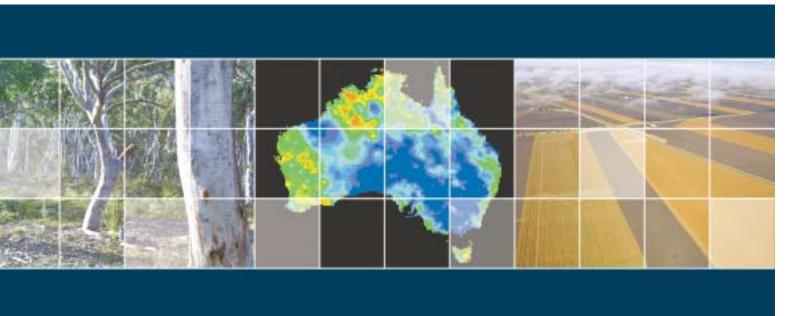
# National Land & Water Resources Audit Strategic Plan 2003–2007

The Audit provides data, information and nationwide assessments of Australia's land, water and biological resources to support sustainable development



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biological resources to support sustainable development.

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### **Foreword**

The National Land and Water Resources Audit is a key Natural Heritage Trust activity with an on going role to provide for assessments of the nation's natural resources through till 2007.

The Audit is in itself a very strategic activity. It is imperative that people and countries are able to measure the state of their natural resources and be able to report on the impact of Government and private investments on the resource base. The Audit has a critical role in facilitating this process.

The Strategic Plan builds on the work undertaken by previous Audit activity since 1997 and is directed at providing data and information that will underpin the monitoring and evaluation of investment by the Australian Government and State and Territory Governments and regional organisations in improved natural resource management.

The plan has been developed in consultation with major national stakeholders and through the members of the Audit Advisory Council.

The Advisory Council membership represents all States and the Australian Government Departments of Agriculture, Fisheries and Forestry, Environment and Heritage and the Australian Bureau of Statistics as well as the CSIRO and the Australian and New Zealand Land Information Council (ANZLIC). This membership provides an opportunity to progress the necessary partnerships required to ensure that the collection and collation of natural resource information is directed at informing our most pressing national issues and that on-going data collections remain accessible.

I look forward to the support of all stakeholders in the implementation of these strategic directions. Together we can continue to ensure that the critical natural resource management decisions are supported by the best information that we can provide.

Geoff Gorrie Chair

National Land and Water Resources Audit Advisory Council.

### **Audit's Mission**

To provide data, information and nationwide assessments of Australia's land, water and biological resources to support sustainable development.

## **Background**

The Natural Heritage Trust Act established the National Land & Water Resources Audit (the Audit) in 1997. The Audit has since provided a baseline to assess the effectiveness of land and water degradation policies and programs and continues to improve Australian Government, State, Territory and regional decision making on natural resource management.

The Audit of 1997 – 2002 significantly progressed the collection and collation of primary data and information to inform national decisions related to natural resource management. Recommendations to further develop the assessments of Australia's natural resources were identified in the final report of the Audit (2002), and are presented in the Appendix.

The Natural Heritage Ministerial Board agreed to a continuation of the Audit from 2002 through to 30 June 2007. The Audit operates under the following governing principles:

- clear and achievable objectives agreed and set by the principal users of the Audit;
- data collection, processing and storage to be primarily demand-driven;
- increased responsiveness to policy information needs while avoiding a direct policy role;
- maintain independence, fostering coordination across agencies;
- build a cooperative State, Territory and Australian Government partnership; and
- · users should pay for additional activities.

It was also recognised that consultation on future arrangements of the Audit should occur with the Natural Resource Management Standing Committee and the Australian New Zealand Land Information Council.

### **Natural Heritage Trust**

The objectives of the second phase of the Audit are identified as: assisting in the identification of natural resource management priorities, and allowing the progress of natural resource management investments to be assessed through the development and maintenance of accurate, cost-effective contemporary, accessible and timely data and information on the nation's natural resources.

The framework for the extension of the Natural Heritage Trust identifies three overarching objectives:

- Biodiversity Conservation the conservation of Australia's biodiversity through the protection and
  restoration of terrestrial, freshwater, estuarine and marine ecosystems and habitat for native plants
  and animals.
- Sustainable Use of Natural Resources the sustainable use and management of Australia's land,
  water and marine resources to maintain and improve the productivity and profitability of resource
  based industries.
- Community Capacity Building and Institutional Change support for individuals, landholders, industries and communities with skills, knowledge, information, and institutional frameworks to promote biodiversity conservation and sustainable resource use and management.

### **Audit Outcomes**

The Australian Government, in providing ongoing funding for the Audit activity, has identified the following outcomes:

### 1. Data and information

- collation of data and information to provide a sound basis for reporting on the natural resource management (resource condition, social and economic) indicators developed by the Natural Resource Management (NRM) Ministerial Council's Monitoring and Evaluation Working Group (MEWG);
- provision of data and information products to support reporting by Australian Government,
   State and Territory Governments on the natural resource management indicators and other relevant national and state initiatives; and
- production of reports on national trends in natural resource condition and related social and economic aspects of natural resource management.
- 2. Coordination and quality assurance of data management processes
  - Promote consistency and alignment of activities and where appropriate, participate in technical/advisory working groups overseeing key NRM data themes and issues;
  - quality assurance and accreditation of data collection and management processes;
  - agreed data custodianship and management arrangements;
  - nationally consistent data collection and management standards;
  - coordination of national data access and data sharing arrangements with the ANZLIC;
  - nationally integrated, compatible natural resource management datasets; and
  - maintenance and update of the Australian Natural Resources Atlas and Data Library systems to ensure existing data and information products continue to be available.
- 3. Provision of other data and information products, consistent with the objectives of the Audit, as agreed by the Natural Heritage Ministerial Board.

Additional Audit activity, contributing to wider natural resource management objectives, will be subject to a 'fee for service' or other client relationship subject to the endorsement of the Audit Advisory Council.

# **Planning Context**

### **NRM Priorities**

The Audit reports (www.nlwra.gov.au/atlas) demonstrate how rigorous data collation and multi-attribute and science-based assessment can help determine investment priorities. The Audit (1997 - 2002) made a series of recommendations. Foremost among these is to be more strategic in the data collected, to ensure data is accessible, collated and provided to the community as information. The outcome is to maximise return on investment in data collection.

Audit reporting has provided major advances in strategic knowledge about the condition and management of the nation's natural resources. It has also highlighted that the extent, quality and timeliness of data are often insufficient to underpin effective use of market-based approaches and investment decisions. An ongoing assessment of the extent and quality of the national data for its suitability to underpin market-based approaches and natural resource management investment decisions is essential.

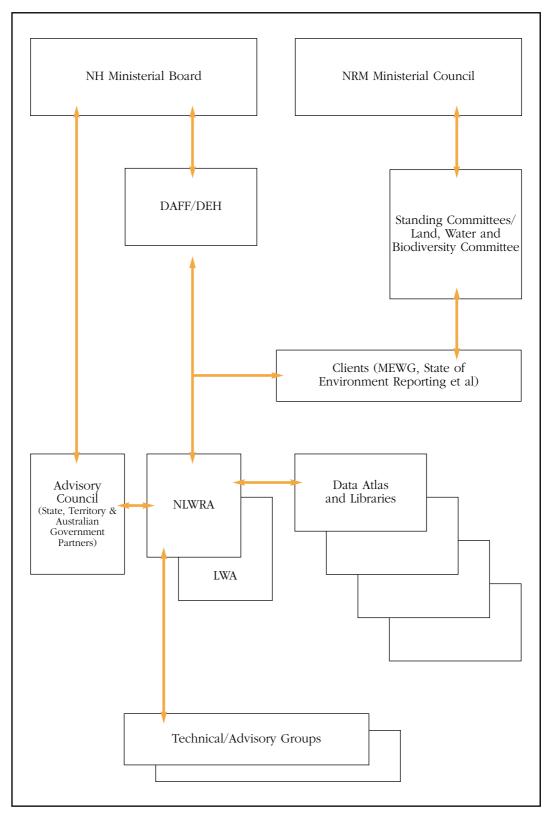
The various reports of the Audit provide recommendations that will lead to initiatives associated with the collection and analysis of natural resource information. An ongoing issue will be to ensure that information is targeted to meet the needs of those making decisions and is collected in the most effective and efficient manner. Data is expensive, and the ready access to required information with associated costs identified within the decision making process will lead to environmental accounting transparency.

A core function of the Audit will be to provide readily accessible information to support the monitoring and evaluation of the National Action Plan for Salinity and Water Quality and the Natural Heritage Trust. As these initiatives are national, the successful achievement of Audit activities must involve a strong partnership between State, Territory and Australian Governments, which are the Audit's primary clients

### Audit — Key Relationships

To achieve Audit objectives will require developing and maintaining partnerships with those responsible for natural resource management initiatives in various jurisdictions. The following identify the key Audit relationships.

- Natural Heritage Board.
- Audit Advisory Council (State and Australian Government Partners).
   Comprising members from QLD, NSW, Vic, Tas, SA, WA, NT, CSIRO, ABS, ANZLIC, DEH and DAFF.
- Natural Resource Management (NRM) Ministerial Council.
- Australian Government Department of Agriculture, Fisheries and Forestry.
- Australian Government Department of the Environment and Heritage.
- NRM Ministerial Council's Land, Water and Biodiversity Committee.
- NRM Ministerial Council's Monitoring and Evaluation Working Group (MEWG)
- Land & Water Australia (LWA).
- Technical Advisory and Reference Groups.



The Audit will develop and maintain partnerships with those responsible for natural resource management initiatives in various jurisdictions

# **Strategies**

The following strategic directions for the Audit, with associated actions and performance requirements, will lead to the delivery of agreed outcomes. Annual operational plans will identify annual objectives and relevant budget allocations.

The strategies relate to the stated outcomes of the Audit to:

- collect and collate information to assist in the monitoring natural resource condition and evaluation of Natural Resource Management Programs,
- · ensure that national natural resource data and information is accessible, and
- provide information when required on Natural Resource Assessments.

### The Audit will:

1. Co-ordinate and foster the collection and collation of data and information as a basis for reporting on national natural resource management indicators.

A specific recommendation of the Audit (2002) was to implement "...an integrated and coordinated monitoring and assessment program, building on State and Territory activities..." (Appendix). The Natural Resource Management Ministerial Council has approved a national natural resource management Monitoring and Evaluation Framework. The Audit's role is to collate data and information identified within the framework so as to allow an evaluation of NRM initiatives (National Action Plan for Salinity and Water Quality, and the NHT). This will be a core role and focus of the Audit.

There are various monitoring and evaluation 'frameworks' relevant to NRM decision making (eg. National Monitoring and Evaluation Framework, State of Environment Reporting, Indicators of Sustainable Agriculture, State of Forests Reporting). There is benefit in coordinating information collection associated with these activities to enable consistent 'core' datasets to be identified and managed to ensure efficiencies in collection.

Regional groups, non-government organisations and industry sectors will be important users of trend analyses, particularly as they relate to 'triple bottom line' reporting requirements. User needs analyses will be used to ensure a wide-ranging and client-driven data collection program.

2. Promote the development of linked natural resource management data and information systems

Continual upgrading of various Natural Resource Data Libraries and Atlases is essential to ensure that information required is current and accessible. The vision of Atlases and Data Libraries as parts of an integrated yet distributed Australia-wide network needs to be realised to allow efficient and effective national (State, Territory and Australian Governments) data collation. Audit partnerships with ANZLIC and all States and Territories are critical to ensure data quality control and high standards in information management.

A number of specific Audit projects will be commissioned to run in parallel with this developing system. Core data, including information on catchment boundaries, roads, water and rivers, soil attributes, vegetation and climate must be compiled and maintained to provide an Australia-wide atlas of natural resources. This task builds upon and collaborates with the work of the ANZLIC and the Australian Spatial Data Infrastructure (ASDI) initiative.

A land use/management map of Australia, developed in collaboration with State, Territory and Australian Governments including the Australian Bureau of Statistics, the Australian Greenhouse Office and the Bureau of Rural Sciences should be a key component of the data framework of the Audit.

3. Facilitate the on going collection, collation, integration and management of data and information that will inform natural resource management decision-making.

The seven themes adopted in the first phase of the Audit grouped tasks to facilitate improved natural resource decision making. The themes were not mutually exclusive.

Data sets will often apply across several themes and the results of analysis in one theme will often have implications for other themes. Core data sets will need to be identified across various themes to ensure efficiencies of collection and management. Existing frameworks such as the Australian Spatial Data Infrastructure will be used to provide structure to national data collection and management.

The Australian Government is in the process of facilitating the establishment of national reference groups to ensure that data continues to be collected and collated according to agreed standards. These standards for data use and integration aid in national NRM decision making. An Audit priority will be to ensure that data is being collected to standards suitable to be integrated into the monitoring and evaluation frameworks being developed.

The Audit has a role to create a culture of informed decision making amongst data users. This can be achieved by enhancing the capacity of decision-makers to define and meet their data and information needs. This is particularly important in relation to locating, using and presenting relevant data, understanding collection requirements, costs and limitations, and developing partnerships in funding data collection and analysis.

A priority of the Audit will be to add value to, and integrate existing initiatives. New data assessments will be based on needs analyses. Work planning will scan the range of natural resource management initiatives in progress across Australia and opportunities for partnerships will be identified for each new thematic area. Collaborative links will be built between these initiatives and the Audit.

4. Develop partnerships and linkages across government, industry and regional organisations to improve the knowledge of the impact of the productive use of natural resources on the environmental, social and economic aspects of the Australian landscape.

National data and information will be primarily based on scaling-up State, Territory, Regional, industry and non-government organisation based data, coupled with nationally collected information. This will require partnerships in the provision of information and in the agreement of standards of collection. Producing a nationally acceptable and agreed view of resource condition, to enable transparent investment decisions to be made, will require acknowledgment of regional, jurisdictional and industry sector differences and a shared vision for a national decision making model.

The Audit has a specific role in brokering agreement across agencies and jurisdictions and is ideally positioned to act as an 'independent' source of objective, policy-relevant information. This role may extend to the provision of additionally funded services which are within the Natural Heritage Ministerial Board agreed principles of Audit operation.

### Strategy:

Co-ordinate and foster the collection and collation of data and information as a basis for reporting on national natural resource management indicators.

### **Actions:**

- Coordinate the collation of data and information for target and associated indicators of resource condition identified by the Monitoring and Evaluation Working Group.
- Foster coordination of natural resource data, information and products to support reporting by Australian Government, State and Territory Governments and regional groups on the natural resource management indicators and align these collations with other relevant national and State initiatives.
- Facilitate and/or produce reports on national and regional trends in natural resource condition and related social and economic aspects.
- Identify, encourage and standardise environmental data and analysis methods, including the development of long-term natural resource management monitoring sites/areas.

- Endorsement by the MEWG of the Audit activities.
- Provision of required data and information to aid in Australian Government, and other initiatives (eg. SoE reporting).
- Coordinated development of indicators of natural resource condition at the national level.

### Strategy:

Promote the development of linked natural resource management data and information systems.

### Actions:

- Sponsor the maintenance and update of the Australian Natural Resources Atlas and Data Library systems to ensure continued accessibility to up-to-date data and information products.
- Assist with establishment of data custodians, standards and protocols.
- Build capacity to locate, understand and use natural resource data and information.
- Support national data access, sharing and quality assurance processes with ANZLIC and within the Australian Government through the Office of Spatial Data Management (OSDM).
- Establishing and refining the mechanism to enable distributed client access to relevant NRM data.

- Agreed and operating 'National' Custodian and Data Access and Management Agreements.
- National capacity building activities to improve the knowledge of and access to required information.
- Nationally consistent standards established for the collection of NRM data and information.

### Strategy:

Facilitate the on going collection, collation, integration and management of data and information that will inform natural resource management decision-making.

### **Actions:**

- Participate in national initiatives (technical and advisory groups) that are providing on-going collection of data and information to facilitate integrated, compatible natural resource management data sets.
- Initiate additional thematic assessments based on needs analyses and where major gaps exist in required information.
- Facilitate development of specific social and economic data sets to integrate with environmental and NRM data and information.
- Facilitate the development of improved methods of monitoring natural resource condition and use.
- Report on the status of collection activities and make recommendation on collection requirements.

- Data is being collected to meet the needs of Audit clients.
- National standards and protocols being applied in the collection and collation of data and information.
- Reports on National
   Assessments are prepared at a desired frequency.

### Strategy:

Develop partnerships and linkages across government, industry and regional organisations to improve the knowledge of the impact of the productive use of natural resources on the environmental, social and economic aspects of the Australian landscape.

### Actions:

- Facilitate an effective Audit Advisory Council and process to provide Strategic Direction and endorsement of operational activities.
- Undertake needs analyses to ensure the activities of the Audit are client-focused and user-based.
- Develop and use partnerships with natural resource data and information custodians to ensure that information is being made available in an effective and efficient form.
- Engage indigenous organisations to assist in the development of natural resource information sources relevant to their needs.
- Engage research and development and industry organisations to assist them to use, collect and make accessible environmental, social and economic data.
- Provide to industry, government and regional organisations information from national collations relevant to their needs
- Build capacity to understand data collection standards and policies and knowledge of where data and information resides through mechanisms such as the ASDI.
- Establish an 'honest broker' role between differing jurisdictions and agency programs with respect to presentation of compiled data and information.

- Advisory Council endorsement of the strategic directions and operational activities work of the Audit.
- Collaborative partnerships with Australian Government, State and Territory agencies to facilitate the collation of relevant national information.
- Accessible, timely and managed information networked across data custodians and providers.

# Audit Management, Reporting and Evaluation

The Audit formally reports through Department Secretaries to the Natural Heritage Ministerial Board which comprises the Minister for the Australian Government Department of Agriculture, Fisheries and Forestry and the Minister for the Australian Government Department of the Environment and Heritage. Land & Water Australia provides administrative services to the Audit under a contractual service agreement.

The Audit is advised by an Audit Advisory Council comprising representatives from the Australian Government Department of Agriculture, Fisheries and Forestry, Department of the Environment and Heritage, the Australian Bureau of Statistics, CSIRO, all States and the Northern Territory, and ANZLIC. The Advisory Council represents the key National Partnership forum where endorsement will be sought for Audit action.

To meet accountability requirements, the Audit will prepare the following documents:

- Strategic Plan this document will be formally reviewed during 2005, following an independent examination of the Audit activities to date.
- Annual Operational Plans provide forecast of Audit work on a sub-program level including the
  anticipated key outputs/outcomes and the indicative budget required. These plans are actioned
  following annual endorsement by the Audit Advisory Council, and approval by the Natural Heritage
  Ministerial Board.
- Annual Reports record and measure achievements against each of the sub-programs listed in the Annual Operational Plan. Annual reports are prepared to meet Natural Heritage Trust requirements.
- Theme Reports and a Concluding Report during 2006 2007 that will review Audit activities to
  date, summarise Audit findings and propose future arrangements after the scheduled conclusion
  of the Audit.

The entire Audit program will be continuously evaluated against the Strategic Plan and the performance indicators listed against each objective. Progress will also be evaluated against the key result targets listed in the Annual Operational Plans. These evaluations will be summarised in each Annual Report. The Audit will be independently reviewed during 2005.

### Communication and Consultation

The Audit Management Unit will develop and implement an Audit communication strategy to ensure that Audit work is based on the needs of stakeholders, and that information stemming from the Audit is distributed appropriately. The communication strategy will include:

- Identification and application of effective communication mechanisms that will facilitate an increasing appreciation of national data and information issues.
- Networking across communication and information professionals in the natural resource industries to facilitate cooperation, information and knowledge sharing.

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# **Appendix**

### The Audit (1997 - 2002)

In 1997 the Commonwealth Parliament established the National Land and Water Resources Audit to 'provide a baseline for the purposes of carrying out assessments of the effectiveness of land and water degradation policies and programs.... [and].... to improve Australian Government, State and regional decision making on natural resource management.'

This Audit developed a strategic direction and coordinated and commissioned a range of assessments that progressed the collection and collation of national information under nationally agreed standards and reported on the status of various thematic issues. Data and information was deposited with custodians with ongoing responsibilities for management and distribution of these national datasets.

Much of the detail of the recommendations presented in various Audit reports has been accepted and initiatives have commenced, notably the formation of national technical advisory or steering committees to oversight the progression of designated Theme activity. These initiatives have been initially 'sponsored' by Australian Government Agencies.

The Audit (1997 –2002) made the following recommendations related to:

### Information, the currency for implementing sustainable development

'Recommendation 1 — To deliver on the vision for improved natural resource condition, conservation and productive use of its natural resources, Australia through partnerships and contributions across government, industry and the community, should strategically increase it's investment in data collection and collation'.

### Translating information into priorities and actions

'Recommendation 2 — Based on strategic and integrated information provision, Australia needs to increase its activities in knowledge exchange, investing in a variety of government, industry and community based extension and support services that translate natural resources information into understanding, improved practice and the setting of goals and targets, providing decision support techniques and applying these at regional through to national scales.'

### Tracking changes in natural resource condition and use

'Recommendation 3 — To meet the increasing demand for use, productivity and health information, there should be implemented an integrated and coordinated monitoring and assessment program, building on State and Territory activities, covering:

- 3.1 Australia's land resources, that tracks soil condition, monitors soil, water and nutrient budgets, details land management practice, links practice to soil condition and productivity and is based on the Australian Soil Resources Information System.
- 3.2 Australia's surface and groundwater resources, that tracks water use, monitors water availability and quality, details management practices and is available to underpin an Australia wide agreed policy for sustainable water use.
- 3.3 The ecology of Australia's rivers and estuaries and how they operate, including the current condition of their riparian and aquatic biodiversity, the impact and sustainability of current and proposed management practices, based on agreed assessment protocols and spatial frameworks and is reported and assessed within a catchment land use context.
- 3.4 Australia's native vegetation and its biodiversity values that tracks change in extent, monitors condition, determines levels of carbon sequestration, details management practice and returns from use and builds on and integrates native and other vegetation data from the National Forest Inventory and the National Vegetation Information System and links to the National Carbon Accounting System and the Australian Collaborative Rangeland Information System.
- 3.5 Australia's terrestrial biodiversity, its condition and management needs using an hierarchal and landscape based bio-regional monitoring and assessment program that tracks change in species, populations and regional ecosystems, determines the impact of threatening processes, details management activities and assists in the identification of priorities to guide management responses.
- 3.6 Australia's rangelands to underpin effective and protective management, including their use, productivity, biodiversity, community, indigenous and economic values, by implementing the Australian Collaborative Rangeland Information System'.

### Integrating social, economic and biophysical components of natural resource management

'Recommendation 4 — To facilitate integrated social, economic and environmental planning and management Australia needs to develop and implement an agreed approach to resource accounting, applicable at regional through to Australia wide scales, incorporating market and unpriced values, together with the costs and benefits of resource use.'

### Assessments, the key to improving programs and policies

'Recommendation 5 — To meet demands for information and provide a framework for effective and efficient investment in and returns from our natural resources, Australia should regularly assess and report on their condition and on the outcomes of our natural resources programs, and in the context of these assessments, adjust and implement its natural resource management initiatives.'

### Meeting changing client demands and providing information on emerging issues

'Recommendation 6 — To meet client information needs and maximise returns from investment in data collection and information analysis, Australia needs to re-assess opportunities to target data collection, improve coverage, relevance and quality, implement any gap-filling and ensure effective information provision, with consequential activities to be implemented in a coordinated manner.'

### Maximising returns on investment in data collection

'Recommendation 7 — As part of the development of a more strategic, client responsive and cost effective approach to data collection and information provision, Australia needs to implement through the Natural Resources Management Ministerial Council, recommendations contained within the Audit's Report Australian Natural Resources Information 2002.'

(The recommendations include building and maintaining fundamental data sets; providing ready access at cost of transfer to data and information through data libraries and atlases; ensuring maximum utility of the investment in data collection activities; ensuring regular reporting within the standard frameworks defined by ANZLIC; and facilitating opportunities for further co-investment and collaborative management in data sets required by client organisations.)

### Coordinating data collection and the provision of information

'Recommendation 8 — To ensure cost effective and client relevant data collection and management, Australia needs to continue coordination and the building of partnerships, as a core part of Audit activities 2002 – 2007, for the collection, management and assessment of natural resource data and its access through data libraries and atlases operating consistently with ANZLIC standards.'

### Australia's Natural Resources Information Agency

'Recommendation 9 — To ensure the information-based approach to natural resource management that Australia has implemented is effective, Australia needs to establish an information agency with assured life and independence. A legislative base would enable and facilitate processes for the coordinating of natural resource data collection, information provision, mandated assessments of progress, the review and fine tuning of major programs and the development of initiatives.'

# Specific Recommendations within the individual Audit Theme reports related to reporting requirement and frequency

### Theme 1 — Australian water resources assessment

 Five-yearly cooperative and Australia-wide assessment of progress towards achieving sustainable water resource management.

### Theme 2 — Australian dryland salinity assessment

 National sponsor needs to be identified to coordinate method development and report regular assessments.

### Theme 3 — Australian native vegetation assessment

- Continual enhancement and improvement of the National Vegetation Information System.
- Five yearly assessments based on the National Vegetation Information System 2000 baseline.
- Yearly inventory of clearing by vegetation type.

### Theme 4 — Rangelands — tracking changes

 The Australian Collaborative Rangeland Information System will integrate monitoring information and provide five-yearly reports on rangeland condition (coinciding with SoE).

### Theme 5 — Australian agriculture assessment

- Regular updates of the Australian Soil Resources Information System and development of new information products.
- Maintenance and Australia-wide coordination of Australian Soil Resources Information System by Australian Collaborative Land Evaluation Program.

### Theme 6 — Australians and natural resource management

 The coordination and formalising of data collection, analysis and reporting of environmental statistics (eg. Through the National Centre for Environmental Statistics) could support the information needs of government natural resource programs.

### Theme 7 — Australian catchment, river and estuary assessment

• Ongoing assessment and reporting of condition of Australia's catchments, rivers and estuaries at five-yearly intervals.

### Theme 8 — Australian Natural Resources Information

ANZLIC to provide yearly reports to the Natural Resource Management Ministerial Council
on the status of the natural resource spatial data infrastructure.

### Theme 9 — Australian terrestrial biodiversity assessment

• Two to five yearly assessment and reporting of the condition of Australia's biodiversity (linking with SoE).