



Australia's Strategy for Nature 2019–2030

Australia's national biodiversity strategy and action plan

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This publication was prepared by the interjurisdictional Biodiversity Working Group convened under the Meeting of Environment Ministers. The Biodiversity Working Group consists of representatives of the Australian, state and territory governments and the Australian Local Government Association. This publication was endorsed at the November 2019 Meeting of Environment Ministers.

We acknowledge the traditional owners of country throughout Australia and their continuing connection to land, sea and community. We pay our respects to them and their cultures and to their elders both past and present. We are committed to working respectfully with Aboriginal and Torres Strait Islander peoples and give particular acknowledgement to their use, knowledge and custodianship of Australia's native plants and animals over countless generations. We support Aboriginal and Torres Strait Islander peoples and their aspirations to maintain, protect and manage their culture, language, land and sea country and heritage.

Prepared by the interjurisdictional Biodiversity Working Group for the Meeting of Environment Ministers

Front cover

©2017 John Crux via Getty Images
The Bald Head Walking trail in Albany,
Western Australia

Back cover

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Devils Marbles Conservation Reserve, Northern
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Right

Coorong Dunes, SA © Brayden Mann

OUR Vision

Australia's nature, now and into the future, is healthy and resilient to threats, understood, and valued both in its own right and for its essential contribution to our health, wellbeing, prosperity and quality of life.



Australia's Strategy for Nature

Nature in Australia encompasses ancient landscapes millions of years old, lands managed under fire regimes for thousands of years, agricultural lands hundreds of years old, and more recent urban and suburban development.

It underpins our country's economy, climate, and the health and wellbeing of all Australians. Nature includes all the variety of life (biodiversity) that makes up the non-human, non-built world.

This strategy describes our vision, shared goals and objectives for managing nature in all landscapes, from our cities to rural and natural environments on land and at sea. It recognises that we all have a role in securing nature as the foundation for our existence.

The strategy sets a national framework for government, non-government and community action to strengthen Australia's response to biodiversity decline and care for nature in our many environments. It accommodates the different priorities and practices across the country and the diversity in our landscapes. It draws on current evidence and local, national and international approaches.

This strategy

All governments across Australia — federal, state, territory and local — regulate, fund and manage nature conservation.

Australia's Strategy for Nature brings together existing work across the country and will guide the development of new and innovative approaches. It focuses on overarching goals that support healthy and functioning biological systems by promoting a stronger connection between people and nature, improving the way we care for nature, and building and sharing knowledge. It is a shared roadmap to better understand, care for and sustainably manage nature to 2030.

Biodiversity is the variety of all life forms on earth — the different plants, animals and micro-organisms and the ecosystems of which they are a part.



Biodiversity under threat

Changes to the aquatic environment and water flows: Waterways and wetlands are a critical part of our natural environment. They provide habitat for many species, reduce the impacts of floods, absorb pollutants and improve water quality. Biodiversity in aquatic ecosystems within Australia and in its surrounding marine areas is threatened by climate change, including the impacts of changed frequency, magnitude and intensity of floods and droughts, water quality and the condition of habitats fringing rivers and streams.

Protecting Biodiversity: Ecological systems are complex and dynamic. Our most effective means of protecting biodiversity is by maintaining functioning ecosystems and the biodiversity they contain in a healthy state.

This is the aim of sustainable and effective management of Australia's diverse ecosystems, using a combination of the precautionary approach with adaptive management that uses science and practical experience. The precautionary approach requires that, where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing a measure to prevent degradation of the environment.

To protect biodiversity and mitigate threatening processes, we must use science to inform management. Management should involve collaboration and engagement from all sectors, public and private, in partnership. We must manage threats at the landscape and seascape level in an adaptive management approach.

Adaptive management includes assessing risk, measuring outcomes, reviewing and using approaches that maintain and restore the resilience of our terrestrial, aquatic and marine ecosystems.

Why is nature important?

Nature is important to every Australian no matter where we live. It is everywhere throughout our rural, urban and even industrial landscapes, not just in national parks or the bush.

How we feel about nature is often anchored in childhood experiences of being outdoors and enjoying the beauty of the environment. Connection to and caring for nature and country are fundamental to Aboriginal and Torres Strait Islander culture and existence. Many of us identify the smell of eucalyptus, the laugh of a kookaburra, picnics in the park, glorious white beaches and blue oceans or expansive outback landscapes as uniquely Australian and a symbol of home.

There are many reasons why Australians care for nature, from the intrinsic belief that nature is beautiful and has a right to exist, through to a recognition of the services nature provides. Known as ecosystem services, these include food, drinking water, fibre, building and manufacturing materials, and other less direct services like carbon storage, air and water filtration, pollination, protection from storms and floods, and places for rest and recreation.

Nature is essential to our health, wellbeing and quality of life

Whether you live in the city or rural Australia, nature provides the building blocks for our very survival, such as clean air, water and shelter. Beyond providing for our fundamental needs, nature also provides more subtle benefits to people and communities. Both traditional knowledge accumulated over thousands of years and contemporary research show that spending time in nature is good for our mind and body. Contact with nature has positive effects on our ability to concentrate¹, learn², solve problems and be creative³. It boosts immune systems⁴ and helps us relax⁵. Our health is improved by traditional and modern medicines that originate from nature. Nature also provides opportunities for social interaction, important for connection with other people and healthy communities.

Nature has an iconic status in Australian life that is celebrated in many ways, in literature and paintings, popular music, films, foods and our favourite sports and pastimes. Our epic natural and cultural landscapes, unique wildlife and way of life feature strongly in our sense of identity and underpin our sense of place. Aboriginal and Torres Strait Islander people, in particular, have a special relationship with nature, based on a profound spiritual connection that guides cultural practices.



Our economy depends on nature

Nature provides the foundation for thriving societies and prosperous economies. Economic activity is dependent on the services and benefits provided by nature.

Industries like agriculture, fisheries, forestry, tourism and manufacturing all depend on healthy nature and natural landscapes, and have benefited from Australia's international reputation for clean and green products. These industries are relatively simple to value; for example, in 2017–18, agriculture contributed \$59 billion⁶ to the national economy and tourism contributed \$57.3 billion⁷.

The grandeur of Australia's land and sea, our wildlife and clean, green cities attract visitors from around the world and are a major contributor to the economy.

The benefits of conserving biodiversity and the cumulative effect of ecosystem services outweighs the costs to repair or replace those services; conservation is less expensive than restoration.

Work is continuing to better quantify the value of all services provided by nature in economic terms, including through governments' work on environmental-economic accounting, which is a method for organising information to better understand how the environment and the economy interact.

Australia's nature is unique and diverse

Australia has an enormous variety of landscapes and ecosystems. We are one of 17 countries in the world described as 'mega diverse'. This group of countries cover less than 10 per cent of the world's area but support more than 70 per cent of biodiversity, including many species unique to individual countries. Our continent supports between 600,000 and 700,000 native species, and a very high proportion of these are found nowhere else in the world. However, in July 2019, more than 1900 species and ecological communities were known to be threatened and at risk of extinction⁸.

Australian biodiversity has been influenced by our range and diversity of environmental conditions, which differ from most other countries due to characteristics such as nutrient-poor soils, natural climatic variability, high fire frequencies and a generally flat topography. Australia's terrestrial and marine biodiversity is important both nationally and globally, establishing an obligation for its conservation and sustainable use⁹.

Apart from the intrinsic value nature offers in its own right, it plays a critical role in maintaining the natural function of ecological systems. Losing biodiversity can change the way the natural world functions, and can have severe, unpredictable impacts that are sometimes irreversible. High biodiversity can act as insurance against change; the more variety we maintain in nature, the greater the chance that some species will survive and adapt in the future. Maintaining high biodiversity and healthy ecosystems is the best way to build resilience, the ability to recover from the impacts of threats, pressures and disasters.



Australia's nature needs *our help*

Globally, pressures on biodiversity have been increasing and there is recognition of the need to address biodiversity loss¹⁰. Much of Australia's unique nature is under threat, and the health of many of our ecosystems is declining. If we are to protect our unique places and species, maintain our quality of life and support our economy over the long term, we must balance sustainable use and development with conservation of biodiversity for current and future generations.

The main drivers of environmental change in Australia are population growth, changes in where and how we live, and economic activity¹¹. These drivers, as well as changes in how we use our natural resources, have direct and indirect effects on the condition of our natural environment.

Many of Australia's native plants, animals and distinctive ecological communities are listed nationally as threatened. The cumulative effects of habitat loss, changes in fire regimes and water flows, introduction of damaging weeds and feral animals, pollution of air and water, marine debris and overexploitation of some natural resources have left a lasting impact on many of our natural systems. More recently, climate change has emerged as a global challenge impacting many native ecosystems and species.

There are physical limits to the capacity of nature to adapt to the impacts of climate change without help. Climate change, particularly rising temperatures, will significantly affect biodiversity and ecosystems. Scientists expect climate change to cause changes to the abundance and geographic range of many species, restrict or alter species movement, and interfere with their life cycles and interactions with other species. Climate change also presents a biosecurity risk for Australia's ecosystems by altering the distribution of pest and weed species.

Working together in a coordinated way to build connectivity of fragmented ecosystems, increase the use of nature-based solutions, protect important refugia and reduce invasive species and other pressures are critical to build the resilience of our unique nature. Building and applying our knowledge about how nature responds to climate change will ensure our interventions are more effective.



We must work together

Caring for nature is essential if it is to continue to provide essential services for present and future generations and to remain integral to our national identity. All Australians must recognise that our natural world is continually changing and there are many ways we can work together to care for it, now and into the future.

Overcoming the challenges and threats to Australia's nature is not achievable by one sector or organisation alone. From governments to land owners and consumers, we all have a role to play. In some cases, it may be appropriate for governments to lead, but in other cases, leadership by other groups may make the most sense.

A national approach to conserving nature is required to recognise that ecosystems exist and function beyond state and territory boundaries, to agree on coordinated national priorities for action, to emphasise the importance and urgency of taking action, and to demonstrate all Australians' contributions to achieve a global approach.

Caring for nature is the shared responsibility of all Australians. The goals and objectives in this strategy establish clear priorities for the coming years to 2030. All Australians are invited to commit to do their part to achieve these goals and to share in the success of their efforts.

Red Kangaroo Paw, Kings Park and Botanic Garden © Department of the Environment and Energy



Farm near Murrumbateman. Fencing along Murrumbidgee River to restrict stock damage and protect native vegetation. Biodiversity fund project with Greening Australia and the Australian River Restoration Centre, © Department of the Environment and Energy

History

In 1992 the United Nations Conference on Environment and Development (commonly known as 'the Earth Summit') was held in Rio de Janeiro.

It was an important milestone in the global environmental movement and established three key overarching environmental instruments:

- the United Nations Framework Convention on Climate Change
- the United Nations Convention to Combat Desertification
- the United Nations Convention on Biological Diversity.

The Convention on Biological Diversity was established in recognition that biodiversity is globally important with immense intrinsic, social and economic value, and is of vital importance to the survival and wellbeing of present and future generations.

As a signatory to the convention, Australia developed *The National Strategy for the Conservation of Australia's Biological Diversity* in 1996, including input from all levels of government. It was Australia's first strategy providing a national approach to biodiversity conservation.

Since then, Australia's governments have updated the strategy and made commitments to work together to manage our shared nature. Over time, priorities have changed to meet new challenges and efforts to address ongoing pressures have evolved.



Our international commitments

Our national efforts contribute to global work to conserve and protect our living planet. By signing and becoming a party to international agreements focused on combating key global biodiversity challenges (see Figure 1), Australia has recognised the necessity of working alongside the international community.

As a party to the Convention on Biological Diversity, Australia contributes to the global biodiversity framework, and it's targets, to conserve and use biodiversity in a sustainable manner and share benefits arising from genetic resources in a fair and equitable way. *Australia's Strategy for Nature* coordinates national delivery of Australia's commitments to the Convention on Biological Diversity, it's Aichi Targets, and other international agreements including the Sustainable Development Goals, Ramsar Convention on Wetlands and the Convention on Migratory Species (Figure 1). To see how Australia's Strategy for Nature aligns with the Aichi Targets and the Sustainable Development Goals, please refer to Appendix A.



Figure 1: How the strategy contains and coordinates our national and international actions to manage and care for nature

International commitments



Australia's Strategy for Nature 2019–2030: Australia's National Biodiversity Strategy and Action Plan

Umbrella policy for all Commonwealth, state and territory government biodiversity-related efforts.

Other national strategies

- The Australian Pest Animal Strategy
- Australian Weeds Strategy
- Australia's Strategy for the National Reserve System

Commonwealth, state, territory and local governments policies, programs and regulation

- Threatened Species Strategy
- National Landcare Program
- Reef 2050 Plan
- Indigenous Protected Areas
- Protecting Victoria's Environment – Biodiversity 2037
- Environment Protection and Biodiversity Conservation Act 1999*
- WA Biodiversity Conservation Act 2016*
- NSW Biodiversity Conservation Act 2016*

International / domestic action and investment by:

- Community and non-government organisations
- Business sector
- Research/academia
- Individuals

A new approach

Australia's Strategy for Nature is the result of extensive collaboration between the Australian Government, all state and territory governments, and the Australian Local Government Association. It draws on the findings of the 2016 review of *Australia's Biodiversity Conservation Strategy 2010–2030* and represents continued commitment of governments to work better together.

This strategy is the overarching framework for all national, state and territory and local strategies, legislation, policies and actions that target nature. The strategy builds on previous and existing work, and is underpinned by science. However, it also takes an approach that is new and very different from that taken previously. It moves away from a purely protection-based approach and strives to incorporate adaptation, resilience and natural resource management in our cities, rural and natural environments, on land and at sea.

The strategy sets the framework for local, state/territory and federal government actions. It also helps those outside government identify where they can contribute to support national areas of focus.

The strategy has three priority focus areas, or **goals**, underpinned by twelve **objectives**. The goals work together in continuous loops designed to reinforce each other (Figure 2). By connecting people with nature, we enhance their desire to care for nature, which in turn builds knowledge that can be shared to improve our care for nature and the benefits we receive from connecting with nature. Each objective has a number of **progress measures**, which will be used to track and report on the success of the strategy.

Figure 2: How the strategy's goals link together



Science in the strategy

Governments have drawn on extensive practical, on-ground management, science, research and monitoring to inform the goals and objectives in *Australia's Strategy for Nature*. This wealth of knowledge from domestic and international scientific communities, field practitioners and citizen science are vital to ensure Australia's interventions and policies are robust.

However, there is still plenty to learn to better understand Australia's nature and our vast land and seascapes. Scientific thinking and research approaches will likely change, and an adaptive management approach must be used to adjust priorities as required.

Goal 3 focuses on working to fill knowledge gaps about Australia's nature. The underpinning objectives, progress measures and information in the action inventory can inform effort in areas where new attention is needed. This will assist decision makers in choices across policy and project development and funding distribution.

Guiding framework

This framework is comprised of three goals and twelve objectives to guide Australia's efforts. The goals and objectives are underpinned by ten supporting principles:

- Individual actions, both big and small, can make a difference.
- Collaborative decision-making, alignment of effort and partnerships contribute to effective policy-making.
- Effective nature planning and management relies on continuous research, innovation, and monitoring and evaluation.
- Sharing data and information contributes to evidence-based and cost-effective actions.
- The culture, values, knowledge, innovations and practices of Aboriginal and Torres Strait Islander people are valued and respected, and should inform, where appropriate, planning, management and conservation of nature.
- Sustainable use of nature must meet the needs of today without compromising the needs of future generations.
- Lack of full scientific certainty should not be used as a reason for postponing a measure to prevent degradation of the environment where there are threats of serious or irreversible environmental damage.
- Integrated management of land, water and living resources can be achieved using an ecosystems-based approach.
- Accounting for nature in all decision-making significantly enhances biodiversity conservation.
- Nature does not abide by legal tenure boundaries and therefore management responses must also transcend ownership.

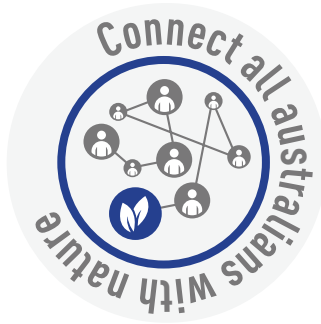


Integrating nature into cities provides many benefits.

In Sydney, One Central Park's two towers are covered with over 1,120m² of vertical garden, **including 38,000 indigenous and exotic plants**. The plants help to protect residents from noise, wind and act as a natural sun control.







Goal 1: Connect all Australians with nature

Most Australians care about nature. However, modern life means many of us have become disconnected from nature in our daily lives and sometimes we forget its importance. Connecting Australians with nature is essential to our long-term mental and physical health, economic prosperity and national identity. Indeed, maintaining the connection with nature is central to Aboriginal and Torres Strait Islander culture and identity.

We can all connect to nature in different ways and settings. Visiting a national park, picnicking outdoors, walking on the beach or down a tree-lined road, going camping or enjoying our gardens are all experiences of nature that can build human wellbeing. Interacting with nature does not have to be a planned experience — it can happen where we live, where we work, where we volunteer and where we learn. This strategy encourages all Australians to get out into nature, whether we live in a city, the bush or by the coast, to enjoy nature and enrich our health and wellbeing.

Increasing awareness and understanding of nature's role can lead to a deeper appreciation of its value and contribution to our livelihoods. This can deepen the feeling of connection to nature for those who, through history or lifestyle, feel divorced from nature. It can also change our behaviour to become more mindful of the impacts of our broader actions and decisions that affect nature, directly and indirectly.

This strategy seeks to increase Australians' understanding and awareness of the value of nature for keeping our communities safe and healthy, for clothing and food, helping to sustain jobs and cultural practices and creating opportunities for the future.

Being empowered to care for nature benefits Australia and Australians. Given the opportunity, all Australians can take actions to care for nature, whether in cities, on farms, in the outback or at sea. Individuals, communities, industries, businesses and all levels of government can be active stewards for nature, empowering others to contribute, and building partnerships for effective action. Community stewardship of nature can contribute to Australia's nature conservation objectives and also build the health and resilience of our society, businesses and economy.

Aboriginal and Torres Strait Islander people play a key role in protecting and managing Australia's environment and heritage. Indigenous land and sea managers are critical for conservation and sustainable use of Australia's natural environments, often in some of the most remote parts of the country. Strengthening relationships among Aboriginal, Torres Strait Islander and non-Aboriginal people and drawing on traditional ecological knowledge can lead to improved outcomes for the natural environment.



Objective 1: Encourage Australians to get out into nature

Australians can be encouraged to get out into nature by diversifying nature experiences, appropriately increasing access and growing nature-based tourism, or increasing promotion of human health benefits from nature-based activities. Access to nature should be undertaken with consideration to the fragile nature of some of our ecosystems.

Progress measures:

- 1A** Promotion of human health benefits from nature-based activities
- 1B** Visitation rates to public nature conservation areas (land and sea)
- 1C** Value and diversity of nature-based tourism



Objective 2: Empower Australians to be active stewards of nature

All Australians, including Aboriginal and Torres Strait Islander people, women, individuals, youth, communities and organisations, have an important role in caring for nature. Individuals may volunteer for nature-based activities, contribute to citizen science programs or enter land covenant or stewardship agreements. The capacity of community groups to participate in stewardship programs can be increased. Looking after nature through Indigenous ranger programs, public-private partnerships and cross-sector collaborations are also avenues that can be pursued.

Progress measures:

- 2A** Number and diversity of volunteers for nature-based activities
- 2B** Number of people contributing information through citizen science programs
- 2C** Number and extent of lands managed for conservation under other effective conservation measures (privately managed protected areas, covenants or stewardship agreements)
- 2D** Number and scope of public-private partnerships and cross-sector collaborations to look after nature



Did you notice?
Aichi Target tiles and Sustainable Development Goal tiles are displayed above each objective. This shows the international targets that each goal is contributing to.





Objective 3: Increase Australians' understanding of the value of nature

Australians' understanding of the value of nature, and its role in health and wellbeing can be improved through increasing adults' and children's learning about nature, encouraging organisations and businesses to report their performance against environmental measures, or using environmental-economic accounts to more clearly demonstrate the value of nature.

Progress measures:

- 3A** Activities to increase awareness of the importance of nature, including to human health and wellbeing
- 3B** Quantification of natural capital and its benefits, such as through environmental-economic accounts



Objective 4: Respect and maintain traditional ecological knowledge and stewardship of nature

Traditional ecological knowledge can be a valuable tool for assessing changes to the environment and identifying appropriate management strategies. Traditional stewardship of land and sea country can be supported and promoted through programs and initiatives to increase participation and engagement under the guidance of Aboriginal and Torres Strait Islander people.

Progress measures:

- 4A** Work with Indigenous communities to support the protection, documentation and retention of Indigenous ecological knowledge
- 4B** Recognition and use of Indigenous ecological knowledge in interpretation, practices and decisions relating to environmental management
- 4C** Indigenous rangers and Indigenous ranger programs managing land and seascapes
- 4D** Number and extent of terrestrial and marine areas managed by Indigenous Protected Areas (IPAs) or other co-management arrangements





Biodiversity under threat

Invasive species: Invasive species are those now occurring beyond their natural range and which threaten valued environmental, agricultural, marine or social resources by the damage they cause. Invasive species include weeds, pest animals, insects and other invertebrates, marine pests and disease-causing organisms. Some problematic species in Australia include feral cats, European red foxes, cane toads, rabbits and European carp. Invasive species reduce biodiversity by predation, competition with native species for food and habitat, disease impacts and alteration of the physical environment in ways that exclude native species.

Interactions across threatening processes: Each of these issues is serious in its own right. But their effects also interact to magnify impacts on Australia's biodiversity. Of particular concern is that to survive accelerating climate change, species will need to maintain large, genetically diverse populations to adapt in place or move to more suitable habitats. This fundamental requirement is challenged by other pressures reducing population size (e.g. invasive species, habitat loss) or connectivity of suitable habitat (habitat fragmentation). Sustainable development requires understanding and addressing the interactions among threatening processes.



Biodiversity

under threat

Unsustainable use and management of natural

resources: Australia's economy and future growth potential are inextricably linked to its natural resources (including plants, animals and even microbes), many of which are finite or may be irreparable if managed unsustainably. The sustainable management of these resources, particularly on agricultural land that makes up 51% of the Australian landscape, makes an important contribution to biodiversity conservation.

Habitat loss, degradation and fragmentation:

Plant and animal species are less resilient to external pressures when their habitats shrink or when populations become isolated from each other. Direct causes include clearing of native vegetation and pollution of waterways and marine areas. These activities are regulated by laws in all Australian jurisdictions. However, ecosystem-scale planning and incentives to actively manage and maintain habitat values are also needed.



Douglas Gimsey via Getty Images
Rooftop car park community vegetable garden made up of over 140 plots housed in individual recycled apple crates.



Goal 2: Care for nature in all its diversity

Nature is an asset from which all Australians benefit. While building the resilience of our native species and the health of our landscapes, seascapes and aquatic environments is challenging, the benefits of success greatly outweigh the costs.

Maximising a diverse mix of species and ecosystems benefits all Australians by conserving and improving a valuable asset. There are opportunities for us to lead the world in practical approaches to environmental management and to export our natural resource management expertise and experience.

The objectives under this goal work together to enhance resilience, an important quality of nature. Resilience refers to the ability of nature to recover from disturbance and resist ongoing threats. Resilience can be improved by protecting a wide variety of land and seascapes in an ecologically viable habitat network, increasing biodiversity, reducing threats, managing trade-offs in the use of natural resources and actively encouraging and connecting nature in urban environments. The combination of objectives under this goal ensures a multi-pronged approach to caring for nature that incorporates engagement by people from all walks of life.

Australia's landscapes and species have developed a range of strategies to cope with the naturally high variability of the Australian environment. Protecting a wide variety of land and seascapes through both government and private mechanisms provides insurance against future change, protects nature from some threats and provides dispersal opportunities and refuges for species to survive and adapt to potential threats. There is evidence that encouraging high biodiversity improves the ability of the environment to recover from disturbances as well as protecting ecosystem function and stability.

We need to continually improve our management of nature to ensure that resource use is sustainable, while maintaining the diversity of life and ecosystem functions that people depend on. Continuous improvement in nature management capitalises on innovation to ensure that natural resource use is ecologically sustainable and protects ecosystem function.



Mainstreaming biodiversity involves changing the way we think about and value nature. In doing so, impacts on biodiversity, whether direct or indirect, can be factored into every relevant decision. The Australian private sector and business community play a particularly important role in the conservation and sustainable use of Australia's nature to create prosperity now and for future generations.

Land managed for agriculture makes up a significant component of Australia's natural infrastructure. Australian farmers and pastoralists manage just over half (51 per cent)¹² of our land and make a large contribution to conserving and enhancing nature. Improvements in natural resource management practices can result in increased productivity and improved farm sustainability as well as enhanced environmental protection.

Nearly 90 per cent of all Australians live in urban areas. The expansion of urban areas has impacted biodiversity. However, human urban settings retain substantial natural areas and native species. These areas can help maintain connectivity, provide habitat for native species and keep valuable ecosystems healthy and resilient. For example, urban wetlands provide both important habitat and critical water and nutrient management, helping maintain water quality in rivers and waterways. Connectivity in built landscapes can flow between towns, suburbs, parks and reserves, and lead to raised awareness and engagement from communities in nature conservation and management.

Urban nature also supports healthy and sustainable inner-city and suburban communities, and enhances the liveability of our built environments. Urban green spaces provide many public health benefits from contact with nature such as relaxation, stress reduction, enhanced physical activity and mitigation of exposure to air pollution, excessive heat and noise. There are benefits to both people and nature by enriching and connecting urban green spaces.



Yellow feather star in the Mermaid Reef-Rowley Shoals, © Cathy Zwick



Objective 5: Improve conservation management of Australia's landscapes, waterways, wetlands and seascapes

Conservation management of landscapes, waterways, wetlands and seascapes can be improved in a number of ways. These include through enhancing the representativeness, extent, connectivity and condition of government- and non-government-managed protected areas and conservation reserves, Indigenous protected areas and marine protected areas. Other measures include supporting landowners' protection of significant ecosystems through stewardship or other effective conservation measures, or retaining and restoring native vegetation and connecting habitats. The restoration and connection of habitats should aim to maximise the genetic diversity and complexity of restored ecosystems, requiring the maintenance of viable seed supplies.

Progress measures:

- 5A** Extent and representativeness of government-managed reserve estate and, where available, their condition
- 5B** Extent and representativeness of marine protected areas, including marine Indigenous protected areas
- 5C** Number and extent of significant ecosystems protected by private landowners through stewardship or other arrangements
- 5D** Explicit consideration of future climate scenarios in the planning and management of protected area networks
- 5E** Retention, protection and/or restoration of wetland systems to maintain or improve ecological integrity and ecosystem function



Objective 6: Maximise the number of species secured in nature

Maximising the number of species secured in nature requires action in native habitats and in off-site (ex-situ) conservation efforts such as captive breeding programs, seed banks and other managed environments. Maximising the diversity of species and ecosystems secured in nature needs action through the protection and restoration of native habitats, mitigation of threats, management of risks to environments and management of environments and their species. Conservation efforts could include improved cross-boundary and cross-border collaboration and the provision of consistent, robust and transparent approaches for assessing and listing species. Protection of species could also involve increased support for landowners and custodians who protect threatened or vulnerable species, establishment of predator- and threat-free 'safe havens' for threatened species, effective, targeted reductions in the intensity of key threats, programs for captive breeding, storage of living plants and seed, and emergency intervention for the most at-risk species.

Progress measures:

- 6A** Consistent, robust and transparent assessment and listing of threatened species applied across all jurisdictions
- 6B** Number of populations of threatened or near-threatened species protected in government-managed reserves
- 6C** Number of populations of threatened or near-threatened species protected by private landowners through stewardship or other arrangements
- 6D** Number and success of strategic ex-situ conservation programs and emergency interventions implemented for the most at-risk species
- 6E** Number and area of 'safe havens' for threatened species (eg. threat-free islands, predator-free enclosures)



Objective 7: Reduce threats and risks to nature and build resilience

Major threats to nature include habitat loss and degradation, invasive species, overharvesting, pollution, climate change and disease. Options for joint action to reduce threats and their impacts include ensuring the design and management of the protected area network considers and accommodates future threat scenarios, and establishing robust mechanisms to respond effectively to new and emerging threats. There are opportunities to improve planning, regulation, environmental impact assessment and approvals processes. In addition, threat abatement activities could include targeted pest management, ecosystem restoration (integrated fire management, revegetation), pollution control, greenhouse gas emissions management and climate change adaptation.

Progress measures:

- 7A** Explicit consideration of climate change adaptation and resilience, including in the management of species and ecosystems that are vulnerable to climate change
- 7B** Extent and success of management programs to implement appropriate fire regimes that reduce impacts of fire on species and/or ecosystems that are vulnerable to this threat
- 7C** Extent and success of management programs for established invasive species that pose a significant threat to species and/or ecosystems that are vulnerable to this threat
- 7D** Extent and success of management programs to minimise incursion and spread of new and emerging invasive species
- 7E** Retention, protection and/or restoration of landscape-scale, native vegetation corridors
- 7F** Retention, protection and/or restoration of native vegetation in urban, peri-urban and agricultural contexts



Objective 8: Use and develop natural resources in an ecologically sustainable way

All businesses and industries use and therefore have an impact on natural resources, either directly or indirectly. Ecologically sustainable use and management of natural resources can be achieved through valuing impacts and dependencies, strategic planning and, if necessary, trade-offs between use and protection. Sustainable consumption and production has the potential to generate multiple benefits to the environment, society and the economy, including enhanced predictability of raw materials and products within supply chains. Other options include encouraging innovation in agricultural practices to maintain and restore soil and water health as well as incorporating robust and accurate measures of natural capital.

Progress measures:

- 8A** Explicit consideration of environmental flow requirements in catchment-scale water management plans and decisions
- 8B** Development and implementation of agricultural practices that maintain and restore soil and water health
- 8C** Development and implementation of fisheries management practices that ensure sustainability and minimise impacts on other marine or freshwater biodiversity
- 8D** Explicit consideration of measures of natural capital in the sustainable development of Australia's natural resources



Objective 9: Enrich cities and towns with nature

Australia's cities and towns can be enriched with nature by prioritising inclusion of ecologically diverse green spaces in design and planning and encouraging their use. Some options include increasing the tree canopy in our urban areas, transforming old rail lines into greenways, and gardens on rooftops. Initiatives such as these can help reduce carbon emissions, alleviate heat stress, increase energy efficiency and leave a positive effect on residents' wellbeing. Urban ecology and biodiversity policies should be better integrated into land use planning, transport and other key urban policy and statutory planning requirements. Individuals and communities can help by encouraging residential wildlife gardening programs and sharing information on effective ways to engage residents in meaningful landscape-scale conservation.

Progress measures:

- 9A** Number and extent of urban greening initiatives
- 9B** Inclusion of ecologically diverse green spaces in the design and development of urban areas
- 9C** Promotion of urban nature-based initiatives



Biodiversity

under threat



Climate change: In Australia, climate change is already causing a rise in average and extreme (high and low) temperatures, changed patterns of precipitation, and increased frequency and intensity of extreme weather events, including droughts, high fire-danger weather and tropical cyclones¹³. Biodiversity is vulnerable to climate change, shown by events such as recent coral bleaching on the Great Barrier Reef.

The scale, rate and nature of projected climate change, and the unpredictable interactions between climate change and other factors that cause stress to ecosystems, have the potential to overwhelm the capacity of current ecosystems to adapt.

Strategies that will both minimise the impact of, and promote adaptation to, change are needed. Efforts to reduce the release of greenhouse gases into the atmosphere will need to include protection of natural ecosystems — especially primary forests, wetlands and peatlands — and recovery of carbon stores through revegetation. Building resilience will be key to helping natural systems retain their capacity to adapt to shifting climatic conditions.



Biodiversity under threat

Changing fire regimes: Fire, or its absence, has directly influenced the evolution of the Australian landscape. Many native plant species, including eucalypts and acacias, have evolved in fire-prone environments and are dependent to various degrees on fires to maintain ecological cycles. In contrast, rainforest ecosystems developed in the absence of fire and are highly vulnerable when changed conditions, such as prolonged drought, increase their susceptibility to fire.

The effect of fire on the ecology of the landscape is mostly shaped by fire regimes — the pattern of fires, including their extent, seasonality, frequency, intensity and patchiness — and, to a lesser extent, by individual fire events. Climate change is already affecting the nature of fire risk and increases the need for effective fire management to protect people and property in a way that recognises the role of fire in biodiversity management.





Goal 3: Share and build knowledge

Effective management and protection of nature in Australia is best supported by an evidence-based approach built on sound knowledge.

Decisions should draw on scientific information and data, including from biodiversity, taxonomic, ecological and sociological sciences, nature management methods and approaches, and traditional ecological values and knowledge. There is significant effort around Australia to extend this knowledge base, and to monitor, evaluate and report on actions at regional and national levels.

Much of our biodiversity remains undiscovered or poorly known. We need to better understand our biodiversity as a foundation for protecting it. Knowing more about nature helps us make better choices about its management for long-term conservation. This extends to gaps in policy, regulation, education, data collection and management strategies.

Sharing and using information can improve effectiveness of planning and management and reduce duplication of effort. Making information publicly available and developing stronger relationships among information users can lead to collaboration, coordination and a shared sense of stewardship and ultimately, better outcomes.

Partnerships among businesses, governments, academia, non-government organisations, landowners, Aboriginal and Torres Strait Islander custodians and the general community are essential to build capacity to care for and manage nature. Respect and understanding of local traditional ecological knowledge can enhance and inform conservation and management decisions.

Assessing and reporting on our successes, failures and areas for improvement in caring for nature require a broad set of meaningful measures that reflect the multiple benefits of understanding, connecting with and caring for nature, which should include public health and economic measures. More frequent and more coordinated reporting of environmental performance will contribute to understanding how actions at multiple scales contribute to national nature management. It will enhance a shared sense of stewardship for nature and identify additional actions and resources that may be needed to achieve the strategy's vision.



Objective 10: Increase knowledge about nature to make better decisions

There are opportunities to target research to reduce gaps in knowledge and improve planning and management strategies, to support development and implementation of innovative tools and techniques, and to build connections between environmental disciplines and social sciences. A sustained and strategic effort across all levels of government and within academia is required to enhance our knowledge about nature, including improved partnerships with community groups and business.

Progress measures:

- 10A** Explicit science and knowledge programs to support effective management of biodiversity
- 10B** Understanding of the likely impacts of climate change on, and effective methods to promote adaptation and resilience of, terrestrial, aquatic and marine systems and species
- 10C** Systems capturing data on the diversity of Australian nature and how ecosystems function



Objective 11: Share and use information effectively

Much information about Australia's environment and biodiversity is already publicly available. Access to this information can be enhanced by ensuring it is properly collected, maintained, supported and appropriately and effectively shared so that all Australians have confidence that decisions are made with the best available evidence. There are opportunities to enhance connections among scientists, policy developers, decision makers, and land and water managers to enable well-informed decision-making and the development of targeted management strategies.

Progress measures:

- 11A** Public accessibility to information on Australia's nature, through a variety of platforms
- 11B** Citizen science programs providing robust data on Australia's nature to public information sets
- 11C** Collaboration and coordination between jurisdictions and research agencies in the collection, collation and publication of data about Australia's nature





Objective 12: Measure collective efforts to demonstrate our progress

Robust measures of natural capital and ecosystem services that are integrated into monitoring and reporting systems can effectively demonstrate whether our efforts in managing nature are, in fact, achieving our vision of a healthy and resilient environment. There are opportunities to streamline and coordinate already existing reporting mechanisms, to design new and intuitive measures of success, and to increase participation in reporting to develop a coordinated national picture of our success.

Progress measures:

- 12A** Development of options for using measures of natural capital and ecosystem services in monitoring and reporting systems
- 12B** Number of organisations and businesses reporting their performance against environmental measures
- 12C** Document biodiversity-related intervention and investment, and measure and report on outcomes



Pila Nguru Aboriginal Corporation © the Department of Biodiversity, Conservation and Attractions, WA.





Scenery along the Grand Canyon Walking Trail near Blackheath in the Blue Mountains (World Heritage Listed site). © Department of the Environment and Energy

How will we get there?

Achieving the goals and objectives in *Australia's Strategy for Nature* will take a combined effort. The strategy provides a framework for everyone. Contributions big and small, from all sectors and walks of life, will make a difference.



Figure 3:

How leadership and direction setting contributes to reporting of actions to Australia's Strategy for Nature



Leadership and direction-setting

Governments have a pivotal role to play in delivering the strategy by providing leadership, setting direction, considering emerging information and by evaluating, reporting on and communicating biodiversity-related initiatives. The strategy provides a guide to governments for development of future policies and programs.

Australian environment ministers are committed to working together to lead national efforts for a healthy, resilient nature.

Officials from environment departments across Australia support environment ministers in their decision-making through the Biodiversity Working Group. The working group is responsible for evaluating and reporting on implementation of the strategy to environment ministers every two years. Publicly available progress reports will be published every four years, aligning with Australia's reporting to the Convention on Biological Diversity. In the past, painting a complete national picture of how Australia's biodiversity is faring across the wide range of Australia's land and seascapes has presented many challenges for Australian governments. Through this strategy, environment officials will draw on existing and new tools to build a more thorough, nation-wide set of products to bring together the full suite of biodiversity-focused initiatives.

Australia's Nature Hub

The range of biodiversity related actions across the country will be captured under "Australia's Actions for Nature" on the Nature Hub website. These will be used to report to environment ministers on the strategy's implementation, and will help to identify opportunities for targeting priorities. As a result, environment ministers will be well informed to make decisions and provide direction in the national interest.

Moving to a digital platform provides a more efficient way to showcase Australia's biodiversity initiatives at local, regional, state/territory and national scales. It demonstrates how the good work being done across Australia contributes to the strategy's goals and objectives, and more broadly to global biodiversity goals. It provides an interactive platform showcasing all of the biodiversity-related action underway by all levels of government across the country.

Australia's Nature Hub website can be found here: www.australiasnaturehub.gov.au

Evaluation and reporting

A series of progress measures form the primary mechanism for reporting on the goals and objectives in the strategy. Not all progress measures apply to each jurisdiction; jurisdictions will report on the progress measures relevant to their circumstances.

The Biodiversity Working Group will track the strategy's implementation through the progress measures outlined for each objective. Drawing on both qualitative and quantitative information, these measures are a mechanism to test each of the objectives and highlight where positive outcomes are being realised, and where more work may need to be done.

As a living document, the strategy must meet changing national and international priorities, drawing on emerging evidence and science. Public reporting on implementation by ministers provides transparency on the effectiveness of implementation.

Figure 4: Implementation and governance of Australia's Strategy for Nature



In summary

To realise the ambition of this strategy, all governments, non-government organisations, business and industry, scientists and individuals need to work to identify the areas where they can best contribute, whether through action or influence. This strategy sets priorities, goals and objectives for the Australian Government, state/territory and local governments, non-government organisations, the private sector, research institutions, natural resource management bodies and the community.

To succeed, it will be important for the goals and objectives to be embraced as an investment in Australia's future.

Although the challenges presented by the threats to Australia's nature are multiple, a shared approach to addressing these threats will help realise better outcomes for Australia's unique biodiversity.



Lyn Walkerden via Getty Images

APPENDIX A

Australia's international commitments

This table illustrates how the goals and objectives of *Australia's Strategy for Nature* align with Australia's international commitments under the Convention on Biological Diversity (Aichi biodiversity targets) and the Sustainable Development Goals.



Figure 5. Australia's Strategy for Nature goals and objectives

	Aichi biodiversity targets	Sustainable Development Goals
Goal 1: Connect all Australians with nature		
Encourage Australians to get out into nature		
Empower Australians to be active stewards of nature		
Increase Australians' understanding of the value of nature		
Respect and maintain traditional ecological knowledge and stewardship of nature		
Goal 2: Care for nature in all its diversity		
Improve conservation management of Australia's landscapes, waterways, wetlands and seascapes		
Maximise the number of species secured in nature		
Reduce threats and risks to nature and build resilience		
Use and develop natural resources in an ecologically sustainable way		
Enrich cities and towns with nature		
Goal 3: Share and build knowledge		
Increase knowledge about nature to make better decisions		
Share and use information effectively		
Measure collective efforts to demonstrate our progress		

Visit www.cbd.int/sp/targets for further information on the Aichi Targets and <https://sustainabledevelopment.un.org> for further information on the Sustainable Development Goals.

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Connect. Care. Share.

