or minimise the effect on values.
- 4 Identify how irreversible alternative management approaches are. Take into account the potential for cumulative impacts.
- 5 Identify the relative importance of the conflict for the maintenance of each of the associated values.
- 6 Determine the significance of the value before making a final decision. Internationally significant values are generally rated higher than locally significant values but this needs to be balanced against local abundance and national significance.
- 7 Give priority to the most significant value, taking into account the cumulative effects of an activity.
- 8 Implement the most appropriate guidelines, procedure or plan and monitor as required.
- 9 If necessary, halt or modify the guidelines, procedure or plan on the basis of the results of monitoring.

Table 1

Procedure for prioritising management where a proposed activity could cause conflict in management for multiple values

► Policies and procedures for consultation will be used, where they exist. See Section 4.5 (Cultural Values), 4.6 (Social Values) and Key Sources for more information on consultation.

In general, consultation should take place where:

- the proposed activity has not been approved via a planning process, such as a management plan or other approved planning or policy document involving notification and public comment; and
- the proposed activity is likely to be controversial, eg. is likely to cause a marked change in the present or future use of an area by the public; or
- it is required under legislation or agency policy.

4

Looking After Reserve Values

GENERAL PRINCIPLES

Three main types of values are commonly assigned to reserves. These are: natural values; cultural values comprising Aboriginal, historic and social values; and recreational values.

Natural values incorporate a spectrum of values, ranging from existence value at one end through to socially-based values at the other (*Australian Natural Heritage Charter*). They include geological, geomorphological and soil sites or features; plant species and assemblages; plant and animal habitat; populations of animal species; wilderness; hydrological systems; wild rivers and scenery.

Cultural values include representations of the skills, arts, perceptions and material culture of Aboriginal people and other Australian cultural groups which contribute to the Tasmanian historic period.

Cultural values also include contemporary social values such as the 'significance' that members of a local community assign to a place. The use of a place by non-Aboriginal people, which extends over a long period of time, can be considered a contemporary social value.

Recreational values are also recognised and are often the major reason for a reserve's popularity. They can be the cause of many impacts, issues and conflicts. They may also be considered to be contemporary social values if they have been practiced at a location for a long time.

Strategic planning for the management of natural, cultural and recreational values should initially be carried out at a regional level but within State priorities.

Consultation with people interested in a reserve's values is fundamental to good planning, decision-making and service delivery and includes the effective involvement of Tasmanian Aboriginal people and other Australian cultural groups.

Aiming for good or best practice benchmarks when conducting reserve management activities is essential for the effective and long-term protection of natural and cultural values.

Reliable information about natural, cultural and recreational values and visitor behaviour is required in order to manage reserves effectively. This is especially necessary where a new activity is proposed, so that the values are not inadvertently damaged or their significance diminished.

To adequately conserve a place or value, especially when an activity is proposed, it is necessary to understand the significance of the site or value.

Reserve managers need to be aware of incremental development or use and the impact it may have on reserve values and visitor experience.

📌 The significance of values is important for prioritising a management response where there is conflict in management for multiple values. (See Table 1, Section 3 Activity Assessment).

Monitoring activities that are likely to impact on values ensures that the benchmarks for good or best practice reserve management techniques are being evaluated, so that management techniques can be improved as required.

Research is essential for monitoring the condition of values, for identifying threats and improving reserve management techniques.

Sharing information with, and training, field-based staff is essential for improving their skills in recognition, protection and appropriate management of values.

Interpretation can increase public awareness of issues and be used to protect values and promote their conservation.

BASIC APPROACH

Reserves and their values will be managed in accordance with this Code, existing legislation, strategies, systems, management, operational or business plans, where they have been developed to manage natural, cultural and recreational values.

Where plans, systems and strategies do not exist, then relevant sources of information, including specialist advice, should be sought regarding a reserve's values and their appropriate management.

Management policies and operational guidelines should be regularly updated in accordance with national and international standards and practices and latest management planning systems and information.

Natural and cultural values and sites in a reserve should be surveyed, identified, recorded and assessed for significance to provide the best possible information for the activity assessment process.

Australian cultural groups should be considered in all stages of reserve management and be consulted and involved, where practical, in the management of values.

Tasmania's Aboriginal people are recognised as having a special relationship with all facets of their heritage and the land. Their involvement in reserve management processes will be negotiated in accordance with established protocol.

▶ See Section 4.5 (Cultural Values) for information on established protocol.

Interpretation of natural and cultural values should be considered where this helps to protect values and not threaten them.

A planning process should be implemented to identify potential future impacts and conflicts, and to develop a strategic and effective response to issues of management significance.

Where an activity is having an impact or is causing a conflict, then an appropriate management response that mitigates or avoids the impact or conflict should be implemented.

An activity should be monitored where it is known to have, or is suspected to have, an impact on a reserve's values.

Monitoring should be undertaken where a proposed activity is likely to have:

- a significant impact on a site or value of conservation or cultural significance;
- an impact beyond the immediate area of the activity;
- a cumulative effect over many years or when considered in conjunction with other activities; and/or

where the effect on reserve values is unknown and is likely to be substantial.

Monitoring should:

- aim to measure the impact of activities on values and the effectiveness of programs to protect significant sites and values;
- be undertaken as an integrated program developed in conjunction with specialists using established policy and procedures where they exist;
- contribute directly to management actions to prevent further impacts on reserve values.

Monitoring of an activity or area should be prioritised in accordance with available resources, to include those areas most at risk of significant impacts.

4.1 Geodiversity

GENERAL PRINCIPLES

The conservation of geodiversity will be achieved primarily through the protection and maintenance of geological (rock), geomorphological (landform) and pedological (soil) features, systems and natural ecosystem processes.

The objectives of geodiversity conservation are to:

- conserve and maintain geodiversity;
- maintain natural rates and magnitudes of change in geoprocesses;
- protect and maintain sites of geoconservation significance;
- minimise harmful impacts on sites of geoconservation significance;
- interpret geodiversity to reserve visitors;
- contribute to maintaining biodiversity and ecological processes that depend upon geodiversity.

Geodiversity is the natural range or diversity of geological (bedrock), geomorphological (landform) and pedological (soil) features, systems and processes. Geodiversity includes evidence for the history of the earth (evidence of past life, ecosystems and environments) and a range of processes (biological, hydrological and atmospheric) currently acting on rocks, landforms and soils.

Geoconservation is the identification and conservation of geodiversity for its intrinsic, ecological and heritage values (Australian Natural Heritage Charter).

Under Section 4 of the Forestry Act 1920, forest produce is defined as including sand, gravel, clay, loam and stone.

Indicative Sensitivity Rating: *Sites listed in the Tasmanian Geoconservation Database are classified according to an indicative sensitivity scale. The scale reflects the potential for geoconservation values to be degraded based on differing intensities and patterns of disturbance. The scale ranges from 1 (highly sensitive) to 10 (robust).*

Geodiversity features and systems vary in their sensitivity to disturbance; however, all aspects of geodiversity are sensitive to threatening processes at some level.

Natural processes are important to the integrity of many landforms and soils and must be considered in determining management requirements for geodiversity.

Relevant legislation includes the *National Parks and Reserves Management Act 2002*, *Nature Conservation Act 2002*, *Forestry Act 1920* and the *Environment Protection and Biodiversity Conservation Act 1999*.

A permit is required to take geological or soil samples on all land managed under the *National Parks and Reserves Management Act 2002* and land reserved under the *Crown Lands Act 1976*.

In forest reserves managed under the *Forestry Act 1920*, written permission is required to take geological or soil samples. Geological or soil samples are considered to be forest produce.

▶ See Section 9.6 (Scientific Research) for more information on the issue of authorities.

Information sources include:

- web sites for reference material;
- the Tasmanian Geoconservation Database to determine if the site has been assessed;
- reserve management plans, scientific reports, surveys and manuals;
- Forestry Commission 1990, *Geomorphology Manual*;
- Kiernan, K. 1995, *An Atlas of Tasmanian Karst*;
- Eberhard, R. 1997, *Draft Cave Classification System for Tasmania*;
- Thorpe, V. 2003, *Community Coastcare Handbook: Caring for the Coast in Tasmania*;
- WCPA Working Group on Cave and Karst Management 1997, *Guidelines for Cave and Karst Protection IUCN*;
- local information and field reconnaissance;
- advice from specialists.

BASIC APPROACH

Geodiversity values will be managed in situ, unless there are compelling conservation reasons for doing otherwise.

Relevant information on sites or areas of significance, or potential significance, should be recorded when planning for an activity.

The Tasmanian Geoconservation Database and other relevant information sources should be consulted to determine the conservation significance of recorded sites and to see if an Indicative Sensitivity Rating has been applied.

Where an activity is approved at a site of geoconservation significance, measures should be implemented to avoid or minimise adverse impacts to geological, landform and soil features and processes. Specialist advice should be sought to determine these measures.

Permits and authorities required under the *National Parks and Reserved Land Regulations 1999*, *Nature Conservation Act 2002*, *Crown Lands Act 1976*, *Forestry Act 1920* and the *Environment Protection and Biodiversity Conservation Act 1999* will be obtained where required.

Threatening processes or activities should be addressed where they are likely to adversely affect:

- a site of geoconservation significance; or
- a natural process relevant to the integrity of a site of geoconservation significance.

Where rehabilitation activities are undertaken, these should, as far as practicable, restore relevant natural features and processes.

▶ See Section 5.6 (Land Rehabilitation) for information on rehabilitation.

See Section 3 (Activity Assessment) and the introduction to Section 4 (Looking After Reserve Values) for information on assessing activities.

INFORMATION FOR ACTIVITY ASSESSMENT

Where field assessment is required, collect the following information:

- bedrock, soil type and exposure
- geomorphology and geomorphological processes operating
- trends in the condition of the site and the extent of disturbance including the extent of vegetation cover (eg. active erosion, reduction in vegetation cover)
- current use of the site
- other threats to the identified values
- likely impact of the proposed activity on the values
- condition and effectiveness of existing mitigating measures (eg. formed tracks, barriers, educational materials, signs etc)

Retention of parts or all of artificial exposures (eg. road cuttings, quarries) will be considered where this can contribute to maintaining the values of sites of geoconservation significance.

Sites of geoconservation significance that are publicised or promoted to the public should be managed to protect the values from threats arising from increased visitation.

Sites of geoconservation significance will not be publicised or promoted where this could result in damage to site values. Consideration should be given to controlling public access where unrestricted access is likely to result in unacceptable impacts on site values.

GEOCONSERVATION WEB SITES

The Tasmanian Geoconservation Database is available at www.gisparks.tas.gov.au and on Map Composer at Forestry Tasmania.

The web version only gives general locations of highly vulnerable sites. Contact the appropriate specialist for further information.

Don't assume that an absence of sites listed in a database means that an activity will not affect a site of significance, as not all sites have been discovered, documented or had their listing formalised.



Photograph: Grant Dixon

Peat mounds such as this occur on a number of restricted lowland plains in southwest Tasmania. Relevant information sources should be consulted to determine the conservation significance of recorded sites. Louisa Plains, Southwest National Park.

The Tasmanian State Coastal Policy is available at www.rpdc.tas.gov.au then visit >State Policies > Tasmanian State Coastal Policy

The Community Coastcare Handbook: Caring for the Coast in Tasmania provides practical and technical information on coastal activities.

Coastal protection works and reclamation

Modification of coastal landforms through reclamation, construction of groynes and breakwaters, stabilisation of naturally mobile dunes, and similar measures involving impacts to landforms and landform processes, should be avoided. These measures should only be considered where they are consistent with the requirements of the *Tasmanian State Coastal Policy* and there is a substantial threat to infrastructure.

Breaching of spits should only occur if there is a significant threat to public safety, public health, public infrastructure or risk of severe damage to other structures, and only after full consideration is given to possible implications for natural and cultural values and natural processes. Existing procedures, where developed, will be adhered to.

Development of infrastructure should only occur where the risk is demonstrated to be low, or the structures have the capacity to be moved when threatened by inundation.

Coastal protection works should only occur for the protection of existing, important structures and infrastructure following the production of an approved environmental impact assessment which examines the impacts and effectiveness of the proposed design, construction and monitoring.

The use of marram grass as an erosion control measure will be in accordance with Section 5.6 (Land Rehabilitation).

Karst management – surface activities

The karst systems context will be considered in assessing and managing activities in karstlands. This means recognising the potential for a high level of connectivity between surface and underground features and processes, and taking account of this in all aspects of management.

Specialist input will be obtained and other relevant sources will be consulted as part of the assessment process for activities that could affect a karst landform or karst system.

Karst landforms (surface and underground), drainage divides and subterranean watercourses should be documented in assessing activities with potential to have an impact on karst systems. This information should be taken into account in assessing the activity and avoiding or mitigating impacts if the activity proceeds.

An investigation should be initiated where currently available sources are inadequate to assess the impact of an activity in a karstland. The investigation may include mapping landforms and caves, water tracing, discharge measurements and other activities as appropriate.

Downstream impacts will be considered in assessing activities with potential to affect water flows or water quality in a karst system (the activity itself may not be on karst). Relevant sources should be consulted to determine whether a karst system occurs downstream of the activity.

Opportunities to develop a collaborative approach to management with neighbours should be identified and pursued where karst systems extend across boundaries between reserves and adjacent tenures. However, it is not the responsibility of reserve managers to control access to caves in private land.

▶ See Section 5.5 (Soil Conservation), 5.7 (Dangerous Goods and Agricultural Chemicals) and 6.12 (Sanitary Systems) where a relevant activity is proposed in a karstland.

Karst management – cave-based activities

Classification and management of karst caves will be in accordance with the *Tasmanian Cave Classification System*.

Measures such as signs, stringlines and markers to delineate routes should be installed where this can help reduce the impact of cave visitors. A standardised system should be adopted for defining routes.

Protective matting, boot washing stations and other measures should be installed where this can help reduce the impact of cave visitors.

The Tasmanian Cave Classification System is a planning tool for identifying broad management objectives for caves, taking into account their sensitivity to the impact of visitors.

Significant new cave discoveries should be assessed, as a matter of priority, and measures implemented to ensure that future visitation does not cause unacceptable impacts on the cave.

The role of caving clubs in promoting awareness of minimal impact caving practices, and in documenting aspects of caves relevant to management, should be recognised. Opportunities to collaborate with caving clubs in cave management activities should be identified and pursued where practicable.

Minimal impact caving practices and site-specific caving protocols should be promoted through notesheets or signs at Wild Caves subject to significant recreational pressure.

Monitoring should be carried out to assess levels and impacts of visitation to Show Caves and Wild Caves subject to significant recreational pressure.

Cave restoration and cave-cleaning programs should be initiated where this can mitigate damage caused by visitation or other activities.

Caves will be designated as Restricted Access Caves where unrestricted public access is likely to result in unacceptable impacts on the cave environment or otherwise conflicts with management objectives for the site.

Restricted Access Caves and other sensitive caves should be gated, where this is practicable and necessary to control access. Cave gates will be designed and constructed to avoid significant impacts on the cave microclimate, and to ensure that the cave ecosystem is not adversely affected. Alternative measures to control access will be considered if gate construction is likely to create unacceptable impacts on karst landforms or ecosystems.

Protocols for access to caves should be based on an assessment of environmentally sustainable visitation levels, and the skills and experience required of visitors to ensure that unacceptable impacts are avoided.

Visitors to caves will be required to adhere to minimal impact caving practices in accordance with relevant caving codes and any site-specific guidelines prepared by the reserve management body.

As far as practicable, cave-based infrastructure should be designed to provide for installation, maintenance and possible later removal, without permanently damaging the cave.

Materials installed in caves should be non-polluting and stable in the environment. The condition of cave-based infrastructure should be periodically assessed, and replaced or upgraded if necessary.

Show Caves should be subject to environmental monitoring systems to address lampenflora, the cave microclimate, lint and other parameters as appropriate.

Suitability based on environmental parameters, will be a principal criterion in assessing caves proposed as sites for public presentation.

Management plans and/or site plans should be developed for karst sites developed for public presentation (eg. Show Caves) or subject to significant recreational pressure. An integrated approach will be adopted in planning lighting, interpretation, tour structure, monitoring systems and surface infrastructure at Show Caves.

Where access is requested to caves with Aboriginal values, the Aboriginal community will be consulted and access designated.

► See Section 4.5 (Cultural Values) for information on Aboriginal community consultation.

A Show Cave is a cave developed for presentation to the public with infrastructure such as walkways and artificial lighting. Public access is available within the context of a tour structure determined by the reserve manager.

A Wild Cave is a cave that is not developed for public presentation as a Show Cave. Wild Caves may be open for recreational visits, subject to compliance with minimal impact caving protocols and other conditions.

A Restricted Access Cave is a cave to which the public has no general right of access under the National Parks and Reserves Management Act 2002 or Sections 22C, 22E and 25 of the Forestry Act 1920. Access to Restricted Access Caves, where permitted, is generally limited to members of caving clubs affiliated with the Australian Speleological Federation.

Flora and fauna values can include threatened species and communities as well as features of biodiversity such as an unusual diversity of life forms, species richness, high levels of endemic plants and geographically isolated populations of plants.

Biodiversity means the variety of life forms: the different plants, animals and micro-organisms, the genes they contain, and the ecosystems they form.

Taking wildlife includes killing, destroying, hunting, pursuing, catching, shooting, netting, snaring or injuring.

Taking native flora includes the collection, damage, destruction, trading, keeping or processing of native plants or plant parts (seed, foliage, roots, bark etc.).

*Flora & Fauna Databases Species point locations, including threatened species, weeds and *Phytophthora cinnamomi* records are available in the GTSpot database at www.gisparks.tas.gov.au CONSERVE and GIFT are available to staff on Forestry Tasmania's GIS.*

Cortex can be used to identify the likely locations of a range of species using specified parameters such as altitude and vegetation type. Vegetation maps are also available at this web site, including WHA and TASVEG vegetation maps which link to the Tasmanian Bushcare Toolkit.

4.2 Flora and Fauna Values

GENERAL PRINCIPLES

The conservation of flora and fauna values is best achieved by the protection of indigenous species and their habitat, and the maintenance of natural ecosystem processes.

Protecting existing indigenous vegetation is the most efficient way of conserving flora and fauna values.

Species, communities and ecosystems vary in their sensitivity to disturbance.

Natural processes are important to the integrity of communities and the survival of individual species. Direct intervention may be required to ensure the survival of rare and threatened species and communities.

The objectives of native flora and fauna conservation are to:

- retain the natural diversity of native species, communities and ecosystems;
- maintain the natural exchange of genes and the functioning of evolutionary processes within native populations and species;
- prevent or minimise harmful impacts on biodiversity;
- restore or reinstate conservation significance where appropriate;
- promote and interpret biodiversity and the conservation of threatened native species, communities and ecosystems to reserve visitors;
- contribute to maintaining other natural values that depend on biodiversity.

Relevant legislation includes the *National Parks and Reserves Management Act 2002*, *Nature Conservation Act 2002*, *Threatened Species Protection Act 1995*, *Forestry Act 1920*, *Forest Practices Act 1985*, *Inland Fisheries Act 1995* and the *Environment Protection and Biodiversity Conservation Act 1999*.

An authority (permit) is required to take any protected wildlife, or their products, on the schedules of the *Nature Conservation Act 2002* ('specially protected', 'protected' or 'partly protected' wildlife). Similarly, a permit is required to take any threatened species (plants and animals) listed on the schedules of the *Threatened Species Protection Act 1995*. A permit is required to take fish under the *Inland Fisheries Act 1995*.

An authority under the National Parks and Reserves Land Regulations 1999 is required to take plants and animals on reserved land.

An authority is required to take or remove plants or vegetation from land reserved under the *Crown Lands Act 1976*.

In forest reserves managed under the *Forestry Act 1920*, permission of the reserve manager to conduct the activity is also required.

► See Section 9.6 (Scientific Research) for more information on the issue of authorities.

Information sources include:

- web sites for reference material;
- GIS information;
- decision support systems such as the Threatened Fauna Adviser and Cortex (available through GTSpot);
- support systems such as Habitat Assessment for Rare and Threatened Species (HARTS is available from DPIWE, Threatened Species Unit);
- reserve management plans, scientific reports, surveys, and manuals;
- Forest Practices Board forest botany and threatened fauna manuals;
- land management, threat abatement or species recovery plans, listing statements or interim protection orders;
- *Protecting Natural Heritage – using the Australian Natural Heritage Charter*;

- *Tasmania's Nature Conservation Strategy*;
- *Threatened Species Strategy for Tasmania*;
- reports on the *Flora of Recommended Areas for Protection and Forest Reserves in Tasmania*;
- National Estate sites of significance reports;
- Barker, P. 2001, *A Technical Manual for Vegetation Monitoring*;
- Bryant, S.L. & Jackson, J. 1999, *Tasmania's Threatened Fauna Handbook*;
- McCoull, C.J. & Barnes, R.W. 2002, *A User's Guide to Vegetation Monitoring*;
- Wood, S. & Lawrence, N. 2000, *Threatened Flora of Northeast Tasmania*;
- local information and field reconnaissance;
- advice from specialists.

BASIC APPROACH

Permits and authorities required under the *Threatened Species Protection Act 1995*, *Nature Conservation Act 2002*, *Animal Welfare Act 1993* and/or the *Environment Protection and Biodiversity Conservation Act 1999* will be obtained where required.

Relevant information on sites or areas of significance, or potential significance, should be recorded when planning for an activity.

A high priority should be given to managing threatening processes or activities that have, or are likely to have, an impact on:

- species listed under the *Threatened Species Protection Act 1995*;
- species or ecological communities listed under the *Environment Protection and Biodiversity Conservation Act 1999*;
- threatened forest communities identified in the RFA as warranting protection;
- non-forest communities identified in the *Vegetation Management Strategy for Tasmania*;
- locally or regionally significant species in the area.



Photograph: Louise Gifford

Don't assume that an absence of sites listed in a database means that an activity will not affect a site of significance, as not all sites have been discovered, documented or had their listing formalised.

Contact the appropriate specialist for further information.

Threatened Forest Communities are listed at the *Private Forest Reserves Program* web site www.pfrp.tas.gov.au/program

Guidelines/Permit Applications are available at www.dpiwe.tas.gov.au > parks and wildlife > Nature of Tasmania > Plants of Tasmania

A high priority should be given to managing threatening processes or activities that impact or are likely to impact on non-forest communities identified in the *Vegetation Management Strategy for Tasmania*.

Poa grassland, Maria Island National Park.

Conservation priority is determined by the criteria defined in the Threatened Species Strategy for Tasmania (2000) for prioritising protection and recovery action for threatened species.

These criteria are:

- national priorities;
- State threat classification in the schedules of the Threatened Species Protection Act 1995;
- endemism, local or regional significance;
- taxonomic distinctiveness;
 - keystone role;
- cultural and community significance;
- likelihood of recovery with minimum action;
- reservation status of the species.

Exceptional circumstances would include the transference of an endangered species as part of a recovery program.

The assessment process will need to consider, where relevant, whether reservation levels for CAR values could be affected in the regional context.

Where a site of conservation significance is identified, and an activity is approved at that site, measures should be taken to avoid or minimise adverse impacts on features of biodiversity, species or communities with a conservation priority and the ecological processes that support them. 🗨️ Specialist advice should be sought to determine these measures.

Threatening processes or activities should be addressed where they are likely to:

- place a species at risk of a significant, unnatural reduction of individuals in a population;
- reduce the integrity of communities or ecosystems to a point where natural processes are threatened;
- adversely affect an identifiable feature of biodiversity (see General Principles in this section).

The response should aim firstly to prevent the threatening process or activity from having an impact on the value or, where this can not practically occur, aim to reduce the effect of the threat.

Restoration of native vegetation and habitat should be undertaken where it will promote biodiversity conservation objectives.

▶ See Section 5.2 (Weed Control) and 5.6 (Land Rehabilitation) for information on restoring native vegetation and habitat.

Movement of indigenous Tasmanian fauna species

Indigenous Tasmanian fauna species (including animals raised in captivity by carers) will not be moved to areas outside their normal range of distribution in Tasmania. Individual animals should not be transferred between populations, except under exceptional circumstances.

Only under exceptional circumstances, and where specified in a Species Recovery Plan, will indigenous Tasmanian fauna species be deliberately transferred between reserves or islands, or introduced onto them from other sources.

In all cases, an environmental impact statement will be prepared before the species is released into the new environment.

Removal of dangerous trees

Trees that have a significant probability of falling or dropping limbs in areas commonly used by reserve visitors (eg. frequently used or popular walkways and campsites) should be assessed for risk and then appropriate measures taken.

Tree surgery should be considered where it is likely that a tree may respond positively.

A key reference for assessing the risk from retained trees in forest reserves is the Forest Practices Board's Administrative Instruction: *Procedure for assessing the risk to public safety where trees are retained under the forest practices system.*

In reserves other than forest reserves:

- assessing the risk from trees retained in areas commonly used by visitors, should follow the Parks and Wildlife Service *Public Risk Management Policy*; and
- 🗨️ specialist advice will be obtained before removing trees with high conservation or social value, or before removing trees from a site of high conservation value.

▶ See Section 8.5.3 (Tree Removal or Timber Harvesting).

INFORMATION FOR ACTIVITY ASSESSMENT

Where field assessment is required, collect the following information:

- the plant communities present;
- whether threatened flora or fauna species or threatened ecological communities are known or likely to occur at the site;
- the presence of migratory species or their habitat;
- other significant flora or fauna values known or likely to occur at the proposed site or nearby;
- trends in the condition of the site (eg. the presence of weeds, *Phytophthora cinnamomi*, tracks, campsites, fire and grazing history, removal of standing timber, reduction of vegetation cover, active erosion);
- the current use of the site;
- other threats to the identified values;
- condition and effectiveness of existing mitigating measures (eg. barriers, educational materials, wash-down stations).

4.3 Landscape

GENERAL PRINCIPLES

The concept and meaning of landscape is generally influenced by the viewer's past experiences and attitudes. Many landscapes have more than one aspect of heritage value, with both cultural and natural heritage values being present.

Cultural values in landscapes may have no visible human impacts or constructions but can include traditions, stories, dance, music, spirituality or other cultural values that are derived from intangible, invisible elements including the landscape itself.

Some landscapes are strongly associated with aspects of history even though there may be no detectable trace left and the landscape is essentially in a 'natural' condition.

Broadly, the objectives of landscape management are to:

- protect the scenic, aesthetic, natural and cultural heritage qualities of landscape;
- contribute to maintaining the sense of place of communities;
- maintain the diversity of natural and cultural heritage landscapes;
- restore natural and cultural heritage landscapes that have been degraded by inappropriate developments.

Scenery, which is the most familiar concept of landscape, often involves an emotional response from the viewer which depends on several things including:

- visual character or appearance of the landscape;
- degree of scenic variety;
- visual effect of introduced changes;
- the viewer's existing attitude and feelings about the place.

The *Tasmanian State Coastal Policy* provides guidance in planning for developments in coastal areas.

Landscapes across Tasmania vary in their scenic importance and viewer sensitivity to the landscape. This can be used to guide the extent to which activities have an impact on the landscape.

Information sources include:

- *Protecting Natural Heritage – Using the Australian Natural Heritage Charter*;
- *Planning Guidelines: Urban Skylines and Hill Faces*;
- *A Manual for Forest Landscape Management*;
- map-based information systems.

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As a minimum, for visually intrusive activity proposals, known viewpoints should be identified and marked on the appropriate 1:25000 map sheet.

A statement should be made about the viewpoint in terms of viewer sensitivity (ie. visitor numbers and composition, eg. main tourist route vs minor unsealed road), distance from viewpoints to proposed site and the character of the scenery (eg. landform, vegetation, waterform, land use).

BASIC APPROACH

Activities should be planned and implemented in ways that will not detract significantly from landscape values.

Those parts of the reserve's landscape that are the most sensitive to public viewing should be identified so that the greatest effort in visual management can be given to the highest priority areas.

Aboriginal landscapes should be identified in conjunction with the Aboriginal community.

🔍 Specialist advice should be sought on appropriate consultation protocols.

Historic landscapes should be identified from documented information, historic photographs and consultation with the local community where appropriate. 🔍 Specialist advice should be obtained.

An inventory of the most visually sensitive areas in a reserve should be established based on the scenic quality of the landscape, the visibility and distance from public viewpoints and the relative sensitivity of the viewpoints.

Cultural landscapes should be categorised and recorded in accordance with existing procedure for places of cultural significance.

🔍 See Section 4.5 (Cultural Values) for more information on procedures for recording places of cultural significance.

Protection of cultural heritage landscape values may require cleared areas and exotic species to be maintained, subject to appropriate monitoring and control.

Tourism operators, local communities and regular visitors should be consulted where a proposed development is likely to have an impact on an identified significant view. Contact with the Aboriginal community (especially local communities) should follow established protocol.

Assessments of the significance of Aboriginal landscapes will be done in conjunction with the Aboriginal community.

🔍 Any alterations or changes to the cultural heritage landscape should be documented in accordance with Section 4.5 (Cultural Values).



Photograph Louise Gilledder

Vegetation contrast, colour and pattern, landform and waterform define scenic character and quality. Riparian vegetation, LakeLea, northeast Tasmania

Particular care should be taken to protect landscape values at locations that include areas of high priority or significance. These can:

- be identified as scenically important views;
- incorporate views that are likely to be of significance to the public;
- include areas of summit or skyline;
- be visible from coastal waters, roads, walking tracks, lookouts, and other vantage points; or
- be culturally significant.

Activities that might affect scenic landscape values should aim to blend in with or complement the character of the existing environment (natural or cultural) through use of appropriate siting, design, materials, colour and vegetation.

▶ See Section 6.7 (Built Structures) for more information on design aspects.

Activities with the potential to affect landscape values visible from urban or rural population centres will be assessed for visual sensitivity.

Where feasible and subject to consideration of cultural heritage significance, structures that detract from landscape values should be removed, replaced or otherwise modified to reduce impacts on landscape values.

Restoration of degraded natural landscapes will take account of their possible cultural significance.

▶ See Section 4.5 (Cultural Values) and 4.6 (Social Values) for information on determining the cultural significance of places and assessing social values.

4.4 Wilderness and Wild Rivers

GENERAL PRINCIPLES

The objectives for protecting wilderness and wild rivers are to:

- minimise the effects on wilderness quality of disturbance from human activities within high quality wilderness areas;
- restore or enhance wilderness quality in areas within, or contiguous with, high quality wilderness areas, where the wilderness quality has been degraded by past activities;
- maintain or enhance the integrity of identified wild rivers.

Wilderness values are best protected by minimising human disturbance in high quality wilderness areas, and by maintaining the remoteness of wilderness areas from developments and access.

The term 'wilderness' does not imply that the landscape has been devoid of occupation and use by Aboriginal people.

Wild river values are best protected by:

- maintaining the natural condition of a wild river and associated parts of its catchment;
- minimising disturbance to the hydrological, geomorphological and biological processes of the defined rivers.

Information sources include:

- web sites;
- GIS information;
- map-based information systems such as RFA maps available through the GTSpot database;
- *Conservation Guidelines for the Management of Wild River Values*;
- relevant reserve management plans, RFA reports;
- Lesslie, R. & Maslin, M. 1995, *National Wilderness Inventory: Handbook of Principles, Procedures and Usage*;
- Lesslie, R.G., Mackey, B.G. & Schulmeister, J. 1998, *National Wilderness Inventory: Stage II – Wilderness Quality in Tasmania*.

Australian Natural Lands and Rivers Land Disturbance Database (formerly the National Wilderness Database) is found at the Australian Heritage Directory web site at www.heritage.gov.au/anlr

Maps of wilderness, naturalness and wild rivers are also available from the GTSpot database at www.gisparks.tas.gov.au

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Wild river – a channel, channel network, or a connected network of waterbodies, of natural origin and exhibiting overland flow (which can be perennial, intermittent or episodic) in which:

- *the biological, hydrological and geomorphological processes associated with river flow, and*
- *the biological, hydrological and geomorphological processes in those parts of the catchment with which the river is intimately linked, have not been significantly altered since European settlement* (Conservation Guidelines for the Management of Wild River Values).

The parties to the RFA recognised that, subject to clauses 80 and 82, exploration could take place in defined CAR reserves containing wilderness areas and that measures will be taken to minimise the effects of mineral exploration activities.

BASIC APPROACH

Activities in areas of high quality wilderness that could detract from the wilderness quality should be avoided.

Activities in high quality wilderness should be carried out in a manner consistent with the maintenance or enhancement of wilderness quality.

Where an activity with the potential to detract from wilderness quality is proposed in or near a high quality wilderness area, consideration will be given to confining the activity to areas of lower wilderness quality outside or toward the periphery of the high quality wilderness area.

New or enhanced access routes or tracks, especially where high quality wilderness is compromised, should be assessed and action should be taken in accordance with Section 6.4 (Road Maintenance) of the Code to minimise erosion.

Measures to rehabilitate disturbance resulting from past activities will be considered where the disturbance detracts from wilderness quality in a high quality wilderness area or an area of potential high quality wilderness.

Redundant and/or unauthorised built structures in a high quality wilderness area should be removed, subject to consideration of cultural heritage significance.

Activities that could affect the natural condition of a wild river or its catchment should be located outside the wild river catchment, where possible. Where an activity that could affect the natural condition of a wild river or its catchment is unavoidable, the activity should be carried out in a manner that is, as far as is practicable, consistent with the maintenance or enhancement of wild river values.

Wilderness areas that are publicised or promoted to the public should be managed to protect values from threats arising from increased visitation.



Photograph: Michael Pemberton

Wilderness areas, such as Southwest Cape, are best protected by minimising human disturbance, Southwest National Park.

4.5 Cultural Values

GENERAL PRINCIPLES

Cultural values include Aboriginal values, historic heritage values and social values.

► Social values are, however, considered separately in Section 4.6 (Social Values).

Relevant legislation includes the *National Parks and Reserves Management Act 2002*, *Aboriginal Relics Act 1975* and the *Historic Cultural Heritage Act 1995*.

Cultural heritage places are:

- able to inform us about past ways of life;
- often aesthetically pleasing and interesting.

However, they are:

- often fragile and easily damaged or disturbed by activities and new developments;
- a non-renewable resource;
- often difficult to identify.

The main objective of managing cultural values in reserves is to minimise or prevent adverse effects of natural and human actions and, by researching the human history, to gain a better understanding of the area. This can be achieved through:

- identifying cultural places, their stories and associated issues in order to determine their nature;
- joint partnerships with community sectors so that they can be involved in the management of cultural values that are important to them;
- implementing policy and undertaking planning in order to assign available resources effectively;
- monitoring the effectiveness of programs and activities;
- recording conservation activities and cultural heritage sites at the standard specified by *The Burra Charter*, and maintaining a permanent record of them;
- determining conservation significance and management requirements;
- undertaking protective projects which identify natural and human threats to cultural places or values and aim to address these threats through conservation works and/or maintenance;
- identifying key places that are appropriate for promotion as leading attractions. These places are conserved and actively managed and the public are directed to them;
- reusing or adapting the use of Aboriginal and historic heritage resources and places where appropriate;
- increasing cultural awareness by interpreting cultural values to reserve visitors and improving community understanding of cultural heritage and its management;
- improving the knowledge and skills base in Aboriginal and historic heritage management.

Information sources include:

- databases with limited access protocol such as those available on CONSERVE (through Forestry Tasmania) and the Cultural Heritage Information Database and the Tasmanian Heritage Register;
- relevant reserve management plans, reports, survey results and procedures manuals;
- predictive models to aid in the identification of sites and values;
- Australian charters and best practice documents for guiding the management of cultural values. See the list in Basic Approach, below.

An assessment of the heritage value of a place for indigenous people can only be provided by the relevant indigenous people.

BASIC APPROACH

Planning for activities in reserves will involve an assessment of potential impacts on cultural values.

► See Section 8 (Approval Processes and Statutory Powers) and Section 3 (Activity Assessment) for further information on the assessment and approval of activities.

Aboriginal or historic heritage values include objects and features made, used or occupied by people. Such features may include middens, artefacts, rock shelters, hut depressions, certain plant and animal resources, homes, huts, factories, industrial complexes, outlying features such as sheds, non-shelter structures, fences, tracks, portable and non-fixed heritage items, graves, modified landforms, sub-surface artefacts, shipwrecks and remains.

Certain places and landscapes may also have cultural value. They can encompass made or modified places and objects as well as natural sites or features with natural values. Some special places are valued because they are locations where communities meet socially or undertake community-building activities together. See Section 4.6 (Social Values).

Cultural Heritage Information Database consists of the *Tasmanian Aboriginal Site Index* and the *Tasmanian Historic Places Inventory*.

The Burra Charter provides detailed guidance for assessing the significance of cultural heritage places. This can be found at www.heritage.gov.au > key resources

Relevant information on sites or areas of cultural significance, or potential significance, should be recorded when planning for an activity.

Activities that affect Aboriginal and/or historic heritage places should be documented and permanently recorded where relevant procedures exist. 📌 Specialist advice should be sought.

Where sensitive areas or significant values are identified and there is potential for a proposed activity to impact on them, surveys will be completed unless the survey is likely to have an adverse impact on the values. The activity proposal will be modified to reduce the impacts and it will be reassessed prior to a decision being made about the activity.

Where it is identified that an activity is likely to impact on cultural values, the community and relevant organisations will be given an opportunity to provide advice where appropriate.

In particular, the Aboriginal community will have an opportunity to provide advice if Aboriginal heritage values are likely to be affected.

INFORMATION FOR ACTIVITY ASSESSMENT

Where field assessment is required, collect or collate the following information:

- known Aboriginal or historic values in the vicinity of the activity (see description of values in General Principles);
- trends in the condition of the site and the factors causing erosion or damage (eg. climatic impacts, reduction in vegetation cover, other use issues);
- current use of the site;
- social values (See Section 4.6) including local community involvement or established recreational or other uses;
- other threats to the identified values;
- likely impact of the proposed activity on the cultural values;
- condition and effectiveness of existing mitigating measures (eg. effectiveness of guttering, culverts, midden stabilisation measures, formed tracks, barriers, educational materials, signs);
- presence of remnant exotic habitat (specialist advice may be required) and related issues in the vicinity of proposed activities.

📌 Specialist advice should be sought on appropriate consultation protocols.

In the absence of policy or specific management documents then the management of cultural values should be guided by the Code and the guidelines and principles of:

- Hague Consulting Limited & Kelly, M. 2000, *Cultural Heritage Management (Parks and Protected Areas) Best Practice*;
- *The Australia ICOMOS Charter for the Conservation of Places of Cultural Significance (The Burra Charter)*;
- Australian Heritage Commission 2002, *Ask First: A Guide to respecting Indigenous heritage places and values*.

Newly identified places will be reported in accordance with the *National Parks and Reserves Management Act 2002* and the *Aboriginal Relics Act 1975* and should be documented and permanently recorded via the relevant procedure. 📌 Specialist advice should be sought.

A high priority will be given to managing threatening processes or activities that will or have a high potential to diminish the significance of a cultural heritage site.

Features or objects from past use of an area should only be removed or rehabilitated if their presence has been assessed as creating a negative effect on values in the area or is creating a hazard.

📌 Removal of features or objects should only proceed following specialist advice and authorisation.

See Section 6.7 (Built Structures) for information on supporting documents required for development applications.

Where public access to a cultural heritage site is likely to result in unacceptable impacts on site values, then access should be altered, limited or prevented as appropriate.

Sites of cultural heritage significance will not be publicised or promoted where this could result in damage to site values.

Sites of cultural significance that are publicised or promoted to the public should be managed to protect the values from threats arising from increased visitation.

Minimal impact practices should be promoted to visitors.

Any activity undertaken to protect an Aboriginal site that involves covering, concealing or otherwise interfering directly with an Aboriginal site will require a permit under the *Aboriginal Relics Act 1975*.

Permits for other activities that are likely to affect an Aboriginal relic as described under the *Aboriginal Relics Act 1975* will be obtained where required.

Specialist advice will be sought where there is uncertainty about the implications of the *Aboriginal Relics Act 1975* in regard to the definition of Aboriginal relics.

Specialist advice should also be sought when:

- activities are proposed for a place listed in the Tasmanian Historic Places Inventory;
- activities are proposed for a Registered Place or a Place within a Heritage Area as declared under the *Historic Cultural Heritage Act 1995*;
- a conservation policy or plan is required for a cultural heritage site.

Approval of the Tasmanian Heritage Council will be sought for activities proposed for a place listed in the Tasmanian Historic Places Inventory and for activities proposed for a Registered Place or a Place within a Heritage Area as declared under the *Historic Cultural Heritage Act 1995*.

A recurrent maintenance plan should be developed in conjunction with specialists for all actively managed cultural heritage sites and structures.

Under Part IV Section 14(1) of the Aboriginal Relics Act 1975 no person, otherwise than in accordance with the terms of a permit granted by the Minister on the recommendation of the Director (of Parks and Wildlife),

- *shall destroy, damage, deface, conceal, uncover, expose, excavate, or otherwise interfere with a relic ...*
- *remove a relic from the place where it is found or abandoned...*

The Tasmanian Heritage Council has published significance thresholds for the criteria for entry on the Tasmanian Heritage Register. Information about the Tasmanian Heritage Council can be found at www.tasheritage.tas.gov.au



Photograph Louise Gifford

Ernie Bond's homestead, Gordonvale, Southwest National Park.

A key place is a site of cultural heritage significance, identified through a strategy, management plan or other planning or policy document as being suitable for interpretation and other visitor facilities.

Aboriginal communities include:

- *Tasmanian Aboriginal Land Council*
- *Tasmanian Aboriginal Centre*
- *Tasmanian Aboriginal Elders Council*

Maintenance should be performed in accordance with a recurrent maintenance plan where it exists. ❶ Where a maintenance plan is not available and the rehabilitation or repair of a culturally significant place is required, specialist advice should be sought before proceeding.

Development of key places should focus on enhancement of significant values and, where appropriate, visitor access should be improved and promoted.

❶ Specialist advice should be sought when the conservation, development and promotion of key places is proposed.

4.5.1 Cooperative Management of Aboriginal Values

GENERAL PRINCIPLES

The Tasmanian Aboriginal community has a special relationship with many reserves because of its long association with these areas. Members of the community experience a unity with the land and consider natural and cultural values inseparable.

This special relationship is best maintained by ensuring active participation by the Tasmanian Aboriginal community in the protection, conservation, presentation and cultural use of Aboriginal values in reserves.

The following areas are of particular interest to the Aboriginal community: burial grounds, some caves, traditional animals (hunting), plants (collecting) and minerals (eg. ochre), fire, landscapes, native forests, old (eg. Aboriginal) and new (eg. bushwalking) tracks and the interpretation of Aboriginal culture. This list is not exhaustive as the Aboriginal community views the entire landscape as its heritage.

The rights of the Aboriginal community to take resources for cultural reasons were recognised by the *Living Marine Resources Act 1995*, which allows Aboriginal people to take marine resources for traditional purposes. The *Aboriginal Lands Act 1995* provides for similar hunting and gathering rights over Aboriginal land.

The process of recognising and integrating cooperative management of Aboriginal values with the Aboriginal community is dynamic and subject to change. Strategic planning documents such as reserve management plans and negotiated agreements can be used to clarify management roles.

Clear lines of communication between the reserve management body and organisations representing the various sectors of the Tasmanian Aboriginal community are essential for maintaining Aboriginal community involvement in the protection, conservation and, where appropriate, presentation and cultural use of Aboriginal values in reserves.

Research into Aboriginal cultural knowledge can assist in land management.

It is an objective for reserve management to increase Aboriginal management of Aboriginal values.

BASIC APPROACH

Management for Aboriginal values will be consistent with relevant statutory requirements and the reserve's management plan or other approved planning or policy document (where one exists).

The *Tasmanian Wilderness World Heritage Area Management Plan 1999* reflects the results of the most comprehensive collaboration between the Aboriginal community and reserve managers yet undertaken in Tasmania. As such, it should be referred to as a guide to cooperative management arrangements in other reserves. However, these arrangements will need to take into account future policy developments.

The following prescriptions are derived from the *Tasmanian Wilderness World Heritage Area Management Plan 1999* and should be used to guide the process of cooperative management in the absence of policy.

Reserve managers should be pro-active in working cooperatively with the Aboriginal community to identify, protect, conserve and present Aboriginal values. State-wide as well as local interests need to be recognised.

Where an agreed set of Aboriginal values has been identified, the Aboriginal community will be consulted and involved in developing and refining existing land management strategies and practices for managing them. 🗣️ Specialist advice should be sought on appropriate consultation protocols.

Aboriginal people should be encouraged to participate in joint management arrangements in areas that are significant to them.

4.6 Social Values

GENERAL PRINCIPLES

Social values are sometimes seen as a sub-set of cultural values.

Places of social value include those that:

- provide a spiritual or traditional connection between past and present;
- tie the past affectionately to the present;
- restore a disempowered group's history;
- provide an essential reference point in a community's identity;
- are prominent in daily life;
- have shaped some aspect of community behaviour or attitudes;
- are distinctive;
- are accessible to the public and offer the possibility of repeated use to build up associations and value to the community of users;
- act as a location for community gathering.

Key principles for identifying social or community values can be found in Russell et al. (1998). See below or Key Sources.

Information sources include:

- Coakes, S. 1999, *Consulting with communities: a policy maker's guide to consulting with communities and interest groups*;
- Johnston, C. 1992, *What is Social Value?*;
- Russell, J., Cubit, S., Johnston, C., and Hepper, J. 1998, *Assessing Cultural Values in Natural Areas: The Upper Mersey Valley*;
- Agency guidelines and strategies for consultation and communication. See Key Sources.

BASIC APPROACH

🗣️ See Section 3 (Activity Assessment) and Key Sources for further information on community consultation.

The assessment and management of places that are likely to have significant social values should involve the communities who use them, live close by or regularly visit.

Observation, questioning, mapping areas of use, feedback to clarify points and recording oral history can be used to understand social values.

The methods used should be appropriate and acceptable to the community.

🗣️ Specialist advice should be sought when designing visitor surveys.

The nature and degree of significance should be assessed. This involves:

- determining which people, interest groups or community sectors consider the place important and why;
- assessing the relative value of a place compared to other places valued by the same people, interest group or community sector;
- determining how its significance relates to the fabric of the place.

Strategies and practices may include developing a joint animal, plant and material use policy; the strategies for implementing that policy; the appropriate level of Aboriginal co-management and Aboriginal representation on relevant management committees.

Social value is about collective attachment to places that embody meanings important to a community. These places are usually community owned or publicly accessible or in some other way 'appropriated' into people's daily lives. Such meanings are in addition to other values, such as aspects of history or beauty, and these meanings may not be obvious in the fabric of the place, and may not be apparent to the disinterested observer. (Johnston, 1992)

Social values may need to be assessed where a proposed activity or development may alter the pattern of use by a local community.

The options for conserving the value should be explored.

🔊 Specialist advice should be sought where proposed activities are likely to significantly affect social values.

Where they exist, policies, strategies and procedures for consultation should be used.

4.7 Recreational Values

GENERAL PRINCIPLES

The objective of managing recreational opportunities is to maintain a spectrum of opportunities, ranging from those that are more developed and in accessible locations to those that are undeveloped in remote areas, while taking account of other reserve values including wilderness quality.

Recreational activities are often interlinked with the social values of a place. This is particularly so if those activities have a long history and/or provide the means and a venue for community bonding.

BASIC APPROACH

🔊 See Section 3 (Activity Assessment) and Key Sources for further information on community consultation.

Opportunities for a range of recreational activities should be provided or maintained where they are consistent with the reserve's management objectives, and are in accordance with existing strategies and a reserve's management plan, or other approved planning or policy document.

New recreational opportunities should only be developed where:

- the impacts on natural and cultural values can be either avoided or minimised;
- the experience of other users will not be diminished.

Safe and minimal impact recreational practices should be promoted. 🔊 See Section 7 (Recreational Codes of Conduct).

Non-compatible uses and recreational activities should be separated.

Visitor activities and infrastructure should be managed to provide a high quality experience for users.

Formal reserves provide for a wide range of recreation pursuits including sightseeing, picnicking, walking, rafting, canoeing, fishing, skiing, caving, climbing, boating, bike riding, horse riding and hunting.

Some recreation opportunities are only used by a narrow section of the population.



Where values are threatened by a recreational pursuit the following options should be considered:

- regulating visitor numbers;
- providing alternative sites or opportunities;
- educating and informing visitors;
- protection measures such as hardening surfaces and installing barriers.

The social value of a recreational activity should be evaluated where it is proposed that it be regulated or limited.

🔍 See Section 4.6 (Social Values) and 6.1 (Provision of Visitor Services and Infrastructure).

4.8 Environmental Quality (Air, Water, Noise)

GENERAL PRINCIPLES

The objective of managing environmental quality is to maintain or restore the natural quality of air and water and the natural level of noise in the environment.

Environment Protection Policies (EPPs), prepared in accordance with section 96 of the *Environmental Management and Pollution Control Act 1994*, are regulatory mechanisms for the protection of environmental quality in Tasmania. EPPs on Noise and Air Quality (in prep.) aim to address significant issues and provide a framework for addressing them.

The statutory management objective 'to preserve the quality of water and protect catchments' applies to all classes of reserved land under the *National Parks and Reserves Management Act 2002*, *Forestry Act 1920* and the *Crown Lands Act 1976*.

The *State Policy on Water Quality Management*, prepared under the *State Policies and Projects / Act 1993*, aims to achieve the sustainable management of Tasmania's surface water and ground-waters by protecting or enhancing their qualities while allowing for sustainable development in accordance with the objectives of the Resource Management and Planning System. It requires the protection of Protected Environmental Values (PEVs) as identified in consultation with the community.

PEVs are the current uses and values for a waterbody. The categories of PEVs listed in the State policy are:

- protection of aquatic ecosystems
- recreational water quality and aesthetics
- raw water for drinking water supply
- agricultural water uses
- industrial water supply.

Water quality objectives (WQOs) are the most stringent set of water quality guidelines which need to be met to achieve all of the PEVs identified for a waterbody.

WQOs comprise set levels of key indicators and are used to measure the success of strategies and actions to manage pollution from point and diffuse sources.

🔍 See Section 5.7 (Dangerous Goods and Agricultural Chemicals) for information on reserve managers' obligations to protect the environment (including water resources and air quality) under the *Environmental Management and Pollution Control Act 1994*.

BASIC APPROACH

Unless there is good reason to make an exception, all reserves will have Protected Environmental Values assigned to them.

The existing quality of the air, water and noise environment should be evaluated when an activity or development is proposed that may affect these aspects. A risk management plan should be developed where risks to the environment are considered to be significant.

Water Information Web Site
Information on water resources, state policies, water management, use, protection and water facts can be accessed at www.dpiwe.tas.gov.au then visit >water.

Protected Environmental Values

A. Protection of Aquatic Ecosystems

- pristine or nearly pristine ecosystems for those watercourses with their headwaters in the reserve
- modified (not pristine) ecosystems from which edible fish, crustacea and shellfish are harvested for all other waters within the reserve

B. Recreational Water Quality and Aesthetics

- primary contact
- secondary contact
- aesthetics

Where the water has other uses then one or more of the following PEVs will also apply:

C. Raw Water for Drinking Water Supply

- subject to coarse screening plus disinfection (eg. for town water offtake)

D. Agricultural Water Uses

- stock watering

E. Industrial Water Supply

4

Looking After Reserve Values

Monitoring on the Overland Track to assess impacts of human activity and infrastructure on water quality.



Photograph Mike Drifessen

Activities will be planned and carried out in ways that minimise or avoid impacts on air, water and noise quality and comply with the requirements of Environment Protection Policies and the *State Policy on Water Quality Management 1997*.

Community interest in and concerns about environmental quality should be identified where an activity might have an impact on the environmental quality.

Threats to the quality of air, water and noise levels should be identified and actions should be taken to halt or minimise those impacts.

Where an impact on the quality of air, water or noise level is unavoidable, every effort should be made, using accepted modern technology and best practice environmental management, to minimise the impact and, where practicable, to restore natural parameters that have been disturbed.

Where environmental quality in a reserve is being, or could be, affected by an activity external to a reserve, options for avoiding or ameliorating the impacts should be explored in consultation with the proponent of the activity.

Management procedures and strategies should be developed to ensure that unacceptable impacts arising from management activities are avoided.

Indigenous vegetation along waterways will be protected from unnecessary disturbance. Where natural streamside vegetation has been cleared or degraded, consideration will be given to re-establishing native vegetation where this will contribute to improved water quality.

▶ See Section 5.6 (Land Rehabilitation).

The use of pesticides and herbicides near waterbodies will be avoided where this could adversely affect water quality.

▶ See Section 5.7 (Dangerous Goods and Agricultural Chemicals) and 5.2 (Weed Control) for references and guidelines on the use of herbicides.

Sites where active erosion is significantly reducing water quality should be prioritised for soil conservation and land rehabilitation works.

Acoustic environmental quality objectives provided in the draft Environmental Protection Policy (Noise) can be referred to as a guide for appropriate indicators of noise level in the environment.

► See Section 5.5 (Soil Conservation), 5.6 (Land Rehabilitation) and 6.4 (Road Maintenance, Closure and Barriers) for more information.

The *Guide to Best Fire Management Practice for Land Managers in Tasmania* should be consulted for guidelines on smoke management. ► See Section 5.1 (Fire Management).

Activities resulting in noise emissions that are likely to disturb fauna or inconvenience visitors should be minimised as far as practicable. These activities, if unavoidable, should be undertaken at times or locations that will cause least disturbance to fauna or inconvenience to visitors.

► See Section 6.6 (Air Access) for prescriptions relating to the noise associated with aircraft.

Monitoring

Monitoring of an activity or area should be prioritised in accordance with available resources, to include those areas most at risk of significant effects on water quality.

Where monitoring is undertaken, parameters will comply with the requirements of the *State Policy on Water Quality Management 1997* and will include the key indicators for Water Quality Objectives as determined for the waterbody by the Board of Environmental Management and Pollution Control and public health authorities.

Monitoring the effects of reserve management activities and reserve user activities on water quality should comply with the requirements of the State water quality monitoring strategy, once developed. Existing, documented water sampling techniques and procedures should be complied with. See Key Sources.

The results of monitoring should be taken into account when evaluating activity proposals.

Key indicators for monitoring water quality include:

- *biological (eg. number of coliforms, type and abundance of phyto and zooplankton);*
- *physical (eg. turbidity, total dissolved solids, temperature); and*
- *chemical parameters (eg. dissolved oxygen, pesticides, nitrates).*

Guide to Best Fire Management Practice for Land Managers in Tasmania contains the latest state-wide policies, procedures and protocols for bushfire control and planned fires. This is available at www.sfmc.tas.gov.au

This section contains prescriptions for management activities that, if undertaken appropriately, can reduce threats to reserve values. Existing protocols, guidelines and standards are referred to. Where there is not an appropriate reference document, detailed prescriptions are provided.

5.1 Fire Management

GENERAL PRINCIPLES

Fire management in reserves is conducted in accordance with the following documents:

- *Inter-agency Fire Management Protocol*;
- *Guide to Best Fire Management Practice for Land Managers in Tasmania*;
- *Planning Conditions and Guidelines for Subdivisions in Bushfire Prone Areas*;
- Ramsay, G.C. and Dawkins, D. 1993, *Building in bushfire prone areas*, SAA HB 36-1993 Standards Australia, CSIRO;
- Schahinger, R. 2003, *Conservation of Tasmanian Plant Communities threatened by Phytophthora cinnamomi. Strategic Regional Plan for Tasmania*;
- relevant fire management plans;
- *Using Low Intensity Fire in Land Management* (available at www.sfmc.tas.gov.au).

The primary objective of fire management is to protect human life and property from fire. Other objectives include the maintenance of natural diversity of species and communities through applying appropriate fire frequencies and the protection of conservation values from adverse impacts due to fire in so far as these are consistent with the primary objective.

These objectives can be promoted by measures which:

- minimise the number, size and intensity of bushfires (unplanned fires);
- prepare for, and respond effectively to, bushfire;
- collaborate with neighbours and other agencies to prevent and suppress inappropriate fires;
- maximise safety and environmental sustainability in planned burning practices.

It is recognised that, for the maintenance of long-term ecological sustainability, planned (ecological) burns sometimes result in the short-term degradation of aesthetic values.

BASIC APPROACH

Fire management will comply with relevant statutory requirements.

- ▶ See Section 8 (Approval Processes and Statutory Powers) and 3 (Activity Assessment) for further information on the assessment and approval of activities.

5.1.1 Bushfire

The following prescriptions for bushfire should be applied where it is practical to do so, unless the urgency of the situation prevents it.

Control of bushfires on, or threatening, a reserve will be given priority over all normal reserve management activities.

All fire fighting operations will comply with relevant occupational health and safety standards, guidelines and protocols in accordance with the *Workplace Health and Safety Act 1995* (Part 3) and the *Workplace Health and Safety Regulations 1998* (Regulations 23, 24 and 25).

Planning for the construction of infrastructure (ie. tracks, base camps and water holes) for fire management will consider potential impacts on natural and cultural values.

The impact of a planned (hazard reduction) fire on the natural and cultural values of a reserve will be considered. If appropriate, where the impact on values is likely to be significant, an alternative approach should be identified and employed.

- ⓘ Specialist advice should be sought to determine the impact.

Where specialist advice agrees, consideration should be given to allowing a wildfire to burn where it is likely to improve ecological diversity and is not likely to threaten neighbouring properties.

Access

Where vehicle access is required for fire fighting, and wherever possible, existing tracks should be used if suitable, instead of constructing new ones.

❶ If feasible and appropriate, information about natural and cultural values should be consulted and specialist advice should be obtained where information is not available:

- before cutting new tracks or using heavy machinery off existing access tracks;
- when the use of vehicles is required in *Phytophthora cinnamomi* Management Areas.

❷ See Section 4 (Looking After Reserve Values) for relevant sources of information.

❸ Permanent fire access tracks should be constructed and maintained to meet the requirements of Section 6.3 (Roads and Vehicular Tracks) and 6.4 (Road Maintenance, Closure and Barriers).

Where access for personnel and equipment is required in remote or visually sensitive locations, helipads should be considered instead of constructing new access tracks.

❹ See Section 6.6 (Air Access) for details on the construction of helipads, and 'Aircraft' below.

Fire control lines

Where practicable, the location and method of constructed control lines should:

- minimise disturbance of vegetation and soil;
- avoid undue side-cutting and filling;
- avoid the creation of windrows of vegetation and soil;
- be located outside stream-beds and identifiable riparian zones.

Providing the primary fire management objectives can be met:

- hand-constructed control lines should be considered before creating bulldozed trails;
- the removal of overstorey vegetation should be located to avoid significant visual intrusion into the skyline and areas known to be of high visual value.

❺ See Section 4.3 (Landscape) for information on visual management.



Photograph: Mike Driessen

This fuel reduction burn near Lake St Clair aimed to reduce the risk of fire spreading into fire-sensitive habitat and property.

Aircraft

Use of aircraft will be thoroughly planned and satisfy agency and aviation authority requirements regarding competence and endorsement of personnel.

▶ See Section 6.6 (Aircraft Access) for information on the construction of helipads and use of low exhaust helicopters.

Disease, pest plants and animals

Fire-fighting equipment, including rake-hoes and other hand tools, boots and vehicles should be maintained in a clean and mud-free condition well before fire suppression activities are likely.

Specific management prescriptions will apply to declared *P. cinnamomi* Management Areas. The relevant specialist should be consulted to determine these. Fire suppression strategies that do not involve personnel or machinery entering Management Areas should be employed where practicable. Control lines outside of the Management Areas should be utilised where burning of these areas is acceptable.

▶ See Section 5.3 (Plant Disease Management) for further information on Management Areas and the *Phytophthora cinnamomi Management Manual* for procedures.

Fuel dumps and machinery servicing

Fuel dumps and places for servicing machinery will be located and undertaken at sites where pollution of streams or wetlands can be avoided.

Management of dangerous or hazardous substances

Goods that have potential to cause environmental harm (eg. foam concentrates) will be adequately secured when being transported, to ensure that they do not become dislodged.

▶ See Section 5.7 (Dangerous Goods and Agricultural Chemicals) for the transport of goods that are classified (including petroleum products) under the *Dangerous Goods Act 1998*.

Removal of rubbish

Any rubbish (including waste oil, empty drums, discarded machinery parts and general litter) generated during fire fighting will be removed as soon as practicable to an approved waste disposal site.

Rehabilitation

The rehabilitation requirements of areas affected by bushfire will be considered as soon as practicable after a wildfire is declared safe. The following issues should be considered:

- erosion hazards caused by soil disturbance or exposure due to the construction of temporary fire access tracks, helipads, camps and control lines;
- closure and rehabilitation of temporary fire access tracks that are no longer required for fire or other management purposes, once the fire is declared safe and rehabilitation works are completed;
- removal of soil and vegetation deposited in streams or wetlands by fire fighting operations, provided this can be achieved without a resultant increase in environmental disturbance.

▶ Rehabilitation requirements for specific flora and fauna values affected by the fire or fire fighting operations will be determined in consultation with relevant specialists.

▶ Rehabilitation works will be carried out to meet the requirements of Section 5.6 (Land Rehabilitation).

5.1.2 Planned Burns

Each planned burn will be subject to an approved burn plan following the format provided in approved documents. See General Principles, this Section.

Planned burning should be conducted in accordance with the information source: *Using Low Intensity Fire in Land Management*.

The location of the planned fire boundary will take into account fire control requirements and the natural and cultural values (including Aboriginal resources) present at the location.

Planned burns include hazard reduction burns and ecological burns for the maintenance of biodiversity.

The officer in charge of the burn will adopt measures for the control of the burn so that the final area of the fire is, as far as practicable, within the defined fire boundary.

Planned (hazard reduction) burning should not take place in areas known to support significant fire-sensitive species unless adequate measures are undertaken to protect these species or the risk of bushfire is very high.

Planned burns should not be conducted near cave entrances, sinkholes and other karst features that could be adversely affected by fire. 📍 Specialist advice should be sought where there is uncertainty regarding the presence of karst features or their susceptibility to fire.

Where planned burns are conducted with the objective of maintaining or enhancing Aboriginal resources, planning should involve the Aboriginal community. 📍 See Section 4.5 (Cultural Values) and 4.5.1 (Cooperative Management of Aboriginal Values).

Planned (ecological) burns to maintain habitat should only be considered where fire-adapted species are dominant and where fire-sensitive vegetation can be protected from the burn.

📍 Specialist advice should be obtained to determine appropriate protective measures.

📍 Consultation with the Threatened Species Unit of DPIWE will be required where threatened species are known to occur within the area and are likely to be adversely affected by a planned burn.

Planned (ecological) burning should be:

- undertaken in accordance with fire frequencies appropriate to the maintenance of targetted elements of biodiversity. 📍 Specialist advice should be obtained to determine appropriate fire frequencies;
- carried out so as to minimise the risk of fires of a frequency and/or intensity that is likely to cause significantly accelerated erosion; and/or
- carried out so as to minimise the risk of peat fires.

Rehabilitation

Rehabilitation will be in accordance with the prescriptions in Section 5.6 (Land Rehabilitation).

Monitoring

📍 The outcomes of planned (ecological) burns will be monitored where specialist advice indicates that it is desirable to:

- establish whether fire management objectives have been achieved; or
- monitor the response of natural and cultural values to the burn.

Any program of prescribed burning to maintain habitat will incorporate a monitoring program to assess the effects of burning on target species and other species.

Monitoring of an activity or area should be prioritised in accordance with available resources, to include those areas most at risk of significant impacts from prescribed burning.

5.2 Weed Control

GENERAL PRINCIPLES

Any plant species, including native species, growing outside its natural range, is a potential weed. Weeds have a detrimental effect on reserve conservation values, and can spread to neighbouring properties.

Weed control must be prioritised according to species and potential impact, feasibility of treatment and available resources.

The objectives of weed management are to protect conservation values by:

- preventing or minimising the spread of weeds in accordance with specified statutory obligations;
- preventing or minimising the invasion of native plant communities and habitats by weeds;
- managing culturally significant introduced plants while providing for the protection of natural and cultural values to the maximum practicable extent.

Using Low Intensity Fire in Land Management contains prescriptions that include limitations on weather (temperature, relative humidity, wind speed), fuel dryness, soil dryness and season.

Prescriptions aim to ensure that a planned fire is controlled, meets ecological requirements (eg. avoids bird nesting times) and minimises the impact on soils and peat.

DATABASES AND WEB SITES

The most recent list of weeds declared under section 10 of the Weed Management Act 1999 can be found at www.thelaw.tas.gov.au > Statutory Rules > Weed Management (declared weeds) Order 2001

General information on weed management including information sheets and weed management plans can be found at www.dpiwe.tas.gov.au then visit > quarantine, pests and diseases > weeds & other pests.

The **Tasmanian Environmental Weed Database and Weed Treatment Database** is available via the Geryon server (PWS restricted site).

Local provenance - See Section 5.6 (Land Rehabilitation) for the definition of this term.

Weed control is most effective if undertaken as part of a regional, community-based strategy, as promoted by the *WeedPlan: A Tasmanian Weed Management Strategy*.

The *Weed Management Act 1999* is the principal legislation for the declaration and control of weeds in Tasmania.

Plant species declared as weeds under the *Weed Management Act 1999* must be managed in accordance with the Weed Management Plan which is prepared in accordance with the Act. Reserve managers may be subject to control notices issued by weed inspectors appointed under the Act and to penalties detailed in the Weed Management Regulations 2000.

Some introduced plants, including weeds, contribute to the significance of sites of cultural and historical significance.

Legislation and associated codes of practice control the storage, use and handling of chemicals including those used for weed control.

It is the reserve manager's responsibility to protect people and the environment during the application of chemicals by ensuring guidelines and instructions are followed.

▶ See Section 5.7 (Dangerous Goods and Agricultural Chemicals) for more information on the storage, use and handling of agricultural chemicals.

The use of chemicals must not prejudice the achievement of the water quality objectives as determined under the *State Policy on Water Quality Management 1997*.

▶ See Section 4.8 (Environmental Quality).

Information sources include:

- Blood, K. 2001, *Environmental weeds: a field guide for SE Australia*;
- *Code of Practice for Ground Spraying*;
- Databases and web sites;
- *Guideline for Safe and Effective Herbicide Use near Water*;
- Hyde-Wyatt, B. and Morris, D. 1980, *The Noxious and Secondary Weeds of Tasmania*;
- Hyde-Wyatt, B. and Morris, D. (in press) *Tasmanian Weed Handbook (revised)*;
- Kirkpatrick, J.B. and Gilfedder, L.A. 1999, *Tasmanian Bushcare Toolkit: No.3 – weeds in your bush*;
- Muyt, A. 2001, *Bush Invaders of South-East Australia: a guide to identification and control of environmental weeds found in South-East Australia*;
- regional weed management plans and strategies;
- *Responding to Incursions: A Generic Incursion Management Plan for Forest Pests and Diseases*;
- *Tasmanian Washdown Guidelines for Weed and Disease Control* (in press);
- *WeedPlan: A Tasmanian Weed Management Strategy*.

BASIC APPROACH

Reserve weed management programs should be integrated with regional weed management strategies where they exist.

Occurrences of suspected new weed species in Tasmania will be identified, reported and responded to in accordance with the recommendations of *Responding to Incursions: A Generic Incursion Management Plan for Forest Pests and Diseases*.

Weed prevention

Non-native or non-local provenance plants will not be deliberately introduced unless permitted in a management plan or an approved program to maintain or restore cultural values or in a threatened species recovery plan for maintenance of an existing situation.

▶ The use of marram grass as an erosion control measure will be in accordance with Section 5.6 (Land Rehabilitation).

Where disturbance to soil and/or vegetation could increase the risk of weed infestation, the site of the disturbance should be monitored and weed infestations responded to appropriately. Monitoring should be prioritised in accordance with available resources, taking into account the potential for weed infestation and the level of threat to natural values.

The potential for vehicles to spread weed seed should be recognised and appropriate measures should be taken to reduce the risk of spreading weeds via this method.

As far as practicable, earthmoving machinery should be in a clean state prior to entering and undertaking works within a reserve at locations that are essentially free of weeds. Before entering a reserve, machinery should be hosed or cleaned (including underneath), removing any dirt or mud that could spread weeds or diseases, unless the urgency of an incident precludes this. For procedures refer to *Tasmanian Washdown Guidelines for Weed and Disease Control* (in press).

Consideration should be given to restricting public vehicle access to sensitive areas where vehicle access is likely to increase the threat of weed invasion.

Where soil and gravel is required for works, priority should be given to obtaining these materials from weed-free stock. Where resources permit, freshly crushed rock that is free of soil should be used as a gravel source if appropriate for the proposed use.

Table drain spoil should be deposited in dump sites that are appropriately sited and subject to weed monitoring and control.

Activities or developments which can increase the nutrient level of soils (eg. wastewater disposal) should be avoided at locations that are weed-free and unlikely to be subject to weed infestation in the absence of increased nutrient status.

Where an activity increases the nutrient level of soil, or disturbs soil, the area should be monitored for weeds. If new weed infestations are detected, these should be subject to appropriate control measures.

Reserve managers should liaise and cooperate with the relevant land manager or owner to control potentially invasive weeds from adjacent areas spreading into or out of reserves.

Planning and assessment

🔍 Specialist advice should be obtained where a suspected weed cannot be identified.

As far as practicable, the extent of a weed infestation should be periodically assessed and appropriate and strategic control measures should be implemented.

Management of introduced plants at sites of cultural significance should seek to control weeds while protecting cultural heritage.

📖 See Section 4.3 (Landscape) and 4.5 (Cultural Values) for more information on the management of cultural landscapes and cultural values.

Weed management activities will give priority to the following situations:

- where weeds endanger threatened species and remnant plant communities;
- where a new species of weed has recently become established and there is potential for it to become a major environmental weed;
- where weeds listed under the *Weed Management Act 1999* have been identified;
- where coordinated regional control programs are already in place.

Particular attention should be given to inspecting and monitoring:

- areas that are prone to weed infestation in a reserve, such as disturbed sites, wastewater disposal sites, roads, tracks and waterbodies;
- areas that are free or relatively free of weeds, including the margins of larger weed-free areas;
- the spread of significant weeds on road and track corridors.

High nutrient levels and disturbed soil favour the establishment and spread of weeds.

Weed control methods

Appropriate weed control methods will depend on the target species, environmental considerations, practicality and costs. ● Specialist advice should be sought where weed control problems are encountered.

Weed control techniques will consider possible impacts on non-target species. The approach may need to be modified to reduce or avoid impacts on non-target species.

Integrated weed management techniques should be applied in order to reduce the risk of re-invasion and reliance on chemical control methods. That is, factors that make sites susceptible to weed invasion, such as sources of disturbance, nutrient enrichment and the presence of weed vectors, should be identified and addressed.

▶ Where the rehabilitation of affected areas is required following the eradication of environmental weeds, works should be carried out in accordance with the prescriptions described in Section 5.6 (Land Rehabilitation).

▶ The handling, use and storage of agricultural chemicals for weed control will comply with prescriptions specified in Section 5.7 (Dangerous Goods and Agricultural Chemicals).

Agricultural chemical use will comply with the Codes of Practice adopted by the Tasmanian Agricultural, Silvicultural and Veterinary Chemical Council, under the *Agricultural and Veterinary Chemicals (Control of Use) Act 1995*.

Herbicide use along or near waterbodies will comply with the *Guideline for Safe and Effective Herbicide Use near Water* and the *Code of Practice for Ground Spraying*. See the weed management web sites.

Monitoring

Where resources permit, weed control should be followed up by an annual inspection of the infested site to ensure that any recurrence of the target weed is controlled.

Guideline for Safe and Effective Herbicide Use near Water and Code of Practice for Ground Spraying are available at www.tas.gov.au then visit *Food and Agriculture > agriculture and veterinary chemicals > codes of practise, guidelines and information sheets*

Appropriate weed control methods will depend on the target species, environmental considerations, practicality and costs. Primary school students pulling pines at Seven Mile Beach Public Reserve, southeast Tasmania.



Photograph: Brian Campbell

5.3 Plant Disease Management

GENERAL PRINCIPLES

The expression of disease in plant communities is a function of:

- the presence of susceptible plant species;
- suitable environmental conditions; and
- the nature of the pathogen or disease causal agent.

The objective of plant disease management is to maintain natural disease regimes within native plant communities. This objective will be promoted by measures to:

- minimise the introduction of alien plant pathogens to Tasmania, and minimise the spread of established exotic plant pathogens (eg. *Phytophthora cinnamomi* or *Phytophthora* 'root rot');
- minimise the adverse impacts on the ecology of native plant communities, due to introduced plant pathogens (eg. *P. cinnamomi*);
- minimise the unnatural disturbance of native vegetation where this may induce significant levels of disease (eg. myrtle wilt) in the vegetation.

The primary plant disease problems for the management of Tasmanian reserves are *P. cinnamomi* and myrtle wilt.

Phytophthora cinnamomi is a key management issue in the relatively warm and moist lowland parts of Tasmania. Vulnerable vegetation types include heaths, heathy eucalypt woodlands and button grass moorlands.

Phytophthora cinnamomi is unlikely to be an issue in the following situations:

- areas where the altitude is >700 m ASL or the mean annual rainfall is <600 mm;
- rainforest, wet forest or tall (>2m) dense wet scrub (myrtle wilt is a consideration);
- dry sclerophyll vegetation with a predominantly grassy understorey;
- dense coastal scrub, wetland, aquatic or beach vegetation.

A series of special management areas for the protection of plant communities and species that are highly susceptible to *P. cinnamomi* are identified in the *Phytophthora cinnamomi Strategic Regional Plan for Tasmania*. In these areas, control of *P. cinnamomi* is the primary management priority.

Information sources include:

- Databases - Maplink (Parks and Wildlife Service), GTSpot and CONSERVE (Forestry Tasmania);
- *Phytophthora cinnamomi Management Manual* (in press) contains hygiene requirements;
- *Tasmanian Washdown Guidelines for Weed and Disease Control* (in press);
- Schahinger, R. (in press), *Conservation of Tasmanian Plant Communities threatened by Phytophthora cinnamomi*, *Strategic Regional Plan for Tasmania*.

BASIC APPROACH

General disease management

Occurrences of suspected new diseases in Tasmania will be identified, reported and responded to in accordance with the recommendations of *Responding to Incursions: A Generic Incursion Management Plan for Forest Pests and Diseases*.

During reserve management activities, signs of new plant disease (eg. unexplained plant death or decline) that might indicate the presence of introduced pathogens, or the unnatural development of disease associated with native pathogens, should be documented and the relevant specialist notified.

The *Phytophthora cinnamomi Management Manual* (in press) should be referred to for field procedures:

- for recognising plant diseases and for methods of collecting samples for analysis; and
- when moving between infected and uninfected sites (hygiene procedures).

Disturbance (eg. blazing or damaging trees) that could predispose native vegetation to disease (such as myrtle wilt) will be avoided or minimised, particularly where *Nothofagus cunninghamii* (myrtle) is present.

Disturbance of some rainforest and wet sclerophyll communities can result in conditions that allow P. cinnamomi to flourish. This can occur where the forest canopy cover is lost, causing the soil to warm up and create conditions suitable for disease expression.

Databases

Maplink on the Geryon Server, the GTSpot database at www.gisparks.tas.gov.au and the CONSERVE database at Forestry Tasmania provide the following information:

- *Phytophthora cinnamomi* distribution (isolation) records;
- Location of *P. cinnamomi* Management Areas;
- Maps of areas susceptible to *P. cinnamomi*
- Maps of areas suspected to be infected by *P. cinnamomi*.

Relevant specialists are:
Forestry Tasmania's Forest Pathologist for those areas managed by Forestry Tasmania, and DPIWE's Flora Protection Officer for all other areas.

The main means of disease transmission in remote areas is via management vehicles so extra care is needed to keep them free of soil-borne disease.

Options for reducing the level of disturbance, and/or maintaining a buffer zone in the vicinity of susceptible plants, will be considered if an activity is unavoidable.

Management of *Phytophthora cinnamomi*

Prescriptions in the *Phytophthora cinnamomi* Management Manual should be adhered to in areas susceptible to *P. cinnamomi*.

The *P. cinnamomi* distribution records for Tasmania should be referred to when planning activities, so that known sites of infection are considered and avoided where possible.

Specific management prescriptions will apply to any proposed activity within declared *P. cinnamomi* Management Areas. ● Consult the relevant specialist to determine the prescriptions required.

Planning for activities

Specific procedures should be applied as set out in the *Phytophthora cinnamomi* Management Manual, which pertains to a wide range of activities, including site developments; walking tracks; roads and firebreaks; extraction and use of gravel and other quarried materials; fire management; land rehabilitation and aircraft use.

● See Section 6.5 (Non-vehicular Tracks) for more information on wash-down stations.

Generally, when planning a new development or activity the following procedure should be followed:

- Identify whether the area is susceptible to *P. cinnamomi* or myrtle wilt. Check with records on the Maplink, GTSpot or CONSERVE database (Forestry Tasmania).
- If *P. cinnamomi* or myrtle wilt is an issue, check the current disease status of the area. For myrtle wilt, minimise damage to trees.
- If the proposed activity is located in a *P. cinnamomi* Management Area, consult a specialist.
- If *P. cinnamomi* is known to be present, manage in accordance with Table 2.
- If *P. cinnamomi* is not present, or is unknown, but the location is susceptible and not remote (eg. adjacent to a road), manage in accordance with Table 2.
- ● If *P. cinnamomi* is not present or is unknown but the location is susceptible and remote (ie. no or restricted vehicle access), consult a specialist about the activity.



Die-back caused by *Phytophthora cinnamomi*, Meehan Range Nature Recreation Area, southeast Tasmania.

<i>P. cinnamomi</i> status	Threat	Management requirements
Site is infected by <i>P. cinnamomi</i>	Further spread to adjacent susceptible areas	<ul style="list-style-type: none"> ■ If site is not in common use, minimise activity or developments in infected areas. ■ If site is in heavy use, contain activities to existing infected areas and those surrounding areas where spread is inevitable. ■ Avoid the development of new tracks crossing into adjacent uninfected areas.
Site is in an area not known to be infected by <i>P. cinnamomi</i> but is susceptible to infection	Infection of the area	<ul style="list-style-type: none"> ■ If a development is proposed, undertake field surveys of the site and adjacent areas to determine <i>P. cinnamomi</i> status. If surveys confirm disease-free status, the following measures should be applied: <ul style="list-style-type: none"> ■ Minimise activities that have the potential to introduce <i>P. cinnamomi</i>. ■ Control vehicular access along tracks where possible. ■ Apply basic hygiene to high-risk activities, eg. earthmoving operations. ■ Minimise introduction of soil, gravel and plants to the area. Ensure all material introduced is screened for potential <i>P. cinnamomi</i> infection. ■ Maintain vehicles and tools in a clean state for emergency operations, such as fire fighting, in <i>P. cinnamomi</i>-free areas. ■ Restrict activities to times when soils are dry to minimise transfer of <i>P. cinnamomi</i>.

Table 2

General management requirements for sites susceptible to *Phytophthora cinnamomi*

Exotic animals occur in a place as a result of direct, deliberate or accidental actions of humans (not including deliberate re-introductions to an animal's former range) Such as introducing insects for biological control of a pest.

Alien animals are thought to have been introduced by humans, but are now more or less naturalised (eg. corella).

Feral animals are those that have escaped from primary production or domestic sources and have become established in the wild (eg. goats and cats).

5.4 Exotic Animal Control

GENERAL PRINCIPLES

The objective of managing exotic animal species is to minimise and/or reverse their adverse impacts on natural and cultural values. This will be promoted by preventing, as far as practicable, further uncontrolled introductions, and by suppressing or eradicating exotic animal species that threaten values.

BASIC APPROACH

Threats to natural and cultural values arising from the presence of exotic animal species should be identified and control programs should be implemented where this is cost-effective and feasible.

Priority will be given to the early detection of, and response to, new exotic animal species which could threaten values and for which suitable control measures are available.

Control of feral animals will be addressed through control programs, liaison with neighbours, and other measures as appropriate.

Control of alien fauna species should be undertaken where the species is likely to adversely affect natural and cultural values and suppression or eradication measures are cost-effective and feasible. Fauna management plans will be prepared prior to the implementation of major control programs for alien fauna species.

Fauna management plans will incorporate integrated pest management principles.

That is, control methods will be:

- based on coordinated use of information on pests, environmental impact and available control methods;
- implemented by the most economical means that poses the least possible hazard to the environment, people and property.

Biological control methods (eg. the use of exotic insects, bacteria and viruses) either for the purpose of directly controlling other exotic species (eg. insects or plants) or as a vector will be preceded by an environmental impact assessment. Such use would be contemplated only where the assessment indicates that there are no undue risks to the survival of native populations, economic crops, human health and/or property.

Exotic fauna populations may be retained where they contribute to the cultural heritage significance of a place, or are used for control programs for other exotic species. This would be contemplated only where the exotic fauna can be effectively managed to avoid their unplanned spread and/or other unacceptable impacts on conservation values.

Community partnership agreements should be developed as a mechanism for working with commercial beekeepers and be guided by the requirements of the Code.

▶ See Section 9.2 (Beekeeping) for further information.

Where dogs, horses or other domesticated species are permitted to enter a reserve, this will be subject to such conditions or constraints as required to minimise impacts on natural and cultural values.

▶ See Section 4.2 (Flora and Fauna Values) for information relating to the relocation of indigenous Tasmanian fauna.

Monitoring

Monitoring to assess the effects and effectiveness of management methods detailed in fauna management plans should be included in the control program. Success in controlling the target species and unacceptable impacts on non-target species, populations and ecosystems should be evaluated.

Fauna management plans should be reviewed regularly and, if required, modified in the light of monitoring outcomes.

5.5 Soil Conservation

GENERAL PRINCIPLES

The objectives of soil conservation are to:

- maintain or restore natural soil processes, including rates of soil production, erosion and sedimentation; and
- avoid soil degradation except where this occurs as a natural process.

In order to control soil degradation, the underlying causes must be addressed (eg. inadequate drainage on roads and tracks, grazing). In addition, remedial action may be required to alleviate sources of disturbance and restore natural parameters.

Recognising the onset of soil degradation and responding quickly are key actions in protecting soils from damage.

Information sources include:

- Brown, G. and Laffan, M.D. 1993, *Forest Soil Conservation Manual*;
- *Forest Practices Code*;
- Grant, J.C., Laffan, M.D., Hill, R.B. and Neilsen, W.A. 1995, *Forest Soils of Tasmania. A Handbook for Identification and Management*.

BASIC APPROACH

The potential for soil degradation will be considered in determining whether a proposed activity is appropriate at a site. The activity should be modified, or relocated to a less sensitive site, if it is likely to result in soil degradation.

Assessment of the potential impacts of an activity on soil will take into account soil erodibility and degradation potential. See Table 3 for guidance.

Where specific site conditions are not covered by this Code, the *Forest Practices Code* should be used.

Potential for soil degradation is generally higher during wetter periods so activities causing ground disturbance should be scheduled for dry periods.

Roads, four-wheel drive tracks and walking tracks should be managed to minimise soil degradation. Consideration should be given to closing specific four-wheel drive tracks during wet periods if this will reduce soil degradation. This is particularly important for areas with peat soils that are very vulnerable to physical disturbance when wet.

▶ See Section 6.3 (Roads and Vehicular Tracks) and 6.4 (Road Maintenance, Closure and Barriers) for further information on soil conservation.

Speed limits and other restrictions on use of watercraft will be considered where lake and river banks are eroding or threatened by waves generated by watercraft.

Particular attention will be given to reducing the impact of new developments on natural drainage lines. Disturbance to natural drainage channels should be avoided. Runoff from cleared areas will be diverted into existing drainage lines through protected entry points (eg. sediment traps).

Sites with one or more of the following features are likely to be particularly susceptible to erosion and will be given priority in avoiding disturbance to soils and vegetation:

- sand dunes and other unconsolidated substrates;
- soils in the high to very high erodibility classes (Table 3);
- where there is evidence of previous landslips;
- drainage lines, watercourses and river banks with alluvial deposits;
- slopes in excess of 50 m and/or >15°;
- karst and karst catchments;
- glacial deposits;
- peat soils;
- alpine and subalpine areas.

Soil degradation can involve a range of processes, such as: erosion, compaction, puddling, mixing, waterlogging and salting, mass movement (land-slips), frost heave, burning of peat, re-deposition and sedimentation. In some situations these may be natural processes, although soil degradation often occurs when the processes are changed or accelerated as a result of human actions.

The Forest Practices Code provides more information on a range of topics not covered by this Code, including information on and prescriptions for soil erodibility classes, landslide threshold slope angles, assessing soil water status and activities on vulnerable soils and steep land.

❶ Specialist advice should be sought where the disturbance is unavoidable.

Where an activity is unavoidable and is likely to lead to soil degradation, remedial measures will be undertaken to reduce the extent of damage and to hasten site recovery.

Rehabilitation activities should be specified in a rehabilitation plan.

❷ See Section 5.6 (Land Rehabilitation).

Where earthmoving activities are necessary, they should be carried out in accordance with the following guidelines:

- keep ground disturbance to a minimum;
- identify cultural values at the early planning stage and manage in accordance with the Code;
- maintain natural slopes as far as possible;
- provide adequate drainage to the site by diverting runoff into existing drainage lines through protected entry points (eg. sediment traps);
- use appropriate machinery for the particular task;
- incorporate erosion control measures at the same time as the earth works associated with the development;
- retain topsoil for rehabilitation at the site or, if surplus, at other nearby sites requiring rehabilitation;
- time construction to minimise the duration of soil exposure;
- implement measures to prevent the introduction of weeds or disease.

❸ See Section 4.5 (Cultural Values), 5.2 (Weed Control), 5.3 (Plant Disease Management) and 5.6 (Land Rehabilitation) for more information.

❹ Management of erosion hazards on roads and walking tracks will be in accordance with the requirements of Section 6.3 (Roads and Vehicular Tracks), and 6.5 (Non-vehicular Tracks).

Consideration will be given to retaining spoil cleaned from table drains for use in rehabilitating degraded areas unless this conflicts with the management of weeds and soil-borne pathogens.

❺ See Sections 5.2 (Weed Control) and 5.3 (Plant Disease Management) for more information on these topics.

Spoil should not be placed over intact vegetation or in locations where it will erode and contribute to sedimentation elsewhere.

Evidence of accelerated erosion as a result of an activity or development will be assessed as a matter of priority and appropriate stabilisation and/or rehabilitation measures implemented.

High and very high erodibility class soils

Activities planned for high and very high erodibility class soils (Table 3) will require:

- detailed planning;
- equipment and/or machinery that is suited to the conditions;
- a suitably experienced and careful operator;
- close supervision;
- ongoing monitoring to assess erosion.

Disturbance to soil and vegetation on high and very high erodibility class soils should be avoided as far as possible. Where disturbance is unavoidable, priority should be given to protecting drainage lines and mid and lower slopes as the potential for erosion and sedimentation is greatest in these areas.

Interim stabilisation using jute mesh or similar geotextiles should be considered.

Priority will be given to establishing vegetation cover as soon as possible.

Moderate-high, moderate and low erodibility soils

Careful planning and execution of earthworks on all soil types should be conducted where proposed activities have the potential to impact on soils.

Monitoring

Disturbed sites should be periodically checked for evidence of soil degradation and to assess success of rehabilitation. Ideally, checking should be done after heavy rain and/or periods of peak visitation where these factors could influence rehabilitation.

If checking shows that additional remedial measures are required, then these should be carried out as soon as practicable. Interim measures to stabilise rapidly degrading sites may be considered until more permanent repairs can be done.

Parent material	Dominant soils/vegetation	Erodibility	Indicative vulnerability to: (see notes for explanation)		
			Heavy machinery	Vehicles	Trampling
dolerite or basalt siltstone or mudstone sandstone, limestone or dolomite	loam, clay loam or clay with good vegetation cover	low	1	1	1
siltstone or mudstone	loam, clay loam or clay with average vegetation cover	moderate	2	2	1
sandstone, limestone or dolomite	loamy and clayey soils with poor vegetation cover	moderate – high	3	3	2
quartzite or coarse sandstone granite	*loam and sand with sparse vegetation cover or peat (when wet or dry)	high	4	4	3
granite or sandstone weakly consolidated alluvium, colluvium, sands, glacial deposits and dunes deposits	*sand and fine gravel with very sparse vegetation or peat (when very dry or very wet)	very high	5	5	4

Indicative vulnerability is an indication of the likelihood of soil degradation in response to a specified disturbance. Vulnerability scale:

1 = low; 2 = moderate; 3 = high; 4 = very high; 5 = extreme

Vulnerability to degradation will vary with the degree of soil saturation. Most soils exposed by vegetation removal and then subject to heavy rain or high wind will erode. Slope is also critical with long (>50m) and steep (>15°) slopes being most at risk, particularly where the surface soil is loose.

*Note that where vegetation with moderate to high cover occurs on these soil types, but is removed for any reason, then the erodibility class is high – very high.

Table 3

Indicative soil erodibility and degradation potential. This table is intended as an example only. For more complete information on managing soils refer to: Grant et al. 1995, *Forest Soils of Tasmania. A Handbook for Identification and Management*.

5.6 Land Rehabilitation

GENERAL PRINCIPLES

The objective of land rehabilitation is to restore, as far as practicable, the original soil, topography and vegetation of disturbed sites.

There are four basic phases in most rehabilitation projects: planning, earthworks (stabilising the site), revegetation and maintenance.

Information sources include:

- Bacon, C.A. 1999, *Mineral Exploration Code of Practice*;
- *Guidelines for the Rehabilitation of Quarries and Extractive Pits*;
- *Quarry Code of Practice*;
- Duckett, T.A. 1990, *Rehabilitation Guidelines for Forest Construction*.

BASIC APPROACH

Planning

An important part of the preliminary assessment is to identify an activity's potential impact on the environment, the means of minimising the impact and any rehabilitation required. Planning for rehabilitation should include:

- site details: tenure, zoning, location, size;
- proposed earthworks;
- measures for stockpiling topsoil, including measures to ensure the stockpile is stabilised and remains biologically active until required;
- machinery hygiene requirements;
- revegetation treatment, specifying species, seed collection or seedling propagation and broadcasting or planting rates;
- fertiliser requirements, specifying type, application rates and broadcasting method;
- preferred seasons for rehabilitation stages (see Table 4);
- project supervision;
- cost estimates and resources available;
- schedule for appropriate timing of rehabilitation activities.



Earthworks should be carried out to the highest possible standard to avoid the need for machinery to return to the site. Carter Levee, Central Highlands.

Works on sites containing Aboriginal cultural values may require a permit under the Aboriginal Relics Act 1975. Check with a cultural heritage specialist.

Advice should be obtained when developing rehabilitation plans. ❶ Plans should be reviewed by the relevant specialists before work begins.

Where there is continuing disturbance (eg. grazing, vehicle or foot traffic) on a degraded site, this disturbance should be removed as soon as possible and prior to rehabilitation of the site.

Rehabilitation works should be scheduled to coincide with optimum seasonal conditions wherever possible. Table 4 outlines preferred months for specific rehabilitation treatments but should be used as a guide only.

Rehabilitation works should be planned so that successive stages follow on earlier stages with minimal delays.

Some sites will require a special approach to rehabilitation due to the nature of the site itself, the surrounding area or past use of the degraded site. Specialist advice should be sought when planning rehabilitation of the following:

- alpine and subalpine environments;
- sites close to or within areas of high conservation value;
- karst areas or karst catchments;
- sites with Aboriginal relics;
- sites of cultural or historic significance;
- areas with acid mine drainage problems or other contaminated sites;
- coastal sites;
- highly visible areas with high visitation;
- areas with high wilderness quality;
- places with Aboriginal relics;
- sites where there is uncertainty about the appropriate approach to rehabilitation.

Rehabilitation earthworks

Drainage works and reshaping should be considered where it is necessary to provide a stable surface to the site, restore natural contours, or reduce erosion.

Ripping should be considered where soils have been compacted, to enhance soil porosity.

Ripping should be done along the contour to reduce water runoff and increase water infiltration into the site.

Ripping should not be done when the soil is too wet as soil can be moulded into large chunks that damage soil structure.

Rehabilitation earthworks should be carried out to the highest possible standard to avoid the need for heavy machinery to return to the site, as this could hinder and damage rehabilitation.

Machinery operators should be fully briefed on the aims of the project and appropriately supervised.

Disturbances to intact vegetation should be minimised and the movement of machines should be limited wherever possible to existing degraded areas. If there is any possibility of confusion, the boundaries of the operational area should be clearly marked at the site.

Consideration will be given to selecting the most appropriate earthmoving machinery for the site conditions and the task.

Where rehabilitation requires the spreading of topsoil, every effort should be made to ensure that enough material is available. If stockpiled soil is unavailable or insufficient, imported soil should be free of disease and weeds and, as far as possible, be physically and chemically similar to soil at the site being treated.

Phytophthora cinnamomi and weed management protocols will be observed at all stages of rehabilitation. The protocols contain specific requirements for imported soil.

❶ See Section 5.2 (Weed Control) and 5.3 (Plant Disease Management) for more information.

Local provenance will need to be interpreted on a site-specific basis. The aim is to avoid introducing stock from genetically different populations. In general, this can be achieved by collecting seed from within the general area of the site being treated; seed from within 20 km of the site (and preferably the same altitudinal range, geology, soil type and climate) will generally be acceptable if closer sources are unavailable.

Revegetation

Earthworks will be completed and the surface prepared to create suitable conditions for plant growth prior to revegetation.

Revegetation methods should be site-specific, but will generally be by direct seeding. Use of seedlings should be considered where rapid revegetation is required or where adverse germination conditions exist.

Local species of local provenance should be used in revegetating a site.

Seed should be collected from multiple individuals within a species to avoid propagating from a limited number of individual plants.

Where a nurse crop is considered, species of local provenance will be preferred. Non-local provenance nurse crops may be acceptable in some situations (eg. sterile grasses may be considered). Seek specialist advice before using non-provenance nurse crops to determine their appropriateness.

Rehabilitation works should incorporate suitable measures such as monitoring to ensure that these do not cause a weed problem.

A mix of vegetation layers in keeping with the natural vegetation of the site should be considered, eg. grasses and understorey species as well as trees.

Nitrogen-fixing species (eg. *Acacia*, *Pultanaea*, *Bossiaea*, *Kennedia* spp.) should be included in the revegetation program to assist improvement in the nutrient status of the soil, where they occur naturally in the local flora.

Seeding or planting should be timed to coincide with seasonal factors favourable to plant growth (see Table 4).

Table 4
Optimum timing for rehabilitation works. The rehabilitation schedule should allow time for the collection of local seed and/or propagation of seedlings if required. Modified after Duckett (1990).

Treatment	Month											
	J	F	M	A	M	J	J	A	S	O	N	D
Drainage works	-	-	-	-	-	-	-	-	-	-	-	-
Soil stripping	-	-	-	-	-				-	-	-	-
Soil re-spreading	-	-	-	-	-				-	-	-	-
Ripping (before soil re-spreading)	‡	‡	‡	-	-	-	-	-	-	-	-	‡
Ripping (after soil re-spreading)	‡	‡	‡	-	-				-	-	-	‡
Direct seeding (native species)	•	‡	‡	‡	-	-	-	‡	•			
Fertilising	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡

‡ Optimum time for treatments

- Treatments can be undertaken but not during periods of heavy/frequent rain or saturated soil conditions

• Treatment can be undertaken but only when there are moist soil conditions

 Treatment at this time of year not recommended



Photograph Brian Campbell

Spinifex sericeus is a native coastal grass that is suited for stabilising sand dunes.

The use of fertiliser should be considered where this can enhance the rate of revegetation but should not be used in the following circumstances:

- where there is a risk of it polluting surface waters (streams, lakes, dam storages, swamps or wetlands);
- where a karst system or aquifer is present;
- near vegetation that is sensitive to fertiliser, such as heaths on sand or other vegetation which is known to support orchids; or
- if it is likely to lead to a weed problem.

Multiple applications will generally be required, subject to consideration of the potential impacts on water quality.

To protect the soil and help retain moisture, mulching with straw, brush or scrub cleared during the development, geotextiles, or other suitable materials should be considered, particularly on steep slopes or where frost heave is a potential problem. Hay is generally not suitable as it may contain weeds.

Straw bales should only be used if they have been sanitised or otherwise certified free from seed.

Marram grass should only be used to stabilise dunes (ie. to control unnatural erosion) in areas where it is extensively established and then only after consideration of the ecological consequences and whether removal is feasible. All other options for stabilising dunes should be considered before resorting to the use of marram grass.

Where native coastal vegetation is present to a significant degree, the planting of suitable local provenance species together with structural measures such as sand-trapping fences, jute mesh and geotextiles should be considered. See definition of local provenance species above.

Maintenance

The rehabilitation plan will specify ongoing maintenance requirements, such as: additional erosion control and stability works; re-application of fertiliser; re-seeding or replacement planting of unsuccessful seedlings; control of browsing animals; weed control and maintenance of vehicle access barriers, fencing or rehabilitation signs.

Marram grass is considered to be extensively established where it covers more than 50% of the ground in a given area and that area is more than 1 hectare.

Further information on the **Handling, Use and Storage of Hazardous Substances, Dangerous Goods and Agricultural Chemicals** is available at www.dpiwe.tas.gov.au. Follow the links from the DPIWE home page to food and agriculture > agricultural and veterinary chemicals.

Workplace Standards web site has information on safety and storage of chemicals including the **Guidance Note Sheets**. This can be accessed at www.wsa.tas.gov.au then visit publications > general publications.

National Occupational Health and Safety Commission (NOHSC) web site at www.nohsc.gov.au provides information on **Regulatory Packages (including National Codes of Practice)**.

Legislation prescribes as a reference the **Australian Dangerous Goods Code 6**. This is available at www.nohsc.gov.au

The **Australian Dangerous Goods Code 6** may be purchased from the **Australian Government Bookshop**.

Monitoring

Disturbed sites should be periodically checked for evidence of soil degradation and to assess rates of rehabilitation. Ideally, checking should be done after heavy rain and/or periods of peak visitation where these factors could influence rehabilitation.

If a follow-up check shows that additional remedial measures are needed, these should be carried out as soon as practicable. Interim remedial measures to stabilise rapidly degrading sites may be considered as a short-term measure until more permanent repairs can be made.

5.7 Dangerous Goods and Agricultural Chemicals

GENERAL PRINCIPLES

An 'Agricultural Chemical Product' is defined by Section 7 of the *Agricultural and Veterinary Chemicals Code Act 1994*.

A 'Dangerous Good' is a substance and/or article that is prescribed as, or determined to be a dangerous good under the *Dangerous Goods Act 1998* and is listed in the *Australian Dangerous Goods Code 6*. See the web sites for more details.

A 'Hazardous Substance' is defined by the National Occupational Health and Safety Commission's *Approved Criteria for Classifying Hazardous Substances*. See the NOHSC web site.

Generally, hazardous substances are chemicals or other substances that can affect the health of anyone in the workplace causing illness or disease. They are often industrial chemicals but can include agricultural chemicals (such as herbicides), paints, glues, bleaches, detergents, disinfectants and fuels such as petrol, diesel, kerosene and methylated spirits.

The reserve manager has responsibilities under the:

- *Environmental Management and Pollution Control Act 1994* to protect the environment (including specific reserve values eg. water resources and karst systems considered vulnerable to chemical products);
- *Workplace Health and Safety Act 1995* to protect employees from the effects of dangerous goods and hazardous substances; and
- *Local Government (Building and Miscellaneous Provisions) Act 1993* and its relevant regulations to obtain all necessary building and plumbing permits to ensure compliance with the *Building Code of Australia* and the *Tasmanian Plumbing Code*.

These responsibilities are achieved by ensuring:

- that the most cost-effective agricultural chemical consistent with minimum toxicity to humans and the environment is used; and
- storage, transport, handling, application and disposal is in accordance with relevant legislation, codes of practice and guidelines.

The following legislation directs the storage, use and transport of dangerous goods:

- *Dangerous Goods Act 1998*;
- *Dangerous Goods (General) Regulations 1998*; and
- *Dangerous Goods (Road and Rail Transport) Regulations 1998*.

Licensing of premises (a Keeper's Licence) is required under the *Dangerous Goods (General) Regulations 1998* where the chemicals and substances stored are listed as dangerous goods in the *Australian Dangerous Goods Code 6* and where these dangerous goods are stored in quantities that exceed the placarding exemption limits.

Premises that are licensed to keep dangerous goods require Hazchem placarding.

The Workplace Standards web site provides further information on exemptions to licensing.

Diesel fuel requires placarding in accordance with *AS 1940 -1993 The Storage and Handling of Flammable and Combustible Liquids*.

A Material Safety Data Sheet (MSDS) is defined by the *Agricultural and Veterinary Chemicals Code Act 1994* and is required to be displayed under this legislation where agricultural chemical products are stored or used.

Hazardous substances do not commonly occur in the workplace but where they are encountered their handling and storage is directed by the NOHSC *Standard for the Control of Workplace Hazardous Substances* and the *National Code of Practice for the Labelling of Workplace Substances* in accordance with the *Workplace Health and Safety Act 1995*.

▶ See Section 6.12 (Sanitary Systems) for information on the transport and disposal of controlled waste.

BASIC APPROACH

Agricultural chemicals, flammable and combustible liquids, dangerous goods and hazardous substances will be handled, used, labelled and stored in accordance with state legislation and referred standards and codes of practice.

The use of chemicals will not prejudice the achievement of water quality objectives as determined under the *State Policy on Water Quality Management 1997*.

Only chemicals registered by the National Registration Authority will be used for spraying and these will be used in accordance with their approved label.

Only suitably trained people will be permitted to handle, use and apply agricultural chemicals.

Contractors applying agricultural chemicals in reserves will be licensed as required by the *Agricultural and Veterinary Chemicals (Control of Use) Act 1995*.

All persons handling or using agricultural chemicals will have ready access to the Material Safety Data Sheets for those chemicals.

MSDS will be kept in an accessible and visible location in proximity to the goods stored.

Protective equipment will be worn in accordance with the relevant MSDS as supplied by the manufacturer or as per labelled directions.

A risk management approach will be taken for activities that use, transport or store significant quantities of materials that could cause serious or material harm to soils or waters if released.

Emergency procedures will be documented for the storage and use of dangerous goods, agricultural chemicals and fuels.

Agricultural chemical use will comply with the codes of practice adopted by the Tasmanian Agricultural, Silvicultural and Veterinary Chemical Council, under the *Agricultural and Veterinary Chemicals (Control of Use) Act 1995*.

Herbicide use will comply with the *Code of Practice for Ground Spraying*.

The use of chemicals should be minimised wherever practical. Spraying at the appropriate times of year/day and when weeds are young can minimise the use of chemicals.

The most cost-effective agricultural chemical, consistent with minimum toxicity to humans and environmental risk, should be used.

Practices should be adopted that minimise the amount of waste produced. Waste products should be recycled where appropriate.

Any person proposing to use chemicals to control weeds in watercourses or along stream banks should first investigate and, wherever practical, use non-chemical means of control unless it can be demonstrated that chemical control poses a lesser environmental risk than other practical options.

Material Safety Data Sheets are available from the chemical manufacturer.

For Class 3 – Flammable liquids (including diesel, paints and solvents) the aggregate placarding limit is 1.00 kilolitre.

The Code of Practice for Ground Spraying is available at www.dpiwe.tas.gov.au then visit Food and Agriculture > agriculture and veterinary chemicals > codes of practice, guidelines and information sheets.

Fuel, grease, oils, paints, solvents, poisons and other potentially harmful substances will be stored in a location or manner (appropriately banded or contained) in which inadvertent leaks will not enter watercourses, swamps or other still waters, or karst systems, either directly or indirectly.

Large quantities of chemicals should not be stocked unless they are to be used within a short period.

Unwanted chemicals should be returned to the supplier or manufacturer, or otherwise disposed of in accordance with advice from DPIWE.

Empty containers should be triple rinsed, crushed and returned to the supplier or the local council's drumMUSTER collection site (where appropriately marked as eligible for this system), or otherwise disposed of in a manner acceptable to DPIWE.

Rinsate and leftover spray mixes should be managed in accordance with DPIWE guidelines. Refer to the Agricultural and Veterinary Chemicals section of DPIWE's web site for a copy of these guidelines.

Equipment will be maintained in order to minimise fuel leaks.

▶ See Section 6.11 (Waste Management) for prescriptions relating to the transport of controlled waste.

▶ Spills will be dealt with in accordance with prescriptions provided under Section 5.8 (Spills and Emergencies).

Use of chemicals in the vicinity of watercourses and karst systems

Herbicide use along or near waterbodies will comply with the *Guideline for Safe and Effective Herbicide Use near Water*.

▶ Application of chemicals will not be permitted close to karst watercourses or known cave entrances unless approved by a relevant karst specialist.

The person responsible for chemical application will ensure that chemicals do not enter waterbodies directly or indirectly, unless the chemicals are specifically approved for direct application to waterbodies.

Techniques such as wick-wiping and spot or shrouded strip application should be considered next to watercourses.

Where chemical weed control is proposed for, or adjacent to, watercourses, only chemicals specifically approved for these applications will be used.

The Guideline for Safe and Effective Herbicide Use near Water is available at www.dpiwe.tas.gov.au then visit Food and Agriculture > agriculture and veterinary chemicals > codes of practice, guidelines and information sheets.



5.8 Spills and Emergencies

GENERAL PRINCIPLES

Where an incident is likely to cause environmental harm or could potentially cause bodily harm in the workplace, then notification of a Competent or Appropriate Authority is required not more than 24 hours after the incident under the following legislation:

- *Environmental Management and Pollution Control Act 1994*;
- *Dangerous Goods (General) Regulations 1998 (Regulation 82)*;
- *Workplace Health and Safety Act 1995 (Section 47)*.

BASIC APPROACH

Spills of chemical concentrate, dangerous goods or controlled waste will be attended to promptly to reduce the risk of contaminating waterbodies and soil or affecting personnel.

Documented emergency response procedures will be used. In the absence of documented procedures, contact the Incident Response Officer.

Spills that cause or threaten to cause any environmental harm or harm to people will be reported to the Appropriate and/or Competent Authority as required under state legislation not more than 24 hours after the incident has occurred.

An incident can include spills of agricultural or veterinary chemicals, dangerous goods or controlled waste. See Section 6.12 (Sanitary Systems).

Appropriate or Competent Authorities are:

- *relevant local government health officer*
- *Incident Response Officer, Environment Division, Department of Primary Industry, Water and Environment (phone 1800 005 171)*

Contact the Workplace Standards Helpline on 1300 366 322 (for dangerous goods).