

# *Native Vegetation* Monitoring *Strategy*





## BACKGROUND

This vegetation monitoring strategy sets out the long term approach to developing the Department of Primary Industries, Parks, Water and Environment's (DPIPWE) native vegetation monitoring programs. This will facilitate the agency to meet relevant state and national monitoring and reporting responsibilities. It will also assist Tasmanian land managers and stakeholders in understanding, conserving and sustainably managing Tasmania's native vegetation.

DPIPWE is responsible for the conservation of Tasmania's vegetation under the provisions of the Nature Conservation Act 2002, the Threatened Species Protection Act 1995 and the National Parks and Reserves Management Act 2002. The Resource Management and Conservation Division (RMC) of DPIPWE is responsible for vegetation policy, vegetation conservation planning and reporting vegetation status and trends. RMC has the lead responsibility for monitoring distribution, extent and condition of native vegetation in the State. To fulfill this role it must collaborate with other land managers and organisations with vegetation monitoring roles.

## CONTEXT

This Strategy only applies to the monitoring of native terrestrial and aquatic vegetation communities and native plant species (including lower plant orders) within the Tasmanian jurisdiction. Commercial use administered under forestry and mining legislation or plants maintained in horticulture or commercially cropped are excluded.

This Strategy has been produced with a long term outlook (50 yrs) and a 10 year horizon for the objectives and priorities. Changing information expectations, technology, opportunities, and constraints necessarily mean RMC will adopt a progressive and flexible approach to implementation, governed by RMC business planning processes.

## VISION

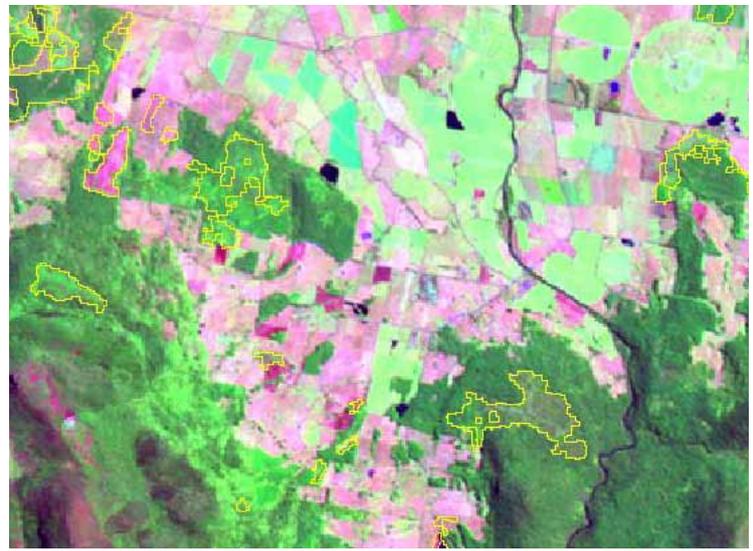
To provide comprehensive, adequate and representative native vegetation information to DPIPWE and its stakeholders, to meet the policy, planning and land management knowledge requirements for the conservation and sustainable use of native vegetation.

## STRATEGY

RMC has identified the following 10 objectives to progressively improve the coverage, coordination, accuracy, quality, accessibility and reporting of native vegetation information in Tasmania. Objective 1 identifies the RMC native vegetation monitoring priorities across 5 vegetation information themes. Objective 2 aims to ensure monitoring remains relevant to land management. Objectives 3 to 10 provide for the development of systems to improve efficiency and effectiveness of RMC monitoring resources. Under each objective a number of high priorities are identified.



2005



2010

**Objective 1. Collect comprehensive, adequate and representative vegetation information**

RMC will keep under review and align vegetation monitoring activities with the following key monitoring themes:

**Distribution and Extent of Native Vegetation**

Monitoring the distribution and extent of native vegetation establishes a baseline for the distribution of vegetation communities in Tasmania and identifies trends in distribution and extent (total area) over time. The priorities for monitoring the distribution and extent of native vegetation are to:

- Maintain and progressively update the Tasmanian Vegetation Base Map (TASVEG) including:
  - o Maintaining the vegetation field mapping program
  - o Enhancing systems for stakeholder (Land management agencies, NRM, NGOs and Consultants) collaboration on base map improvement
  - o Improving the rate of integration of vegetation mapping undertaken by stakeholders that meets the TASVEG mapping standards
- Periodically resurvey the extent of native vegetation in Tasmania

**Condition of Native Vegetation**

Native Vegetation Condition Monitoring is needed to determine the general condition of vegetation across Tasmania and assess trends over time, and secondly to track in detail, trends in condition at specific sites for management and research purposes. In order to achieve this RMC's priorities are to:

- Develop and update a statewide vegetation condition assessment and map comprising landscape-scale measures supported by stratified reference sites that integrate, as far as practical, with related fauna and other environmental monitoring

- Coordinate and incorporate existing datasets and identify additional reference sites required to support a statewide vegetation condition assessment. Sites should capture the major vegetation ecosystems, vulnerabilities, values and land management practices. Monitoring priorities include:
  - o Maintaining the private reserve vegetation condition monitoring program and seeking to expand collaborative contributions from stakeholders
  - o Maintaining and developing the public reserve system vegetation condition monitoring program including implementing the Tasmanian Wilderness World Heritage Area Vegetation Monitoring Program
  - o Collaboration to maintain and develop vegetation condition monitoring across the range of native vegetation management regimes on non-reserved lands
  - o Implement the monitoring component of the RMC climate change program
  - o Coordinate forest health monitoring in native ecosystems with Forestry Tasmania
- Revise and improve the non forest TASVEG Vegetation Condition Assessment (VCA) method for site based assessments
- Encourage stakeholder collaboration with collecting TASVEG VCA data and incorporate into a single database
- Improve vegetation threat mapping (e.g. pests, weeds, dieback and pathogens)
- Develop vegetation community attributes that identify potential vulnerability to threat (e.g. fire sensitivity)
- Encourage and collaboratively establish a statewide fire history map



### Distribution and Abundance of Plant Species

Monitoring under this objective will assist in determining the current distribution of plant species across Tasmania, their reservation status, and detect changes over time. For select species (e.g. threatened species) monitoring may also extend to determining population size and trends over time. In order to achieve this RMC's priorities are to:

- Collaborate with the Tasmanian Herbarium and other stakeholders to improve knowledge of the distribution of plant species in Tasmania including:
  - o Expand monitoring of threatened species and resolve distribution of inadequately surveyed species
  - o Identify and focus on keystone species and those species vulnerable to distribution change including a core suite of indicator species
- Identify adequacy of private and public reserve flora surveys and collaborate with PWS, NRMs and other land managers to obtain adequate surveys to inform species reservation assessments

### Health of native plant species

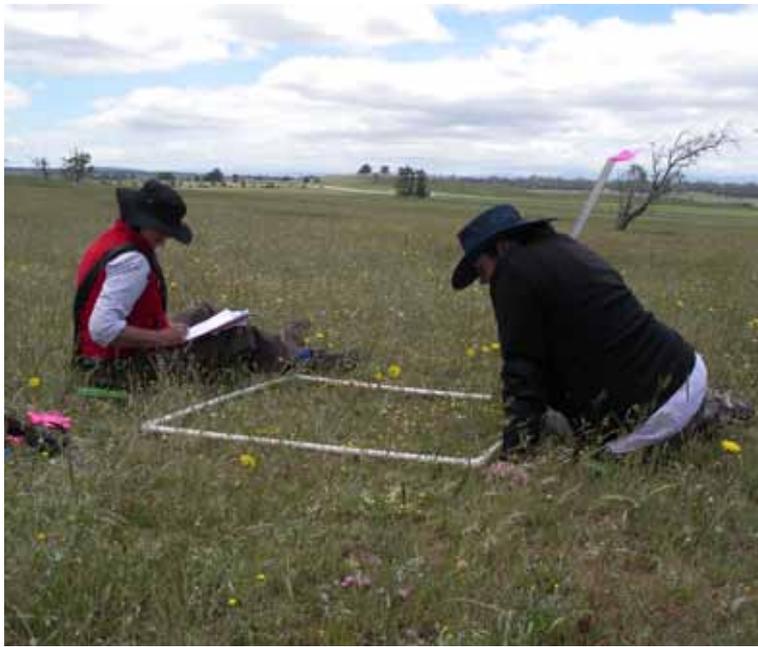
Species health monitoring identifies changes in the health, or fitness of populations of native plant species to provide an early indication of changes in environment, conservation status or ecological processes. Measures recorded may include plant dieback or change to reproductive capacity. In order to achieve this RMC's priorities are to:

- Formalise and keep under review species health monitoring programs
- Identify and monitor key indicator species and threatened species where monitoring plant population health will assist management
- Periodically review the capacity to increase the proportion of species identified for monitoring under active monitoring programs

### Ecosystem function

Ecosystem monitoring is similar to the shorter term research designs developed to answer specific ecological questions. It is presented here to cover longer-term monitoring required to determine ecosystem processes and longer-term changes in ecosystem function that may arise from large-scale environmental change such as climate change or major change in fire regime. It provides a critical check on management assumptions made on ecosystem processes that are long term or too infrequent for short term research projects. In order to achieve this RMC's priorities are to:

- Identify key ecosystem conservation knowledge needs and expand interdisciplinary monitoring programs, where appropriate, to maximise ecosystem understanding and monitoring efficiencies
- Collaborate within RMC and facilitate stakeholder involvement in interdisciplinary ecosystem monitoring approaches, including:
  - o Maintain the reserved land component of the WARRA Long Term Ecological Research program
  - o Collaborate to implement the ecosystem function monitoring components of the RMC climate change program
  - o Collaborate to implement priority ecosystem function components of reserved land management programs such as grazing and fire management
  - o Encourage additional LTER networks for key ecosystems such as building on the buttongrass moorland and grassy ecosystem research programs



### **Objective 2. Strengthen Connections between Monitoring and Land Management**

Cooperative and collaborative links with the land managers where monitoring programs are conducted are critical to successful implementation of programs. In order to achieve this RMC's priorities are to:

- Introduce and keep under review adaptive management monitoring systems for the private and public reserve estate including specifying triggers for management response and the type of response to include:
  - Support the PWS Effectiveness Monitoring and Reporting System with vegetation monitoring data that addresses the key land management issues
  - Collaborate with private reserve managers to identify and monitor the key land management issues
- Give priority to monitoring that has potential to result in improved land management and ensure land management implications of monitoring results are identified and communicated in a timely and effective manner
- Increase, where beneficial, land manager participation in program development, management and/or on ground monitoring

### **Objective 3. Improve Quality Assurance**

Data collection should be fit for purpose and accurate in line with the RMC Knowledge Management Strategy. In order to achieve this RMC will:

- Incorporate and document sound scientific principles in project design and analysis (including rigorous statistical methods where appropriate)
- Design monitoring and reporting timeframes that are appropriate to ecological responses and management needs
- Only change monitoring methods where the effect on the long term data interpretation is understood and the change can be implemented without adversely affecting the monitoring outcomes

### **Objective 4. Improve Management Systems**

The complex array of monitoring needs, data sources, methods, collaborators, reporting programs and reporting timelines requires systems to ensure fit for purpose monitoring is developed, coordination and management of resources is effective and changes are appropriately managed. In order to achieve this RMC will:

- Incorporate implementation of the Strategy into RMC divisional planning
- Introduce a governance system for developing and managing vegetation monitoring programs in RMC to improve scientific design, management and program integration
- Update data systems and data format to keep pace with technological change
- Maintain the broad strategic streams described under this Strategy but allow project flexibility to meet short term needs while maintaining the long term objectives
- Periodically review monitoring programs with respect to monitoring priorities and resources

### **Objective 5. Improve Vegetation Knowledge Management**

Secure data storage and ready availability to monitoring results will enhance vegetation management. In order to achieve this RMC's priorities are to:

- Progressively transfer all relevant and appropriate monitoring datasets into the Natural Values Atlas as a central repository for monitoring information
- Encourage collaborating agencies that hold vegetation monitoring data to make those data accessible through the NVA

## Objective 6. Build Monitoring Capacity

New and innovative ways to increase native vegetation monitoring efficiency and capacity are required. In order to achieve this RMC's priorities are to:

- Explore and adopt as appropriate, more efficient monitoring techniques
- Encourage a whole of Government approach to remote-sensing data capture that is suitable and available for meeting vegetation monitoring and reporting requirements
- Maximise the efficiency of monitoring; including use of historical data and recombination of data to answer a range of monitoring questions
- Expand collaborative monitoring with other organisations, where these fit within RMC priorities
- Encourage and facilitate monitoring by land managers
- Encourage and develop community partnerships and monitoring programs where appropriate
- Continually review monitoring organisational structures and resourcing

## Objective 7. Increase Staff Capability

Successful implementation of monitoring programs requires the facilities and expertise appropriate to the task to ensure continuity of measurement standards and safety. In order to achieve this RMC's priorities are to:

- Conduct staff training and mentor programs to improve staff monitoring capability
- Progressively obtain facilities and equipment required for efficient and effective monitoring

## Objective 8. Manage Monitoring Risks

Vegetation monitoring may have the potential to impact on sensitive places or sensitive species if not undertaken with due care to manage risks to values, property and people. In order to achieve this RMC will:

- Ensure monitoring programs comply with statutory requirements and relevant policies and guidelines
- Ensure risks to biodiversity, Aboriginal and other cultural heritage and geoheritage will be assessed, documented and adequately mitigated for all monitoring programs

## Objective 9. Obtain Best Use of Resources

Systems for effective and efficient allocation and review of resources will be needed to manage changing information needs over the life of the strategy. In order to achieve this RMC will:

- Develop a monitoring prioritisation process that recognises the value of transparent science-based criteria and risk assessment and monitoring drivers consistent with this strategy
- Review monitoring priorities and the decision processes in light of new information
- Co-ordinate monitoring activities across RMC

## Objective 10. Improve Communication

The results of monitoring need to be provided in a timely manner to DPIPWE, statutory authorities, NRMs and other community stakeholders to assist policy development, planning and land management functions. In order to achieve this RMC's priorities are to:

- Establish and maintain web pages to communicate the vegetation monitoring program, key projects and project results
- Encourage staff to publish results of monitoring programs in DPIPWE publications or website, popular articles and in peer reviewed journals
- Undertake pro-active and positive engagement with the media to promote monitoring programs and publicise outcomes
- Design vegetation monitoring information formats to meet user needs

## REVIEW AND EVALUATION

This Strategy will be subject to a mid-term review 5 years after its adoption. An annual progress and implementation review will be undertaken to determine actions and performance measures.