Tasmanians treasure our outstanding natural environment. Tasmania has a rich and unique natural heritage, with wild and beautiful landscapes, rugged and spectacular coastlines and abundant wildlife. Our natural heritage underpins our island way of life, our reputation for quality primary produce and our world class wilderness experiences. Our economy and our well-being are reliant on a healthy natural environment.

The Department of Primary Industries, Parks, Water and Environment has a key role in managing and preserving our beautiful State, including caring for Tasmania’s natural heritage. It is my great pleasure to present this Natural Heritage Strategy for Tasmania 2013 - 2030.

This strategy provides the framework for conserving our rich and diverse natural heritage. It addresses the biggest single challenge for conservation planning – climate change – along with existing pressures such as risks from invasive species and diseases. The strategy will also help us to take advantage of the opportunities our unique heritage provides, and to secure our natural advantage for generations to come.

My Department is responsible for the sustainable management, use and protection of the State’s natural resources and cultural heritage. This Strategy is not intended to bind the Department’s statutory functions, but will guide our future conservation work and allow us to work more effectively with community, business, industry and non-government organisations on conserving our natural heritage to 2030 and beyond.

The Natural Heritage Strategy will help ensure Tasmania’s unique natural heritage is healthy, resilient, well understood and highly valued both in its own right and for its essential contribution to the Tasmanian community, economy and way of life. It is an investment in our well being and our economic future. The actions that we take now will place us in a strong position to meet future challenges.

Kim Evans
Secretary
Department of Primary Industries, Parks, Water and Environment
Blue throat wrasse, seawhips, sponges and hydroids.

Photo by John Smith.
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Walkers overlooking an alpine lake in the Western Arthur Range in the Tasmanian Wilderness World Heritage Area.

Photo by Tom Bennett.
The Natural Heritage Strategy has been developed by the Department of Primary Industries, Parks, Water and Environment, in consultation with a range of stakeholders in the Tasmanian community. The strategy provides direction for nature conservation programs managed by the Department until 2030, as well as being a guide for the conservation of natural heritage in Tasmania more broadly. The strategy aims to ensure that Tasmania is well positioned to deal with a number of challenges that we will face in the coming decades, and to take advantage of opportunities that our unique natural heritage will provide for the Tasmanian community and visitors to our island State.

Our vision is that Tasmania’s unique natural heritage is healthy, resilient, well understood and highly valued both in its own right and for its essential contribution to the Tasmanian community, economy and way of life.

This strategy aims to improve conservation outcomes in Tasmania by taking a coordinated, strategic landscape approach to conservation and management, including strategic planning and assessment. Landscape scale conservation requires involvement of all land managers on public and private land. A landscape approach will aim to assist priority setting amongst a range of conservation actions to ensure efficient and effective use of conservation resources.

**Goals**

The strategy has four goals. The first goal aims to maintain and restore natural heritage in a changing environment, and ensure the conservation, sustainability and productivity of our landscapes, ecosystems and species. Goals two and three relate to strengthening partnerships, engaging stakeholders, and raising stakeholder and community awareness and participation. The fourth goal outlines how the strategy will be implemented.

**Priorities for Action**

Thirty-six priorities for action have been identified that will form the basis of an implementation plan which will be developed in 2013 for the first five years of the strategy (2013 – 2018). The priorities contain a number of important focus areas including:

1. Adopting a landscape scale approach to conservation.
2. Planning for, and responding to, climate change.
4. Implementing a more holistic risk-based approach to marine conservation.
5. Developing more effective threatened species management.
6. Strengthening partnerships with the Tasmanian Aboriginal community, and increasing stakeholder and community involvement in conservation activities.
7. Reviewing Tasmania’s legislation, policies and procedures to identify opportunities to improve efficiency and efficacy.

Implementation will be coordinated through the Department’s annual business planning process and reporting will be integrated with annual reporting requirements. In 2018 a review will report on progress with implementation and make recommendations on whether priorities or other elements of the strategy should be amended.
VISION

Tasmania’s unique natural heritage is healthy, resilient, well understood and highly valued both in its own right and for its essential contribution to the Tasmanian community, economy and way of life.
This Natural Heritage Strategy has been developed to guide conservation and management of Tasmania’s natural heritage from 2013 to 2030, and will continue to shape our natural heritage management over the coming decades. The goals and objectives of the strategy are underpinned by broad principles that guide how the strategy will be implemented. As well as providing direction for nature conservation programs managed by the Department of Primary Industries, Parks, Water and Environment (the Department), the strategy provides direction for the conservation of natural heritage in Tasmania generally.

This strategy aims to improve conservation outcomes in Tasmania by taking a coordinated, strategic landscape approach to conservation, including strategic planning and assessment. A landscape approach to conservation recognises that many natural processes important for maintaining natural heritage operate at large spatial scales, and so will require the involvement of all land managers both public and private. This strategic landscape approach will complement and better integrate conservation efforts that occur at particular sites. A landscape approach to conservation will recognise that important Aboriginal heritage sites and deposits are contained within natural landscapes. We aim to move towards a landscape approach to conservation that accounts for biodiversity and geodiversity in both terrestrial and aquatic environments, while recognising local economies, primary industries, eco-tourism, and the health and social benefits of the environment (Figure 1).

A landscape approach will assist priority setting amongst a range of conservation actions for many natural values across a landscape to ensure efficient and effective use of resources. Applying a more strategic approach to conservation through landscape scale planning and assessment can also create efficiencies in the application of environmental regulations. These efficiencies can be obtained by providing more certainty and clarity for land owners and developers about conservation measures that will be required to protect biodiversity and geodiversity within a given planning area.

The strategy aims to ensure that Tasmania is well positioned to deal with a number of challenges that we will face in the coming decades, and to secure the opportunities that our unique natural heritage provides the Tasmanian community and visitors to our island State.
WHAT IS NATURAL HERITAGE?

Our natural heritage is our entire environment. It includes Tasmania’s water, air, soil, land, sea, plants and animals. It includes biodiversity and geodiversity, and natural processes in terrestrial and aquatic environments. Natural heritage also often contains important Aboriginal heritage, that requires protection because of its cultural significance.

Our natural environment has a past, a present and a future. We have inherited a landscape that has been shaped by billions of years of geological history and biological evolution, tens of thousands of years of Aboriginal stewardship, and more than two hundred years of settlement by Europeans and other immigrants.

We are currently facing many issues that will continue to impact on our natural heritage into the future, with climate change perhaps being the most challenging. The actions that we take now, and in the coming decades, will shape the natural heritage we pass on to future generations of Tasmanians.

What is a landscape approach?

A landscape approach is a systematic planning and management approach that integrates conservation management across land tenure and land uses. Because of this, a landscape approach to conservation requires sound information sources and coordination between different land managers. The approach does not only consider the environment, but also includes social, economic and cultural factors. Landscapes operate at a range of scales from site, to property, to catchment, to region and so on, depending on the natural value under consideration. A landscape approach recognises the interdependence of nature across large areas. Landscapes include both terrestrial and aquatic environments.
VDM

Areas with high natural value managed primarily for conservation.

Small remnants are managed for their connectivity and habitat values.

Natural heritage in urban and rural areas is protected, maintained, and where possible restored.

Coastal and marine environments managed sustainably.

Environmental gradients protected to provide opportunities for species movement under climate change.

Refugia identified and threats managed.

Primary production and conservation needs are integrated and managed sustainably.

Geoheritage values protected.

Estuaries, waterways and riparian areas contribute to connecting natural heritage across landscapes.
WHY TASMANIA’S NATURAL HERITAGE IS WORTH SECURING

Tasmania’s natural heritage has a history dating back more than a billion years. The State’s oldest known rocks were deposited 1,300 million years ago when sand and other sediments were laid down in shallow seas. Some of those rocks contain fragments of zircon over 3 billion years old. Over the following 900 million years the geological foundations were shaped by volcanoes, earthquakes, glaciations and deposition from large river systems. About 200 million years ago the great southern landmass, Gondwana, took shape.

With time, Gondwana began to disintegrate and approximately 40 million years ago, Australia split from Antarctica and embarked on a slow journey north. This was a highly significant time in the development of Tasmania. The geological forces that separated Gondwana caused major fault systems to develop and these intersected to give Tasmania its triangular shape, its valleys and mountains and diverse landscape, including the creation of Bass Strait. Tasmania has been isolated from mainland Australia for the last 8000 years following the flooding of Bass Strait after the last glaciation and the subsequent rise of sea levels. Isolation, together with the island’s southern latitude, variable topography, soils and climate, provided the foundation for a distinct natural heritage.

Tasmania’s native vegetation includes the world’s tallest flowering hardwood forests, one of the largest continuous expanses of ancient cool temperate rainforest, and the most extensive peatlands in Australia. Isolation from mainland Australia has also produced flora unique to Tasmania, especially in the mountains. There is a rich array of mosses, liverworts, lichens and fungi in Tasmania. The cushion plant communities of the mountains are considered globally significant due to the levels of endemism and diversity.

Many of Tasmania’s native animals are found nowhere else in the world. The Tasmanian devil is well known internationally. Other local icons include the Tasmanian wedge-tailed eagle and the giant freshwater crayfish, which is the largest freshwater invertebrate in the world. Tasmania also has many migratory species including the short-tailed shearwater, which migrates from the Arctic to take advantage of Tasmania’s summer fishing grounds and to breed on Tasmania’s offshore islands.

Tasmania has the most undeveloped coastline in south-eastern Australia with hundreds of uninhabited islands. Some of our coastlines contain Aboriginal heritage sites, especially shell-middens, of a richness and extent that have few parallels in the world. Tasmanian waters provide migratory corridors for humpback whales and breeding grounds for southern right whales. The marine environment is renowned for giant kelp forests, reef habitats, extensive seagrass meadows and endemic species such as handfish. In Port Davey and Macquarie Harbour tannin staining and stratification of estuarine waters has resulted in unique ecosystems with normally deep water plants and animals found at shallow depths.

Tasmania’s freshwater environments contain an extensive network of rivers, streams and wetlands including lakes, tannrs and swamps. Many of these have internationally and nationally significant biological values, including 10 Ramsar wetlands. We also have largely undisturbed catchments such as the Davey and New Rivers – something that is rare in south-eastern Australia.

Our natural heritage is internationally recognised, with the Tasmanian Wilderness World Heritage Area and Macquarie Island included on the World Heritage list. Most of the State is listed as one of fifteen National Landscapes in recognition of our inspirational environments that offer world class natural and cultural experiences (SEWPAC 2012). Tasmania has retained much of its original native vegetation cover, and has an outstanding record for protecting these areas with more than 45 percent1 of the State in

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1 As at 30th of June 2012.
reserves on public and private land. Our natural heritage is truly unique.

ABORIGINAL INFLUENCES ON TASMANIA’S NATURAL HERITAGE

The landscapes, ecosystems and communities that form Tasmania’s unique natural heritage have been shaped over tens of thousands of years of stewardship by Tasmanian Aboriginal people. Tasmania’s Aboriginal occupants became the longest isolated society in history. They used many silicified stone sources as quarries, and occupied caves, rock shelters, and coastal dunes. As a result of this long history, many sites with high natural heritage value in Tasmania also contain significant Aboriginal heritage.

Another example of Aboriginal influences on the landscape includes the continual and deliberate use of fire over millennia, which has interacted with soils, climate and topography to influence the extent, boundaries and distribution of vegetation types. The landscape under Aboriginal fire management was most likely characterised by sharp boundaries between vegetation types and open understoreys, particularly in dry eucalypt forests. Grasslands and grassy woodlands were regularly burned in a process referred to as ‘fire-stick farming’.

Although Aboriginal burning regimes have ceased to operate over most of the State in the past 200 years, the legacy of such burning remains in the landscape. Many Tasmanians view these ecosystems as significant natural landscapes and these landscapes are especially culturally significant to the Tasmanian Aboriginal community today.

NEED FOR A STRATEGY

Our natural heritage is pivotal to our community’s well being and economic future. Indeed, it supports a way of life Tasmanians treasure, as well as many industries such as tourism, agriculture and forestry. Many people are drawn to the State to experience our wilderness and unique plants, animals and landforms (Tourism Tasmania 2011). Our clean and relatively abundant water, and freedom from many pests and diseases, provides for primary industries and clean energy production that are fundamental to the Tasmanian Brand. Our reputation for quality primary produce is built on that brand.

In addition to sustaining Tasmanian’s social, cultural and economic wellbeing, our natural heritage has an intrinsic value that is internationally recognised. We have an obligation to future generations to conserve natural values, and if possible, improve the condition of degraded values. Our natural heritage also contains highly significant Aboriginal heritage sites which require protection and conservation.

We currently face many challenges, including climate change; invasive species and pathogens; changing fire regimes; habitat loss, degradation and fragmentation; and changing land use. These challenges pose continuing and new issues for conservation in Tasmania. We must address these in order to secure our natural advantage and safeguard the natural, economic, cultural and social inheritance of future generations. A strategic approach is required to prepare for, and respond to, the challenges we face.

The Department is responsible for the sustainable management and protection of Tasmania’s natural and cultural assets for the benefit of Tasmanian communities and the economy (DPWPWE 2011). This strategy outlines priorities for conservation activities undertaken by the Department, that will further the objectives of the Resource Management and Planning System in Tasmania. To be effective the Department’s approach must be integrated across and within all levels of government, and effectively engage stakeholders and the community.
GUIDING PRINCIPLES

The following principles guide how the vision, goals and objectives of this strategy will be achieved, and how the actions will be implemented.

| Natural heritage has intrinsic value |
| Biodiversity, geodiversity, and natural processes have intrinsic value that should be conserved, whether or not they are of direct benefit to us. |

| In situ conservation is a priority |
| Biodiversity and geodiversity are best conserved by protecting existing natural occurrences and processes. |

| Landscape scale approaches enable strategic and effective allocation of conservation resources |
| Effective conservation of natural heritage operates at the landscape scale across public and private land tenures. Landscape approaches can strategically and effectively integrate biodiversity and geodiversity conservation efforts, while considering issues relating to cultural heritage, local economies, infrastructure, agriculture, eco-tourism, and the health and social benefits of the environment. |

| A risk-based, adaptive management framework is needed for good conservation decisions |
| Adaptive management approaches using both science and practical experience to improve conservation work are most effective when combined with a risk analysis approach to managing our natural heritage and allocating resources. |

| Applying the precautionary principle |
| Where there are threats of serious or irreversible environmental damage, a lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. |

| Managing in a changing climate |
| Applying fundamental ecological principles and adopting a range of conservation strategies will provide a sound basis for developing robust conservation measures that enhance resilience and the potential for adaptation of our natural values in the face of a changing climate. Our management approach must be flexible to allow for innovation in a changing environment. |

| Acknowledging the Tasmanian Aboriginal community and respecting their past |
| The actions of Aboriginal people in the past has had an important influence in shaping our natural heritage and highly significant Aboriginal heritage sites are contained within some natural heritage forms. Efforts to conserve biodiversity and geodiversity must take into account Aboriginal heritage and acknowledge and respect the culture, values, innovations, practices and knowledge of the Tasmanian Aboriginal community. |

| Engaging with the whole community |
| The protection and management of our natural heritage is dependent on the active participation of the community. Tasmanians are the critical decision makers for the effective delivery of this strategy. All members of the community should have the opportunity to contribute to the outcomes of this strategy. |

| Intergenerational equity |
| Our generation should ensure that the health, diversity and productivity of Tasmania’s natural heritage is maintained and where appropriate improved for future generations. |
The international, national and State policy and legislative framework that has guided the development of this strategy is extensive. The strategy builds on this framework, and previous experience while focusing on Tasmania. In particular the strategy builds on the experience from the Tasmania’s Nature Conservation Strategy 2002 – 2006 (SBC 2001) and Threatened Species Strategy (DPIWE 2000). It is consistent with Australia’s Biodiversity Conservation Strategy 2010 – 2030 (NRMMC 2010) and the Australian Natural Heritage Charter (AHC 2002). The timeframe for this strategy is deliberately long to allow us to focus on a systematic, integrated and planned approach to managing all components of our natural heritage. Although the strategy runs to 2030, implementation is designed to benefit Tasmania’s natural heritage for decades beyond 2030.

The Tasmanian Government’s Economic Development Plan (DEDTA 2011) aims to improve the prosperity of all Tasmanians through economic development that is socially and environmentally sustainable. The Natural Heritage Strategy complements the Economic Development Plan by increasing recognition of Tasmania’s capacity to conserve and leverage its natural heritage to improve economic prosperity. The strategy also promotes economic development that is environmentally sustainable, and optimises the value of our natural heritage, for all Tasmanians.

The strategy includes goals, objectives, actions, and outcomes that are designed to achieve the vision (Figure 2).

The strategy has four goals. The first goal aims to maintain and restore natural heritage in a changing environment, and ensure the conservation, sustainability and productivity of our landscapes, ecosystems and species. Goals two and three relate to strengthening partnerships, engaging stakeholders, and raising stakeholder and community awareness and participation. The fourth goal outlines how the strategy will be implemented, including priority actions for the first five years (2013 – 2018). The four goals are:

Goal 1: Tasmania’s biodiversity and geodiversity values are identified, understood and conserved.

Goal 2: All stakeholders and the community have the opportunity to support and protect natural heritage.

Goal 3: Tasmanians experience social, economic and environmental benefits from sound landscape scale conservation and management.

Goal 4: The Natural Heritage Strategy is implemented in a coordinated, efficient and effective way that achieves measurable results, and improves through experience.

The four goals and related objectives, actions and desired outcomes are discussed in the following sections.
Monitoring at Mount Sprent.

Photo by Nick Fitzgerald.
GOAL 1: Tasmania’s biodiversity and geodiversity values are identified, understood and conserved

Objective 1: The knowledge and information required to conserve biodiversity and geodiversity is available

Accurate information is critical to sound decision making and strategic planning and assessment, however there are gaps in our knowledge base. For example, we have limited information on many non-vascular plants and invertebrate species, and relatively little information about marine biodiversity. Habitat mapping in aquatic and terrestrial environments is not complete, and many areas of the State have not yet been surveyed for geodiversity values.

We have limited knowledge about interactions between species and their role in ecosystems. More information is also needed to understand how natural processes operate, are affected by human activities, and how they are likely to respond to management actions. Developing a landscape approach to conservation and planning will require new procedures and methods, and access to new sources of knowledge and information.

Monitoring is required to assess natural values, detect changes and new and emerging threats, and to evaluate the efficacy of management and conservation measures. This will enable an adaptive management approach that will be needed to respond to the challenges of climate change and other threatening processes in the coming decades. The strategy aims to increase the efficiency and effectiveness of monitoring by identifying key monitoring targets, coordinating data collection, management and analysis, and adopting new technologies. Objective 11 identifies actions to provide access to this information for all Tasmanians by building on existing information sources and taking advantage of new and emerging technology.

To fill gaps in our knowledge we need to better align scientific research with management needs.

LONG-TERM ACTIONS TO SUPPORT OBJECTIVE 1 BY 2030:

1. Implement and coordinate robust natural heritage information collection and monitoring systems that are aligned with national and State reporting requirements and are integrated with State, regional and locally-based conservation decision making and strategic planning.

2. Continue to identify knowledge required to conserve natural heritage and identify actions to address those gaps.

OUTCOMES FOR OBJECTIVE 1:

1.1 Information required for sound landscape conservation and strategic planning and assessment is prioritised, collected in a consistent manner and maintained in a systematic database.

1.2 Scientific research is better aligned with management and conservation requirements.
Objective 2: Biodiversity and geodiversity values are conserved

This strategy advocates a landscape approach to conservation activities. A landscape approach to conservation differs from traditional conservation by being capable of operating at larger spatial scales, and integrating management across multiple land uses and land tenures through consultation with land managers and land owners.

A landscape approach to conservation aims to ensure that conservation actions are prioritised and integrated so that:

- areas with highest conservation value are protected in public and private reserves, or otherwise managed to protect their values;
- land management adjacent to protected areas is sensitive to surrounding natural heritage values;
- remnant habitats are managed to increase connectivity and support landscape ecological processes; and
- sustainable land-use practices are in place in all areas of the State (Figure 1).

Many of the principles of landscape conservation and planning, and some landscape scale conservation activities, have been applied in Tasmania (for example see FPA 2012). These existing approaches will be built on to develop tools to prioritise, plan and manage at the landscape scale. A landscape approach will require coordination at a State level, which can flow on to more effective management at regional and local levels.

A landscape approach requires effective ongoing consultation with stakeholders to ensure ownership and participation in the process. This will require the development of tools and support systems to assist stewardship by land owners and managers to prioritise and coordinate conservation measures across multiple land tenures. These tools will build on successful programs that have resulted in sound conservation outcomes through voluntary environmental stewardship, such as the Protected Areas on Private Land program. This program has resulted in 230 perpetual conservation covenants, protecting more than 9,000 hectares of land, including habitat for an estimated 70 threatened species. Actions to build partnerships with stakeholders and promote the uptake of environmental stewardship programs will be discussed under Goal Four.

Integral to a landscape approach is the identification of conservation actions that need to be implemented at specific sites. For example protecting and managing small areas of threatened species habitat, providing advice for land and water management, and addressing new weed incursions in targeted areas. A landscape approach will assist priority setting amongst a range of actions for many natural values across a landscape to ensure efficient and effective use of resources.

This strategy aims to prevent additional species and vegetation communities from becoming threatened by applying a landscape approach to conservation. There are currently 680 threatened species and 39 native vegetation communities listed as threatened in Tasmania. It is likely that more threatened species and communities will be identified as more information about poorly known biodiversity values is collected. With a changing climate and other impacts on biodiversity it is also anticipated that the conservation status of some species and communities will decline.

Given these pressures, measures that ensure

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2 As at 29th of November 2012.
3 As at 29th of November 2012.
management arrangements are designed to deliver the most efficient and effective approaches to conserve threatened species and communities are needed. There is duplication and inconsistency in the way threatened species and communities are categorised and managed under State and federal legislation and policies. Working with the Australian Government and other jurisdictions to harmonise the listing process for threatened species and communities with IUCN listing processes is a priority. Other opportunities to reduce inconsistencies and duplication will also be explored. Furthermore a process for prioritising threatened species conservation work, which builds on existing approaches, is necessary to ensure the most efficient use of conservation resources. Where possible those activities should align with landscape planning and conservation objectives.

Geodiversity values in Tasmania face a range of threats, with coastal inundation and flooding, storm surges and effects of climate change posing significant challenges. Options to provide greater protection of geodiversity values will be scoped through a review of our existing policy and legislation (see Objective 15).

The current regulatory and management framework does not have a systematic or consistent method to manage cumulative and indirect impacts on biodiversity and geodiversity. Measures to address this gap will be achieved by developing a robust monitoring program (see Objective 1), and applying a landscape approach to conservation. A review of the State’s legislation and policies will also scope potential to address this gap (see Objective 15).

Effective conservation of estuarine and marine ecosystems requires a coordinated approach, recognising the range of measures that contribute to the conservation and protection of marine species and habitats in Tasmania. These measures have previously included the development of marine protected areas and the establishment of catch limits to ensure sustainable use of marine resources. A more holistic, risk-based approach to marine conservation will build upon these approaches, but also consider measures to manage emerging issues, such as implications of climate change in the marine environment. This approach will not only enhance Tasmania’s capacity to sustainably manage our marine environment, but will ensure we meet our national and international obligations, such as those instruments that require us to protect a range of marine mammal and seabird species.

**LONG-TERM ACTIONS TO SUPPORT OBJECTIVE 2 BY 2030:**

3. Implement a landscape approach to regulation, planning and conservation across public and private land.

4. Develop new mechanisms and methods that support stewardship of natural heritage by land managers.

5. Facilitate the integration of geoheritage values into resource management and planning systems.

6. Building on existing approaches, embed a holistic and risk-based approach to conservation in estuarine and marine environments.

7. Ensure that conservation measures for threatened species and communities are prioritised, efficient and effective, and consistent with national and international listing processes.

**OUTCOMES FOR OBJECTIVE 2:**

2.1 Landscape approaches to planning and conservation of natural values are understood and applied, and deliver better conservation outcomes.
2.2 The Tasmanian reserve estate is designed and managed to maximise conservation of natural values, and our terrestrial and marine environments outside of reserves are managed sustainably.

2.3 The conservation status of threatened species and communities is improved or maintained.

**Objective 3:**
The resilience of ecosystems, communities and species to threatening processes is strengthened

Ecosystem resilience is the ability of an ecosystem to withstand, recover from, or adapt to impacts without losing function and structure. Strengthening ecosystem resilience is an important management approach as it buffers against multiple threatening processes and is a key part of our response to climate change.

With more than 45 percent of land in public and private reserves, a significant proportion of Tasmania has some level of protection from some threatening processes. Maintaining the condition of reserves, and strategically expanding this network will contribute to enhancing ecosystem resilience. The landscape approach will also include protecting a network of areas that are refuges from threatening processes, increasing or managing connectivity within and between ecosystems, and maintaining or re-establishing natural processes, such as fire regimes and environmental water flows. All of these activities will help build ecosystem resilience.

Although increasing connectivity generally strengthens ecosystem resilience, in some situations isolation can protect biodiversity by reducing the impacts of invasive species and pathogens, and inappropriate fire regimes. A strategic landscape approach will also take into account the potential benefits of isolation in some situations. This will require a strategic approach to determine how to combine these different management options to maximise conservation outcomes across the landscape.

The approach will require coordination across private and public land, and across terrestrial, freshwater, coastal, estuarine and marine habitats. Therefore the task of strengthening ecosystem resilience will require support of all levels of government, regions, institutions, communities and individuals to ensure that the opportunities to maintain and enhance resilience are maximised. Our approach to strengthening ecosystem resilience will be in combination with directly preventing and reducing threats to natural heritage to ensure that Tasmania’s biodiversity and geodiversity values are protected.

**LONG-TERM ACTIONS TO SUPPORT OBJECTIVE 3 BY 2030:**

8. Identify a network of terrestrial and aquatic refugia and priority areas that can strengthen ecosystem resilience and support adaptation, and ensure that those areas are included in reserves or otherwise managed for conservation outcomes.

9. Ensure that ecosystem processes are understood and maintained.

10. Promote the management of fire to maintain natural values while appropriately managing fuel hazards.

**OUTCOMES FOR OBJECTIVE 3:**

3.1 The resilience of natural terrestrial and aquatic communities is maintained and where possible, and appropriate, enhanced.
3.2 Natural ecosystem and physical processes are understood, maintained, and where appropriate and possible, restored.

3.3 Fire is managed to maintain natural values, while managing fuel hazards to protect the community and assets.

**Objective 4:**

**Impacts on natural heritage are identified, assessed and managed through an environmental risk analysis approach**

Ensuring that threats to natural heritage are identified and appropriately managed through a rigorous risk analysis approach is fundamental for efficient management and conservation. Risk analysis provides a means to detect new and emerging threats, detect changes in the magnitude of existing threatening processes, and prioritise management actions. In a changing environment, the risk analysis process must be based on the best available science, take into account uncertainty, and be reviewed on an ongoing basis to ensure that risk mitigation measures are contemporary and effective. Adopting a rigorous risk management approach to conservation measures will provide species, communities and ecosystems the best chance to withstand, or adapt naturally to impacts on natural heritage.

There are a number of threatening processes that can impact – directly or indirectly, singularly or in combination – on our natural heritage. Priority issues include:

- climate change;
- invasive species and pathogens;
- inappropriate fire regimes;
- habitat loss, degradation and fragmentation;
- unsustainable use and management of natural resources; and
- changes to the aquatic environment and water flows (NRMMC 2010).

The actions in this strategy are aimed at addressing or reducing the impact of these threatening processes. It is likely that the nature and extent of threats will change in the coming decades, and there is a high likelihood that new threats will emerge. To address these issues an environmental risk analysis approach will be applied to identify and assess threats and prioritise management actions to protect our natural heritage.

Environmental risk assessments will also ensure that cumulative and in-direct impacts of small scale or localised activities on natural heritage are identified, assessed and managed. Localised impacts include activities such as illegally obtaining fire wood, smaller scale loss of vegetation, and marine debris.

**LONG-TERM ACTION TO SUPPORT OBJECTIVE 4 BY 2030:**

11. Incorporate environmental risk assessments throughout our work to identify and manage threats to natural heritage.

**OUTCOMES FOR OBJECTIVE 4:**

4.1 Conservation measures effectively target the most significant impacts on natural heritage.

4.2 New and emerging threatening processes are identified and appropriately managed.
Objective 5: Climate change adaptation and impact mitigation measures are identified, assessed and incorporated into conservation planning and management

The impacts of climate change on biodiversity and geodiversity are anticipated to be widespread, significant, and increase in magnitude over coming decades (Dunlop et al 2012, Scharples 2011). To minimise the predicted impacts there is an immediate need to consider options for conservation so that the management arrangements that will be required in the coming decades can be identified, developed, implemented and refined.

Management strategies will need to be adaptive and effective under a wide range of types and magnitudes of change. Many of the Objectives that have been identified already in this strategy will form part of our management approach to respond to climate change. Developing a landscape approach, which strengthens ecosystem resilience will be central.

It is inevitable that some of our natural values will be lost as a result of climate change. Rising sea-levels may reduce important habitat for coastal species through inundation and cause large scale coastal erosion of susceptible landforms such as sand dunes. Increased average temperatures may cause some alpine habitats to retract. Warm water marine species are likely to expand their range into Tasmanian coastal waters. Changed environmental conditions may favour invasive species and pathogens that could significantly alter ecosystems.

We will need to have measures to minimise and if necessary document these losses. For example some geoheritage features that may be permanently lost should be documented before the loss occurs.

It will be important to ensure that cultural values important to the Aboriginal community contained in landforms, such as shell middens in dunes are recorded.

In addition, ex-situ conservation measures will be important in circumstances where in-situ conservation measures are unlikely to protect biodiversity. Actions such as seed collection and storage by the Tasmanian Seed Conservation Centre at the Royal Tasmanian Botanical Gardens, and captive breeding, isolation and translocation projects similar to the approach currently used in the Save the Tasmanian Devil Program will be required.

LONG-TERM ACTIONS TO SUPPORT OBJECTIVE 5 BY 2030:

- Maximise availability of information and knowledge needed for sound adaptation responses by land managers, conservation planners and other decision makers, and promote the uptake of those measures.
- Ensure that geoheritage and other natural values likely to be lost are documented and where appropriate contribute to assessments of threats to associated Aboriginal heritage values.
- Maintain ex-situ collections of priority plants and animals to protect biodiversity, including genetic diversity, where feasible and appropriate.

OUTCOMES FOR OBJECTIVE 5:

- Integrated monitoring and research programs are in place to inform climate change management strategies.
- Climate change adaptation is incorporated into the management of Tasmania’s natural heritage.
- An improved understanding of the threat to natural heritage and associated Aboriginal heritage values that are vulnerable.
Objective 6:
Effective biosecurity measures are in place to minimise the impact of invasive species and pathogens on Tasmania’s natural heritage

Invasive species and pathogens are a major threat to our natural heritage, and it is expected that climate change and increasing global trade and movement will increase their impact in future. Tasmania is fortunate to have a better chance of preventing the incursion of invasive species and pathogens than the Australian mainland because of our relatively isolated position. The better conservation status of some small mammals in the State compared with the Australian mainland has been attributed to biosecurity. Our relative freedom from many invasive animals and pathogens has also benefited Tasmania in many ways, including the ability for primary producers to access international markets, and to reduce the need for some agricultural medicines and pesticides.

In the face of an increased level of risk, biosecurity measures will need to be robust to prevent new incursions. Tasmania has many animals and plants that are genetically distinct from their mainland con-specifics (i.e. animals and plants that are in the same species). In order to protect biodiversity we must ensure that biosecurity measures maintain the uniqueness of Tasmanian forms of species, as well as preventing the introduction of non-native species. To protect biodiversity, Tasmania should be fox free, and minimise the impacts of feral cats where possible.

We also need to be prepared to respond to new introductions of invasive species and pathogens, and to control and manage invasive species and pathogens that are established in Tasmania. Sometimes when a new species or disease is detected it is unclear whether it is native or introduced. This can be an issue in areas that are not well studied such as in marine environments or when new diseases emerge. It is expected in future it will be more difficult to differentiate between a range expansion of a native species and a new incursion of an invasive species or pathogen; this will be particularly challenging in the marine environment. Our management framework needs to be robust to account for these scenarios and to ensure that natural values are protected.

As the Tasmanian Biosecurity Strategy highlights, a successful approach to biosecurity in Tasmania requires all Tasmanians working together to achieve results (TBC 2013). Raising awareness and building the capacity of the Tasmanian public, land managers and primary industries to participate in biosecurity measures will be fundamental to achieving this objective. Much work has already been done in this area by community groups, primary industries and major land managers such as primary producers, the Hydro Tasmania and Forestry Tasmania. The Department will continue to work with these stakeholders to build preparedness and ongoing management arrangements to minimise the impact of invasive species and pathogens on our natural heritage.

LONG-TERM ACTIONS TO SUPPORT OBJECTIVE 6 BY 2030:

15. Maintain sound biosecurity measures to prevent the introduction of new incursions into Tasmania through cooperation with the Australian government and other jurisdictions.

16. Ensure that monitoring programs are designed to detect new incursions of invasive species and pathogens, and the occurrence of new diseases in native species; and increase capability and capacity to respond to new detections.

17. Develop, implement and review State, regional and local plans to manage invasive species and pathogens.
OUTCOMES FOR OBJECTIVE 6:

6.1 The condition and health of natural heritage is maintained or improved through measures to prevent, control and manage invasive species and pathogens.

6.2 Tasmania is prepared to effectively respond to new incursions of invasive species and pathogens, and the occurrence of new diseases.

Objective 7:
Tasmania’s ecosystem resources and services are used sustainably

Many primary producers and resource users manage their natural resources in a way that promotes conservation through sustainable practices and grass roots community action. Tools such as property management planning and environmental management systems provide a means to plan their management for multiple outcomes, which include agricultural productivity, biodiversity conservation, and to protect soil health and water quality. Additionally fisherens are managed to prevent impacts on non-target species and ensure sustainability. Improved awareness and understanding of natural values via education and awareness will foster a proactive approach to conservation from land managers and owners.

By including a landscape approach to conservation the Department aims to better align activities on properties and in the sea with regional and statewide planning. The Department will continue to provide advice to land managers and marine farmers about options to conserve our natural heritage. We will continue to work with rural industry and NRM bodies to develop a functional and relevant property management planning systems framework intended to provide a method to ensure environmental best practice at the property scale, whilst streamlining regulatory processes impacting land managers. The Department will support primary industries to develop and adopt appropriate environmental management systems to assist in the accreditation of product quality and environmental management excellence.

The Department will work in close partnership with non-government organisations in Tasmania to provide opportunities for land managers to protect, restore and rehabilitate natural values on their properties. A coordinated approach that supports conservation, while maintaining productivity, is key to meeting the objectives that we are aiming to achieve for natural resource management in Tasmania.

Natural ecosystems provide Tasmanians with essential ecosystem services. One of the most valuable services our ecosystems provide is fresh water, which is used for recreation, consumption, irrigation, industry and to generate power. Greater awareness of ecosystem services will facilitate conservation, both on private and public land. It is likely the sustainable limits of ecosystem services, such as the provision of fresh water, will change in response to climate change and other threatening processes. Monitoring and assessment will be essential to determine those limits (see Objective 1).
LONG-TERM ACTIONS TO SUPPORT OBJECTIVE 7 BY 2030:

18. Incorporate management on a property scale into a landscape approach to conservation, and promote the uptake of property management planning and environmental management systems in agriculture, aquaculture and fisheries.

19. Promote the value of ecosystem services, and ensure that consideration of those values are incorporated into decision making and planning systems.

OUTCOMES FOR OBJECTIVE 7:

7.1 Land-use is sustainable and land degradation is reduced, and where appropriate the land is restored or rehabilitated.

7.2 Ecosystem services are maintained and remain available at their current levels for future generations.

GOAL 2:
ALL STAKEHOLDERS AND THE COMMUNITY HAVE THE OPPORTUNITY TO SUPPORT AND PROTECT NATURAL HERITAGE

Objective 8:
Strengthen partnerships with the Tasmanian Aboriginal community

The natural heritage that all Tasmanians enjoy today has been shaped by tens of thousands of years of stewardship by Tasmanian Aboriginal people. This tradition that spans more than 2000 generations continues today, with the Tasmanian Aboriginal community managing more than 55,000 hectares of Aboriginal land in the State. It is expected that this area will increase as more Aboriginal land is handed back, and more areas are co-managed with the Tasmanian Aboriginal community.

The Department will act to ensure that natural areas of cultural significance to the Tasmanian Aboriginal community are appropriately protected. For areas of cultural significance on public land the Department will work with the Aboriginal community to develop interpretation of those sites when the community considers it is appropriate and desirable to do so. This will increase Tasmanian’s awareness of the vast traditional culture that belongs to the Tasmanian Aboriginal community.

Environmental management and conservation works can provide opportunities for employment and to maintain and strengthen culture. The Department will work with the Tasmanian Aboriginal community to identify opportunities and priorities for projects under programs such as the Commonwealth’s Caring for Our Country program, to identify areas that the
Department can assist, for example by providing technical assistance. This will be mutually beneficial with potential for sharing of knowledge.

The Department respects traditional cultural hunting and fishing activities and in implementing this strategy will continue to support the Tasmanian Aboriginal community conducting these activities. The Department recognises that it has an international obligation to do this under the United Nations Declaration on the Rights of Indigenous Peoples, but just as importantly, we recognise that doing so acknowledges the unique role played by the Tasmanian Aboriginal community in shaping and managing this landscape.

**LONG-TERM ACTIONS TO SUPPORT OBJECTIVE 8 BY 2030:**

20. Build partnerships between the Department and the Tasmanian Aboriginal community to increase employment and participation in land and sea management.

21. Collaborate with the Tasmanian Aboriginal community to conduct monitoring and research, develop interpretation works, and work together on conservation management actions.

22. Work with the Tasmanian Aboriginal community to remove barriers to conducting cultural activities such as traditional hunting.

**OUTCOMES FOR OBJECTIVE 8:**

8.1 Increased participation and employment of the Tasmanian Aboriginal community in nature conservation programs.

8.2 Tasmanians recognise and respect the influences of Tasmanian Aboriginal people on the landscape.

8.3 Impediments to the Tasmanian Aboriginal community having access to natural resources to conduct cultural activities are removed.

**Objective 9:**

Partnerships within and between government, NRM regional organisations, NGOs, research organisations, industry, land managers and the community are coordinated, effective and where possible strengthened.

A landscape approach requires coordination at a State level, across the NRM regions and local government areas. To achieve the vision of this strategy all levels of government, stakeholders and the community will need to work together to protect our natural heritage. Conservation of our natural heritage must be integrated into broader decision making. Demonstrating the benefits of protecting our natural heritage will be fundamental to ensuring that Tasmanians are engaged and can participate in conserving our biodiversity and geodiversity.

Industries that have a direct impact on natural heritage (both positive and negative) such as the agriculture, fishing, forestry, mining and construction sectors must be engaged to ensure that efforts to conserve natural heritage are included in their decision making processes, management activities and reporting. We need to make sure that all sectors of primary industries and the community engage in conservation measures that are relevant and beneficial to their community. Many of these sectors already demonstrate strong leadership in this respect. Recognition of these efforts is also an important component of achieving long-term participation in natural resource management (see Objective 12).
LONG-TERM ACTIONS TO SUPPORT OBJECTIVE 9 BY 2030:

23. Enhance collaborative and coordinated approaches to conservation.

24. Promote the uptake of stewardship agreements between public land managers and adjoining landowners.

25. Build a volunteer network able to assist with a broad range of conservation activities.

26. Facilitate the integration of natural heritage values into resource management and planning systems.

OUTCOMES FOR OBJECTIVE 9:

9.1 Tasmania contributes to national conservation measures.

9.2 An increase in public and private sector (including primary industries) participation in conservation activities.

9.3 A comprehensively representative array of natural values is protected through public reserves and on privately owned and managed land.

Objective 10: Enhance strategic investments and partnerships

Cooperation between government and the community will be fundamental to achieving the conservation outcomes outlined in this strategy. This may involve more private expenditure on conservation through the growing network of environmental non-government organisations and formal partnerships between other sectors, including the primary industries sector. The Department will work towards a more cooperative approach to delivering conservation programs in Tasmania.

To ensure that the value of conservation measures is fully appreciated there should be incentives for conserving natural heritage. These can include, but are not limited to, financial incentives, which can be direct, in the form of subsidies, stewardship payments or rebates (such as rate rebates) or indirect, in the form of market participation. Market based approaches to conserving biodiversity, geodiversity and ecosystem function are a growing area of conservation. Examples of these kinds of market-based incentives include the regulated trade in water (where improved efficiency results in lower usage costs); and the emerging carbon market, where trade in carbon may reward the establishment and/or maintenance of vegetation.

The Department will work to promote the objectives of this strategy in new markets such as those for carbon and water to maximise conservation outcomes while avoiding unintended negative impacts on natural values. We will aim to leverage natural heritage outcomes from bio-sequestration of carbon.

The Department will assist emerging environmental markets by providing timely and transparent information and work with stakeholders to develop mechanisms that identify and reward sound environmental practices. This will include
investigating successful business models nationally and internationally to model activities on successful environmentally sustainable organisations and accreditation programs.

LONG-TERM ACTION TO SUPPORT OBJECTIVE 10 BY 2030:

27. Integrate policy for natural heritage protection with market based instruments and seek to increase voluntary private investment in conservation programs, in collaboration with stakeholders.

OUTCOMES FOR OBJECTIVE 10:

10.1 An increase in the use of market based instruments and other incentives for managing natural heritage.

10.2 An increase in private expenditure on conserving natural heritage.

10.3 An increase in public – private partnerships for nature conservation.

Objective 11:
Stakeholders and the public have access to information required for the conservation of natural heritage

The Department will continue to work with stakeholders to improve access to, and continuously improve existing information systems and tools, and scope opportunities to develop and provide access to new information tools. These tools will take advantage of new and emerging technology and infrastructure, such as the National Broadband Network, and use the most up-to-date methods to develop and disseminate information.

The Department will provide a single point on the Department’s website to access information about our natural heritage. This single portal will build on the information that is currently stored in the Natural Values Atlas, including the Tasmanian Geoconservation Database, TASVEG Database, the Conservation Information System and the Threatened Species Link. The Department will continue to work with stakeholders to develop and promote the use of these information systems.

LONG-TERM ACTION TO SUPPORT OBJECTIVE 11 BY 2030:

28. Develop and implement information and communication programs to raise awareness of natural values.

OUTCOME FOR OBJECTIVE 11:

11.1 The public has access to information about natural heritage, and information to assist land-use planning and conservation measures.
GOAL 3:
TASMANIANS EXPERIENCE SOCIAL, ECONOMIC AND ENVIRONMENTAL BENEFITS FROM SOUND LANDSCAPE SCALE CONSERVATION AND MANAGEMENT

Objective 12:
Land managers and primary producers are recognised and rewarded for conservation activities

Land managers should be rewarded for conservation activities on their land that are over and above legislative requirements. Market based instruments are one element that reward land managers and primary producers who conduct ecologically sustainable practices (see Objective 10). Additionally many markets are now demanding that food, fibre, wine, timber and other products are produced sustainably, and products that can demonstrate this can achieve improved market access, and in some cases a premium.

The Department will continue to support these actions by promoting sound land management, and improving market recognition of the Tasmanian Brand. For example the government will promote the environmental practices of primary producers, and support environmental accreditation for Tasmanian producers to access markets and to trade on the Brand Tasmania through third party accreditation, such as stewardship councils. The Department will work to promote other initiatives which could reward conservation activities on private land, which may be available, including through Commonwealth funding programs.

LONG-TERM ACTIONS TO SUPPORT OBJECTIVE 12 BY 2030:

29. Support measures to validate the Tasmanian Brand as a premium environmentally sustainable product.

30. Investigate opportunities for incentive schemes for land managers who adopt sustainable land management practices and actively protect natural values.

OUTCOMES FOR OBJECTIVE 12:

12.1 Tasmanian primary producers receive a premium from the Brand Tasmania.

12.2 Land managers receive assistance with, and benefit from, ecologically sustainable practices and conservation activities.

Objective 13:
The Tasmanian community and economy benefits from conservation of our natural heritage

Managing our natural heritage requires a partnership between the community and government. Tasmanians have a strong record of volunteering in Landcare, Coastcare, Waterwatch and other “Friends of” groups. Many Tasmanians have professions that are linked to managing our natural heritage either directly or indirectly. Tasmania has a very strong research community including the University of Tasmania (UTas), the Commonwealth Scientific and Industrial Research Organisation (CSIRO), the Institute for Marine and Antarctic Studies (IMAS), the Tasmanian Institute of Agriculture (TIA) and the Australian Antarctic Division (AAD).
The tourism sector also relies on our natural heritage as the number one drawcard to attract visitors to the State, and our primary industries are dependent on the ecosystem services that our natural heritage provides.

As well as providing employment for Tasmanians, our natural heritage contributes to the Tasmanian way of life, supporting popular recreational activities such as camping, boating, diving, fishing, hunting and bushwalking as well as providing a peaceful and restorative backdrop to everyday life. These outdoor activities also support a healthy lifestyle. It is important that all Tasmanians have the opportunity to benefit from our natural heritage.

**LONG-TERM ACTION TO SUPPORT OBJECTIVE 13 BY 2030:**

31. Continue to promote Tasmania’s unique natural heritage, reinforcing the Tasmanian Brand and the importance of natural values to our community’s well-being.

**OUTCOME FOR OBJECTIVE 13:**

13.1 The Tasmanian community benefits from conservation of our natural heritage.

**GOAL 4:**

**THE NATURAL HERITAGE STRATEGY IS IMPLEMENTED IN A COORDINATED, EFFICIENT AND EFFECTIVE WAY THAT ACHIEVES MEASURABLE RESULTS, AND IMPROVES THROUGH EXPERIENCE**

**Objective 14:**

Conservation measures are delivered effectively and efficiently, and improved through an adaptive management approach

Conservation measures must be delivered efficiently for the most effective outcomes from our investment in our natural heritage programs, and to realise the on-ground outcomes that this strategy aims to achieve. To ensure this the Department will have a coordination role, between other jurisdictions, and between planning authorities in Tasmania, NRM regional bodies, environmental non-government organisations, land managers, the Aboriginal community and the wider Tasmanian community.

We will work with planning authorities and other agencies responsible for developing and implementing policy and regulatory approaches to land use planning to incorporate natural heritage conservation outcomes within those processes. The Department will also provide information required to aid landscape conservation and strategic planning and assessment. This will assist and promote a consistent approach to conserving our natural heritage across the three NRM regions, three regional planning project areas and across the 29 local government areas in Tasmania.
Departmental information and advice will also assist the numerous local volunteer groups involved in delivering on-ground conservation works in Tasmania.

We will also collaborate with research providers, environmental non-government organisations and peak bodies to maximise the breadth of impact that this strategy will have. To achieve the maximum impact we will ensure that we support and complement existing national, State and regional policies, including the overarching Australia’s Biodiversity Conservation Strategy 2010–2030.

**LONG-TERM ACTIONS TO SUPPORT OBJECTIVE 14 BY 2030:**

32. Apply adaptive management techniques to enhance and improve conservation measures.

33. Provide strategic direction, resourcing, coordination, and monitor the outcomes of the strategy.

34. Promote the integration of the strategy into regional NRM plans and regional land-use strategies.

**OUTCOMES FOR OBJECTIVE 14:**

14.1 Conservation is a fundamental component of natural resource management decision making, planning, and policy development; and conservation programs are coordinated and achieve on-ground results.

14.2 The implementation of this strategy contributes to national strategies; and regional plans, strategies and policies align with this strategy.

**Objective 15:**

*Tasmanian legislation, policies and processes are contemporary, and will meet future needs*

There are a number of pieces of Tasmanian legislation that are critical to conserving our natural heritage, including the *Nature Conservation Act 2002*, *Threatened Species Protection Act 1995*, *Whales Protection Act 1988*, and the *Weed Management Act 1999*. Having set the long-term conservation objectives in this strategy, the next step is to examine existing Tasmanian legislation, policies and procedures. These will be reviewed to determine whether they can effectively and efficiently deliver our objectives, and where appropriate to reduce duplication and inconsistencies with Commonwealth arrangements under the *Environment Protection and Biodiversity Conservation Act 1999*.

**LONG-TERM ACTION TO SUPPORT OBJECTIVE 15 BY 2030:**

35. Develop and maintain contemporary conservation legislation, policies and procedures in Tasmania.

**OUTCOME FOR OBJECTIVE 15:**

15.1 Tasmanian conservation legislation, policies and procedures are contemporary and consistent with other jurisdictions.
Objective 16: Regional, State and national reporting informs priority setting and future management

For this strategy to have a tangible effect, and achieve the stated goals and objectives, progress must be tracked through transparent, robust and regular monitoring. Monitoring, Evaluation, Reporting and Improvement (MERI) will be a key activity during the implementation of the strategy. A cycle of continuous improvement will enable timely and effective responses to changing circumstances and new information. This approach will also ensure that the Department will be able to assess implementation, and make any changes that may be required. Being able to identify progress towards our vision may also increase stakeholder support for, and participation in implementation. Adopting a MERI approach will also reduce the risk of duplicating reporting processes.

We will use a number of methods to communicate progress towards implementing the Natural Heritage Strategy to stakeholders and the community. This will include a formal MERI process every five years, when the progress will be reported and future directions determined. We will also report on progress by:

- Making progress reports available to the public by integrating reporting with existing requirements such as Annual Reports, Tasmania Together, and “State of…” reports;
- Reporting progress towards implementation to the Minister administering the Nature Conservation Act 2002 annually; and
- Reporting progress to the Commonwealth and other jurisdictions.

A rigorous approach to monitoring, evaluation and review will facilitate a cycle of continuous improvement (Figure 3). This will maximise opportunities for current and future generations of Tasmanians to achieve a sound balance between environmental, economic, social and cultural values.

Figure 3 The adaptive management cycle.

LONG-TERM ACTION TO SUPPORT OBJECTIVE 16 BY 2030:

36. Implement an integrated program of performance monitoring, evaluation, reporting and improvement on five yearly cycles to review management arrangements and set future objectives and priorities.

OUTCOME FOR OBJECTIVE 16:

16.1 Realistic and meaningful performance measures are in place to report progress on implementing the Natural Heritage Strategy.
Objective 17:
Undertake a staged approach to implementation

Progress towards achieving the goals and objectives of this strategy will require a number of actions. The strategy identifies 36 long-term actions that will be undertaken throughout the life of the strategy. This section outlines the actions that the Department will take in the short-term to begin the implementation process, to build towards the long-term actions. These priorities include programs and practices that are already embedded, activities that are being developed, and new initiatives that the Department will focus on in the short-term. The priorities contain a number of important focus areas including:

1. Adopting a landscape scale approach to conservation.
2. Planning for, and responding to, climate change.
4. Implementing a more holistic risk-based approach to marine conservation.
5. Developing more effective threatened species management.
6. Strengthening partnerships with the Tasmanian Aboriginal community and increasing stakeholder and community involvement in conservation activities.
7. Reviewing Tasmania’s legislation, policies and procedures to identify opportunities to improve efficiencies and efficacy.

Table 1 outlines the priorities for action under each of the goals and objectives of the strategy. The objectives that the priorities are working towards are also provided. These priorities for action will form the basis of an implementation plan which will be developed in 2013 for the first five years of the strategy (2013 – 2018).
<table>
<thead>
<tr>
<th>Table 1: Priority actions to guide implementation from 2013 – 2018 to meet Objective 17 (Undertake a Staged Approach to Implementation).</th>
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</thead>
<tbody>
<tr>
<td><strong>Goal 1:</strong> Tasmania’s biodiversity and geodiversity values are identified, understood and conserved</td>
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<td><strong>Objective 1:</strong> The knowledge and information required to conserve biodiversity and geodiversity is available.</td>
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<td><strong>Objective 2:</strong> Biodiversity and geodiversity values are conserved.</td>
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<td><strong>Objective 3:</strong> The resilience of ecosystems, communities and species to threatening processes is strengthened.</td>
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<td>9</td>
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<tr>
<td><strong>Objective 4:</strong> Impacts on natural heritage are identified, assessed and managed through an environmental risk analysis approach.</td>
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<td>10</td>
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<tr>
<td><strong>Objective 5:</strong> Climate change adaptation and impact mitigation measures are identified, assessed and incorporated into conservation planning and management.</td>
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<td>12</td>
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<td>13</td>
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<tr>
<td><strong>Objective 6:</strong> Effective biosecurity measures are in place to minimise the impact of invasive species and pathogens on Tasmania’s natural heritage.</td>
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<td>15</td>
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<td>16</td>
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<tr>
<td><strong>Objective 7:</strong> Tasmania’s ecosystem resources and services are used sustainably.</td>
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<td>17</td>
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<td>18</td>
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<tr>
<td><strong>Goal 2:</strong> All stakeholders and the community have the opportunity to support and protect natural heritage</td>
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<tr>
<td><strong>Objective 8:</strong> Strengthen partnerships with the Tasmanian Aboriginal community.</td>
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<td>19</td>
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<td>20</td>
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<td>21</td>
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</tbody>
</table>

**Objective 9:** Partnerships within and between government, NRM regional organisations, NGOs, research organisations, industry, land managers and the community are coordinated, effective and where possible strengthened.

| 22 | Enter into conservation partnerships between government, the Aboriginal community, local government, NRM regional organisations, NGOs, industry, primary producers, and land managers. |
| 23 | Assist stakeholders through capacity building, improved knowledge and the provision of planning tools. |
| 24 | Encourage volunteer participation and identify how to optimise participation and conservation outcomes from volunteer work. |
| 25 | Work with local government and other stakeholders to ensure that biodiversity and geodiversity protection mechanisms are incorporated into regional and local resource management and planning systems. |
| 26 | Continue to work with the Australian Government and other jurisdictions to harmonise conservation measures. |

**Objective 10:** Enhance strategic investments and partnerships.

| 27 | Identify opportunities for conservation from new and emerging markets, and develop strategies to identify and avoid unintended environment impacts from those markets. |

**Objective 11:** Stakeholders and the public have access to information required for the conservation of natural heritage.

| 28 | Continue to develop accessible information tools to provide natural heritage information to stakeholders and the public. |

**Goal 3:** Tasmanians experience social, economic and environmental benefits from sound landscape scale conservation and management

**Objective 12:** Land managers and primary producers are recognised and rewarded for conservation activities.

| 29 | Support measures to validate the Brand Tasmania, including supporting third party accreditation programs. |
| 30 | Work cooperatively with industry groups to identify opportunities for developing incentive schemes. |

**Objective 13:** The Tasmanian community and economy benefits from conservation of our natural heritage.

| 31 | Provide assistance to Tourism Tasmania to maximise opportunities from the recognition of Tasmania as a National Landscape. |

**Goal 4:** The Natural Heritage Strategy is implemented in a coordinated, efficient and effective way that achieves measurable results, and improves through experience

**Objective 14:** Conservation measures are delivered effectively and efficiently, and improved through an adaptive management approach.

| 32 | Apply adaptive management techniques to enhance and improve conservation measures. |
| 33 | Establish an effective structure and mechanisms to implement the Strategy, monitor progress, and resolve issues and conflicts that may arise during implementation. |
| 34 | Promote the incorporation of natural heritage conservation objectives and actions into regional NRM plans and regional land-use strategies. |

**Objective 15:** Tasmanian legislation, policies and processes are contemporary, and will meet future needs.

| 35 | Conduct a review of the adequacy and scope of existing conservation legislation. |

**Objective 16:** Regional, State and national reporting informs priority setting and future management.

| 36 | Report progress towards implementing the Natural Heritage Strategy to the Minister administering the Nature Conservation Act 2002 annually, and progress against the Australian Biodiversity Conservation Strategy 2010 - 2030 as required. |
Granite tors in eastern Tasmania.
Photo by Mike Comfort.
These definitions have been adapted from Australia’s Biodiversity Conservation Strategy 2010 - 2030 (NRMMC 2010).

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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</thead>
<tbody>
<tr>
<td>Adaptation</td>
<td>Adaptation refers to both human responses and responses of natural systems or species to change. In the context of climate change adaptation, this strategy refers to human actions designed to minimise the negative effects of anticipated climate change and capitalise on positive opportunities associated with impacts, as well as the changes that will occur in natural systems as climatic conditions change.</td>
</tr>
<tr>
<td>Adaptive management</td>
<td>Adaptive management is environmental management practice that accommodates uncertainty and responds to events as they unfold. It involves taking a structured, iterative approach to finding the best options for action in the face of uncertainty and risk. It includes monitoring change over time, so that the results of management choices can be assessed and changes made if needed to improve future management. Adaptive management is often characterised as ‘learning by doing’.</td>
</tr>
<tr>
<td>Aquatic ecosystems</td>
<td>Ecosystems are classed as aquatic where water determines ecosystem functioning or character, whether the water is flowing or standing, persistent or intermittent. Aquatic ecosystems include fresh, brackish and saltwater ecosystems, and terrestrial, subterranean and marine ecosystems.</td>
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<tr>
<td>AAD</td>
<td>Australian Antarctic Division.</td>
</tr>
<tr>
<td>Biodiversity (biological diversity)</td>
<td>Biodiversity is the variability among living organisms from all sources (including terrestrial, aquatic, marine and other ecosystems and the ecological complexes of which they are part), at all levels of organisation, including genetic diversity, species diversity and ecosystem diversity.</td>
</tr>
<tr>
<td>Biosecurity</td>
<td>Biosecurity is the protection of industries, the environment and public well-being, health, amenity and safety from the negative impacts of pests, diseases and weeds.</td>
</tr>
<tr>
<td>Climate change</td>
<td>Any long-term significant change in the average weather that a given region, or the Earth as a whole, experiences. In recent usage, the term climate change often refers to changes in the contemporary climate due to human activities, primarily the emission of greenhouse gases to the atmosphere (this is sometimes called anthropogenic climate change, or global warming).</td>
</tr>
<tr>
<td>Connectivity</td>
<td>Connectivity refers to linking otherwise isolated areas of the landscapes. Connectivity permits movement of organisms or genetic flows across the landscape.</td>
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<tr>
<td>Conservation</td>
<td>The protection, maintenance, management, sustainable use, restoration and improvement of natural heritage.</td>
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<tr>
<td>CSIRO</td>
<td>Commonwealth Scientific and Industrial Research Organisation.</td>
</tr>
<tr>
<td>Degradation</td>
<td>In the context of environmental values, degradation refers to a loss of quality or functionality. It is used in various ways, e.g. forms of land degradation include salinity, wind erosion, water erosion, soil acidity and water-logging; degradation of vegetation may refer to loss of extent, condition or capacity to self-regenerate.</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
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<tr>
<td>Ecological communities</td>
<td>Ecological communities are naturally occurring groups of plants and animals. Their species composition can be determined by factors such as soil type, position in the landscape, climate and water availability.</td>
</tr>
<tr>
<td>Ecological processes</td>
<td>Actions and events that shape ecosystems. Understanding ecological processes - both continuous processes like nutrient cycling and carbon sequestration, and periodic or irregular disturbances like fire - is the key to the development and implementation of ecologically sustainable management.</td>
</tr>
<tr>
<td>Ecologically sustainable use</td>
<td>The use of a species or ecosystem within its capacity for natural renewal or regeneration. Consistent with ecological sustainability, ecologically sustainable use may be extractive and non-extractive.</td>
</tr>
<tr>
<td>Ecological sustainability</td>
<td>A state in which biological systems will remain diverse and productive over time, even though change will occur. The idea of ecological sustainability recognises that human use or development of biological systems must be consistent with protection of biological diversity and maintenance of essential ecological processes and life-support systems. Such use may be extractive and non-extractive.</td>
</tr>
<tr>
<td>Ecosystem</td>
<td>A dynamic combination of plant, animal and micro-organism communities and their non-living environment (e.g. soil, water and the climatic regime) interacting as a functional unit. Examples of types of ecosystems include forests, wetlands, grasslands and tundra.</td>
</tr>
<tr>
<td>Ecosystem diversity</td>
<td>The variety of habitats, ecological communities and ecological processes.</td>
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<tr>
<td>Ecosystem functions</td>
<td>As used in this strategy, ecosystem functions are the mechanisms by which ecosystems generate supporting, providing, regulating and cultural services. For example, soil formation is a supporting service generated (in part) through microbial processing of organic and non-organic matter. Biodiversity plays a fundamental role in - and depends on - these complex, interlinked functions.</td>
</tr>
<tr>
<td>Ecosystem resilience</td>
<td>Resilience is used in this strategy to refer to the capacity of an ecosystem to withstand, recover from, or adapt to changes and disturbances, yet retain its basic functions and structures.</td>
</tr>
<tr>
<td>Ecosystem services</td>
<td>The functioning of natural ecosystems provides services essential to human survival and well-being. Natural ecosystems maintain the atmosphere; provide clean water; control soil erosion; pollution and pests; pollinate plants; and provide many other essential processes. The language of ecosystem services has emerged in recent decades as a way of representing the significance of the benefits humans derive from natural systems.</td>
</tr>
<tr>
<td>Environment</td>
<td>Includes ecosystems and their constituent parts, including people and communities; natural and physical resources; the qualities and characteristics of locations, places and areas; and their social, economic and cultural aspects.</td>
</tr>
<tr>
<td>Ex-situ conservation</td>
<td>Conservation of species outside their natural habitat; for example, in zoos, botanic gardens and seed banks (compare with in-situ conservation).</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
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</tr>
<tr>
<td>Fragmentation</td>
<td>Fragmentation is used in this strategy to describe the result of removal (usually by clearing) of large parts of a natural area, resulting in the retention of only small parts (fragments or remnants) of habitat. Fragmentation is an issue for marine and other aquatic environments.</td>
</tr>
<tr>
<td>Genetic diversity</td>
<td>The variety of genetic information contained in individual plants, animals and microorganisms.</td>
</tr>
<tr>
<td>Geoconservation</td>
<td>Conservation of significant examples of geodiversity (bedrock, landform soil features and assemblages, systems and processes), maintaining natural rates and magnitudes of change.</td>
</tr>
<tr>
<td>Geodiversity</td>
<td>The natural range (diversity) of geological (bedrock), geomorphological (landform) and soil features, assemblages, systems and processes.</td>
</tr>
<tr>
<td>Geoheritage</td>
<td>Places containing those components of natural geodiversity which are of significant value to humans for purposes which do not decrease their intrinsic or ecological value: such purposes may include scientific research, education, aesthetics and inspiration, cultural development and contribution to a sense of place experienced by human communities.</td>
</tr>
<tr>
<td>Geomorphological processes</td>
<td>Those processes both active and inactive that have and continue to shape the earth’s landforms.</td>
</tr>
<tr>
<td>Habitat</td>
<td>The locality or natural home in which a plant, an animal or a group of closely associated organisms live.</td>
</tr>
<tr>
<td>Habitat conservation</td>
<td>Conserving, protecting and restoring habitat areas for plants and animals to prevent their extinction, fragmentation or reduction in range.</td>
</tr>
<tr>
<td>Holocene</td>
<td>The Holocene epoch has lasted from about 10,000 years ago to the present day. It covers the period since the ice retreated after the last glaciations.</td>
</tr>
<tr>
<td>In-situ conservation</td>
<td>Conserving species within their natural habitat (compare with ex-situ conservation).</td>
</tr>
<tr>
<td>IMAS</td>
<td>Institute for Marine and Antarctic Studies.</td>
</tr>
<tr>
<td>Invasive species</td>
<td>A species occurring beyond its accepted normal distribution and which threatens valued environmental, agricultural, marine or social resources.</td>
</tr>
<tr>
<td>IUCN</td>
<td>The International Union for the Conservation of Nature.</td>
</tr>
<tr>
<td>Landscape</td>
<td>Heterogeneous areas of local ecosystems and land uses that is of sufficient size to achieve long-term outcomes in the maintenance and recovery of species or ecological processes, or in the protection and enhancement of ecological and evolutionary processes. Landscapes include areas with multiple uses. From a management perspective the scale of landscapes will depend on the management issue being considered. In this strategy landscapes include both terrestrial and aquatic landscapes.</td>
</tr>
</tbody>
</table>
### Landscape scale conservation

A management approach that focuses on the maintenance and restoration of functioning natural ecosystems across landscapes and marine areas, and requires systematic conservation planning. A good landscape conservation approach:

- Recognises the importance of multi-scaled conservation from site to property to catchment to region to state depending on the natural heritage values under consideration.
- Integrates conservation management across land-tenure and land-uses.
- Engages land managers and the community and supports them to manage land and water in a sustainable way.
- Seeks to maintain and restore connectivity for species through conservation management of natural heritage values.
- Enables prioritisation of critical activities for protection.
- Identifies the natural heritage significance of remnant patches within a broader landscape and applies that understanding to land-use decision making.
- Recognises the interdependence of nature across large areas.

### Market-based instruments and trading-based schemes

Market-based instruments are government interventions that encourage desired behaviour through incentives rather than through explicit directives. They include cap and trade schemes, auctions and information disclosure. Trading-based schemes are a subset of market-based instruments that focus on instruments involving trading.

### MERI

The continuous and integrated cycle of Monitoring, Evaluation, Reporting and Improvement.

### Natural Heritage

Our natural heritage is our entire environment, it includes Tasmania’s water, air, land, sea, plants and animals. It includes biodiversity, geodiversity, and ecosystem processes in terrestrial and aquatic environments.

### NRM

Natural Resource Management.

### NRMMC


### Offset

A general term used in this strategy to mean measures that are taken, usually as a requirement under planning or conservation law, to compensate for the environmental impacts of a development or other land use action. For example, approval of a new residential development may depend on the developer setting aside an area of land for conservation to offset unavoidable loss of vegetation on the development site.

### Pleistocene

The Pleistocene epoch lasted from about 2 million to about 10,000 years ago. It was marked by great fluctuations in temperature that caused the ice ages, with glacial periods followed by warmer interglacial periods.
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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</table>
| Precautionary principle                   | Where there are threats of serious or irreversible environmental damage, a lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. In the application of the precautionary principle, public and private decisions should be guided by:  
- careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment; and  
- an assessment of the risk-weighted consequences of various options. |
| Ramsar                                    | The Convention on Wetlands of International Importance.                                                                                                                                                     |
| Refugia (plural of refugium or refuge)     | Places and/or habitats in a landscape that support populations of species when changing environmental conditions, due to phenomena such as drought, fire and climate change, in the surrounding landscape make it unfavourable for the species to persist. |
| Resilience                                | See ecosystem resilience.                                                                                                                                                                                  |
| Revegetation                              | The re-establishment of vegetation in areas that have been cleared or highly modified. The mix of plant species may not be the same as that of the original vegetation.                                           |
| Risk Assessment                           | The consistent application of a process of assessing the likelihood and consequence of an activity/situation, determining if the risk is acceptable, or can be managed (mitigated) to an acceptable level and communicating the results of the risk assessment and possible mitigation measures. Risk assessments will apply the precautionary principle. |
| Risk Based Approach                       | A staged, systematic approach that will be informed as new information comes to hand.                                                                                                                      |
| RMPS                                      | Resource Management and Planning System. The objectives of the RMPS are:  
- to promote the sustainable development of natural and physical resources and the maintenance of ecological processes and genetic diversity;  
- to provide for the fair, orderly and sustainable use and development of air, land and water;  
- to encourage public involvement in resource management and planning;  
- to facilitate economic development in accordance with the objectives set out in the above paragraphs; and  
- to promote the sharing of responsibility for resource management and planning between the different spheres of government, the community and industry in the State. |
<p>| Spatial information                       | Any information that refers to a location on, above or beneath the earth’s surface. We depend on this information to know where things are and to understand how they relate to each other. |
| Species                                   | A level of biological classification comprising one or more populations of individuals capable of interbreeding to produce fertile offspring.                                                               |
| Species diversity                         | The variety of species on the Earth.                                                                                                                                                                         |</p>
<table>
<thead>
<tr>
<th><strong>Sustainable</strong></th>
<th>See ecological sustainability.</th>
</tr>
</thead>
</table>
| **Sustainable development** | Managing the use, development and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic and cultural well-being and for their health and safety while:  
1. sustaining the potential of natural and physical resources to meet the reasonably foreseeable needs of future generations; and  
2. safeguarding the life-supporting capacity of air, water, soil and ecosystems; and  
3. avoiding, remedying or mitigating any adverse effects on the environment. |
| **Sustainable use** | See ecologically sustainable use. |
| **Terrestrial** | In this strategy terrestrial refers to environments other than aquatic environments. It includes subterranean environments. |
| **Threatened (in reference to species or ecological communities)** | Those threatened with extinction or destruction. Threatened species are listed under the Threatened Species Protection Act 1995 under three categories: rare, vulnerable and endangered. |
| **UTas** | University of Tasmania |
Ocellate seastar (*Nectria ocellata*). Photo by Neville Barrett.
Tasmania has over 6,000 km of coastline and they support a wide variety of ecological, cultural, social and economic values.

Photo by Mike Comfort.
APPENDIX 2: REFERENCES


On the cover
Main image: View across the landscape from Frogmore Creek Vineyard - near Richmond towards Pitt Water and surrounds. The natural values on the estate are protected under a voluntary conservation covenant registered on the property’s title. Photo by Louise Mendel

Front cover small images
Tasmanian Devil (Sarcophilus harrisii). Photo by Darran Leal
Sponge gardens in the Governor Island Marine Reserve. Photo by John Smith
Fungi. Photo by Louise Gilfedder

Back cover small images
Southern sea anemone (Phlyctenanthus australis). Photo by Cath Samson
Shy albatross (Thalassarche cauta) on Albatross Island. Photo by Rachael Alderman
Deciduous Beech (Nothofagus gunnii). Photo by Alice Morris

Inside cover image: Survey work on Macquarie Island. Photo by Micah Visoiu

Disclaimer:
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NATURAL HERITAGE STRATEGY for TASMANIA

Securing Our Natural Advantage

September 2013

2013–2030

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