Conserving Nature—a Biodiversity Conservation Strategy for Queensland

#31923 | 0922

Queensland Government

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Minister's Foreword

Queensland is the most biologically diverse state in Australia. Its biodiversity supports our health, wellbeing, culture, lifestyle, economy and contributes to our tourism, primary production and creative industries.

Queensland is experiencing continued loss of biodiversity consistent with the current national and worldwide declines in biodiversity and ecosystem services. The direct and indirect drivers of change to our natural systems have accelerated over the past 50 years. Many species and ecosystems in Queensland face multiple threats, such as habitat loss, impacts from invasive species and climate change that accumulate over space and time.

The Australian State of Environment Report 2021 (ASoE) presents a holistic authoritative body of evidence of the grave state of environmental decline in Australia and effects on our natural assets, human health and well-being and the economy. The ASoE demonstrates a continued decline in the environment and cultural heritage, an acceleration of species extinction and increased impacts from threats to biodiversity that requires urgent and comprehensive action, for example, impacts to biodiversity from climate change as a result of increased intensity and frequency of extreme weather events.

Transformational change is needed in how biodiversity and nature are considered and managed to meet international and national ambitions to halt and reverse biodiversity loss and to achieve sustainable use, sustainable development goals and human well-being.

Conserving Nature – A Biodiversity Strategy for Queensland highlights the Queensland Government's commitment to protecting and conserving our extraordinary biodiversity values, addressing the decline in threatened species, and connecting people and nature in economic, social and environmental contexts.

The vision, outcomes and goals in the Strategy set out the overarching framework for a coordinated approach to government strategies, programs and initiatives that contribute to positive outcomes for biodiversity and can bring about the change needed.

The Biodiversity Conservation Strategy brings together programs of work across Queensland to protect, restore and promote biodiversity through regulation, science and research programs, restoration projects, planning for and maintenance of national parks and other protected areas, and coastal management.

Over time, the Strategy will expand as new policies, initiatives and investment approaches are developed. The Strategy has been coordinating and guiding the Department of Environment and Science's conservation activities since 2019. In this way, the Strategy addresses recommendations made by the Queensland Auditor-General in 2018 for a coordinated response to the way it manages the conservation of threatened species.

The Government's commitment to address biodiversity loss and supporting the recommendations in the Queensland Auditor-General's Conserving threatened species report is demonstrated in both broad and targeted initiatives. We have already taken action to protect our biodiversity and ecosystems through the Threatened Species Program, Queensland's Protected Areas Strategy 2020–2030, South East Queensland Koala Conservation Strategy 2020-2025 and the Queensland Climate Action Plan 2030.

As part of the budget announcements for 2022–23, Queensland Government is supporting the implementation of the Biodiversity Conservation Strategy having allocated almost $40 million to help protect native animals, including koalas in South East Queensland, and $262.5 million for investment in our protected areas over the next four years.

A monitoring, evaluation, reporting and improvement framework will be established across Queensland Government departments that will allow for reporting against conservation activities and ensure evaluation of the Biodiversity Conservation Strategy's effectiveness in achieving its goals and outcomes.

My department is working to connect opportunities for funding with projects that deliver on the government's environmental priorities and commitments, though the development of an investment strategy for natural capital. This will mean that more resources will be delivered to biodiversity conservation projects, informed by this strategy, through investment opportunities with both public and private sectors.

Conserving Nature – A Biodiversity Strategy for Queensland and key supporting approaches to investment, and monitoring and evaluation will help the Queensland Government meet the challenges of biodiversity conservation and ensure we are protecting the natural values that make this state unique.

Meaghan Scanlon MP
Minister for the Environment and the Great Barrier Reef
Minister for Science and Youth Affairs

Indigenous Land and Sea Rangers
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Introduction to Conserving Nature —a Biodiversity Conservation Strategy for Queensland

Queensland's biodiversity is unique, varied and dynamic. Biodiversity is about the nature around us, and the nature we depend on as people and communities. Healthy biodiversity contributes to the quality of the water we drink, the food we eat and our wellbeing. It is also a core component of our economy and future prosperity.

This Biodiversity Conservation Strategy (the Strategy) presents the Department of Environment and Science's (the department) vision for looking after our biodiversity. This vision is that 'Nature is actively supported to thrive in Queensland'.

This vision is supported by a series of goals and objectives, which set a clear direction for what we need to do. A set of principles that underlie the Strategy have also been developed.

This Strategy has been informed by a wealth of knowledge and science. This has been brought forward by biodiversity experts and researchers, as well as First Nations peoples, conservation sector representatives, and others from the community, industry and land management sectors.[1]

The Strategy outlines the value of biodiversity in Queensland, and the current challenges of protecting and conserving it, including the effects of climate change.

The Strategy is a response to the biodiversity conservation challenge. It provides strategic high level direction for a range of other key environmental strategies and programs under development by the department.

A key initiative for the implementation of the Strategy is the Threatened Species Program to coordinate efforts in conserving species.

Other strategies include the South East Queensland Koala Conservation Strategy 2020–2025, and Queensland's Protected Area Strategy 2020–2030.

Every government agency will have a role to play in addressing threats to biodiversity in Queensland. Delivering a number of conservation strategies will ensure that we deliver a coherent and coordinated set of effective actions to manage biodiversity in Queensland across portfolios, local jurisdictions, landscapes, habitats and ecosystems (Figure 2).

As biodiversity exists on both private and public land, a coordinated and holistic effort across the whole of the Queensland Government, is most likely to achieve positive outcomes for our flora and fauna across Queensland's land, water, and seascapes. This effort will address all dimensions of biodiversity and will take account of the fact that the many drivers of biodiversity loss can affect different dimensions in different ways.

For example, the efforts government makes to protect our threatened species may struggle to succeed if they are not complemented by whole-of-landscape actions to protect the habitats which support species. This needs to encompass both protected areas and partnerships with landholders.

Similarly, biodiversity spans across Australian jurisdictions, and the Strategy recognises that responsibilities and actions need to be coordinated across borders, and integrated with national and international decisions and obligations.

The Commonwealth Government invests in national-scale programs for conservation and research, and can assist in achieving outcomes through partnerships and collaboration with Queensland.

There are also opportunities to leverage partnerships in conserving the world-class biodiversity we share with our neighbouring state and territory governments to achieve biodiversity outcomes in cross-border protected and world heritage areas.

We are delivering a Strategy that is as comprehensive as possible to effectively conserve biodiversity and connect people with nature.

The development and the implementation of this Strategy enables the fulfilment of the purpose of the *Nature Conservation Act 1992*, and addresses one of the recommended actions by the Queensland Auditor-General in *Conserving Threatened Species (Queensland Audit Office Report 7: 2018–19)*.

1 This work has also been informed by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), 2019 Global Assessment of Biodiversity and Ecosystem Services, and also by the Intergovernmental Panel on Climate Change (IPCC) 2019 Special Report on Climate Change and Land (SRCCL).

What is biodiversity and why is it important?

Biological diversity or 'biodiversity' is the variety of plants, animals and micro-organisms, and the habitats and ecosystems to which they are connected. This includes the flora and fauna around us, the mix of genetic variation of living things, and the changes over time to life in the natural world. It includes land, water and sea environments. We commonly refer to biodiversity as 'nature'.

Queensland is the most biologically-diverse state in Australia. Over 14,000 native plant species are found within the state, and more than a third of those are found nowhere else in the world.

Queensland is home to almost three-quarters of Australia's native bird species, more than four-fifths of its mammals, and just over half of its native reptiles and frogs.

Queensland is also home to a wide variety of landscape and aquatic ecosystems including the Great Barrier Reef, savannah woodlands, deserts and some of the most ancient tropical rain forests in the world.

Queensland is a global hotspot for biodiversity with beautiful natural environments and unique species, but it is more than just this.

Biodiversity supports our health, wellbeing, culture, lifestyle, economy, and contributes to our tourism, primary production, and creative industries.

Queensland's protected areas attract millions of visitors every year.

Caring for biodiversity values and areas that contain them, including more specifically national parks, oceans and wildlife, has been identified as one of the five issues of greatest concern to Queenslanders.

This highlights the need for a Biodiversity Conservation Strategy that aims to effectively conserve biodiversity and connect people with nature.

Biodiversity is inextricably linked to the cultural and spiritual values of First Nations peoples. Protecting and caring for nature needs to be informed by traditional knowledge and experience of sustainable use of natural and cultural resources. This can also create social and economic opportunities.

The condition of our natural assets underpins our agricultural sector, where healthy ecosystems are necessary to provide clean water and soil fertility. There is an increasing awareness of the value of this 'natural capital' and the economic risks associated with its degradation.

Fundamentally, biodiversity and the health of ecosystems can affect the quality of water we drink, the food we eat and the air we breathe, and the productivity and fertility of land, rivers and oceans. These are examples of 'ecosystem services'.

Biodiversity is therefore important to all Queenslanders. It underpins our quality of life, and ability to survive, thrive, and prosper.

> It seems to me that the natural world is the greatest source of excitement; the greatest source of visual beauty; the greatest source of intellectual interest. It is the greatest source of so much in life that makes life worth living.
>
> David Attenborough

A SNAPSHOT OF

Biodiversity in **Queensland**

(Data is current as at June 2022)

Species declines are **accelerating**

Between 2007 and 2022 the number of species listed as threatened in Queensland increased by:

97 animals **&** **244** plants

8 mammals
1 bird **&** **3** frogs
are now **extinct in the wild**

In 2022
1026
species are listed as threatened* in Queensland

(*vulnerable, endangered, critically endangered, extinct in the wild or extinct)

72% of Australia's native **birds**

14,000+ **species** of **native plants**

50+% of Australia's native **reptiles** and **frogs**

85% of Australia's native **mammals**

FIVE of Australia's 19 **World Heritage Areas are in Queensland**

7 of Australia's **24 East Asian–Australasian Flyway Network sites** used by migratory waterbirds

1000+ **protected areas** covering just over **8%** of the state

72 declared **fish habitat areas** covering approximately **12,000km²**

THREE **state marine parks cover more than** **72,000km²**

FIVE sites covering **600,000+ha** of **significant wetland** recognised under the international Ramsar convention

Queensland has:
16 broad vegetation groups
1424 regional ecosystems

BRISBANE is Australia's most biodiverse capital city

 Figure 1: Statistical snapshot of biodiversity in Queensland

Threats to Queensland's biodiversity

Research shows that biodiversity is declining in Queensland—as it is around the world, with over 1,000 species in the state being regarded as threatened, and over 10 already extinct in the wild.

A report by the Organisation for Economic Co-operation and Development (OECD) on Australia's environmental performance, concluded that, 'Australia is one of 17 megadiverse countries', however in Australia 'the overall status of biodiversity is poor and worsening.'[2]

Australia compares internationally as the second highest-ranked country for biodiversity loss, surpassed only by Indonesia. At the national level, 89 ecosystems, 533 terrestrial and aquatic animal species and 1,385 plant species are listed as threatened.[3]

The greatest threats to Queensland's biodiversity are habitat loss, invasive species, diseases, inappropriate fire regimes, illegal wildlife trade, pollution and climate change.

Land clearing alone has had a dramatic impact on biodiversity in Queensland, and has been associated with species extinction as well as being a threatening process for a number of other species.[4]

Reduction in the extent of habitat often results in declines of those species that live in or depend on the plants, water bodies and environs that make up habitats. Primary drivers for clearance to date have been agriculture and urbanisation.

Beyond reductions in habitat extent, changes to habitat health and condition can also impact on biodiversity.

Habitats in poor condition have reduced capacity to support plants, animals and micro-organisms.

Invasive species, including weeds, pests and diseases, now affect more than half of Australia's threatened plants, fish, reptiles and invertebrates. The extinction of four species of frogs endemic to Queensland and the dramatic decline of several others has been directly linked with chytrid fungal infection, for example.

Queensland State of Environment report and the Australian State of Environment Report presents information on these threats and their impacts on species and ecosystems .

Loss of biodiversity can result in a reduction of the ecosystem functionality and the services that ecosystems provide. Loss of these services can have far-reaching effects on people's quality of life, health and wellbeing. It can also impact our economy and the industries that depend on natural places and healthy environments.

While the array of species, habitats and ecosystems in Queensland has evolved through natural climatic variations over geological timescales, the current rate of climate change, in combination with large-scale modifications of the environment, is testing their ability to respond and continue thriving.

We have already witnessed repeated coral bleaching events in the Great Barrier Reef, heat-stress deaths to a third of the state's spectacled flying-fox population in 2018, and extinction of the Bramble Cay melomys in 2017. From 1950–2018 Queensland saw increased serverity in fire-weather season due to climate change. In 2019–2020 bushfires burnt approximately 97,200 hectares of the rainforests of south-east Queensand, and this included 36 per cent of the Gondwana Rainforests of Australia World Heritage Areas in this region. These impacts were all attributable to climate change.

Climate change undermines not just the intrinsic values of Queensland's biodiversity itself, but its capacity to support our health, wellbeing, culture, quality of life, and economy. Loss of our biodiversity has the potential to impact on ecosystem services that underpin key sectors of the economy, such as agriculture and tourism.

As climate change compounds the effects of other threatening processes for our wildlife and natural places, strategies to improve species resilience, and connectivity at the landscape, regional and local scales become critical.

2 OECD. Publishing. (2019). OECD Environmental Performance Reviews: Australia. Organisation for Economic Co-operation and Development.

3 Department of Agriculture, Environment, Water and Energy, 2021. Species Profile and threats Database. Electronic dataset, 5 July 2021 www.environment.gov.au/cgi-bin/sprat/public/sprat.pl

4 VJ Neldner, MJ Laidlaw, KR McDonald, MT Mathieson, RI Melzer, R Seaton, WJF McDonald, R Hobson, and CJ Limpus (2017) *Scientific review of the impacts of land clearing on threatened species in Queensland*, Queensland Species Technical Committee, Brisbane.

Why we need to act now

Research findings from the National Environmental Science Program in Australia indicate that over the next two decades, we could see the extinction of at least another dozen mammal and bird species in Queensland. Many other species will become at risk of extinction from the impacts of climate change.

Losses of habitat coupled with climate change is likely to lead to broader declines in environmental health and conditions, with flow-on effects for people, communities and the economy.

The lag between habitat loss and the impact on species—including future extinctions of species due to past clearing—means that impacts of this loss are still emerging.

The rate of woody vegetation clearing in Queensland in the three years to 2017–18 approached 400,000 hectares per year.[5]

Despite the recent reinstatement of stronger vegetation clearing regulations, the long-term and significant impacts from Queensland's past land clearing are continuing to emerge. This in turn limits our understanding of how the losses and impacts interact and accumulate, and how this affects the viability of recovery efforts. Queensland's state of the environment report presents information on trends in the extent and condition of the state's ecosystems.

On the back of recent trends, scientists are expressing concern about a major loss of biodiversity at unprecedented rates and scales, which could lead to decline in the condition of our natural capital and collapse of the ecosystem services that underpin people's health and wellbeing, and the economy.

Many species and ecosystems face multiple threats that accumulate over space and time, and that can interact to make biodiversity management increasingly complex and challenging. We need to manage legacy issues such as broad-scale land-clearing and poor water quality, as well as emerging issues of climate change. There are many unknowns about how these threats will impact ecosystems and species long term—particularly how they interact and accumulate, and how this affects the viability of recovery efforts. We need to take a precautionary approach wherever possible so that action to address these issues is effected quickly before they grow into more extensive, impactful, and expensive challenges to overcome.

Biodiversity conservation is a shared responsibility. The case for acting is compelling, and the time for acting is now.

5 Queensland Department of Environment and Science, 2018. Land cover change in Queensland 2016–17: a Statewide Landcover and Trees Study (SLATS) report DES, Brisbane.

The greater bilby (*Macrotis lagotis*) once ranged over most of Australia, but the arrival of exotic predators has eliminated them from most of their former range. It is listed as endangered in Queensland. Its closest relative, the lesser bilby, is extinct.

The Biodiversity Conservation Strategy in context

Key Queensland legislation, strategies and initiatives that complement and contribute to delivering biodiversity outcomes in Queensland.

Conserving Nature—a Biodiversity Conservation Strategy for Queensland

Key Queensland Acts and statutory instruments	Aboriginal Cultural Heritage Act Biodiscovery Act Biosecurity Act Declared Fish Habitat Area Network Environmental Protection Act Environmental Protection (Air) Policy Environmental Protection (Noise) Policy Environmental Protection (Water and Wetlands Biodiversity) Policy Fisheries Act Marine Parks Act National Parks and other Protected Areas Nature Conservation Act Planning Act	Protected Plants Framework Queensland Environmental Offsets Framework Regional Planning Interests Act Species-specific Recovery and Conservation Plans State Development and Public Works Organisation Act State Planning Policy Statutory Regional Plans Torres Strait Islander Cultural Heritage Act Vegetation Management Act Water Act
Key strategies	Coastal Management Plan DES Regulatory Strategy Engaging Queenslanders in Science Strategy Queensland Biosecurity Strategy Queensland Climate Action Plan 2020–2030 Queensland Climate Adaptation Strategy Queensland Protected Area Strategy Queensland Sustainable Fisheries Strategy Queensland Invasive Plants and Animals Strategy	Reef 2050 Long-Term Sustainability Plan (a joint program with the Australian Government) SEQ Koala Conservation Strategy Strategy for the Conservation and Management of Queensland's Wetlands Values-based Park Management Framework Waste Management and Resource Recovery Strategy Wetlands in the Great Barrier Reef Catchments Strategy
Headline initiatives	Community Sustainability Action Grants (Conservation, Threatened Species and Koala grants) Indigenous Land and Sea Ranger Program Land Restoration Fund Looking after Country Grants	GBR Joint Field Management Program Queensland Reef Water Quality Program Private Protected Area Program Threatened Species Program

Figure 2: Key Queensland legislation strategies and initiatives

The Biodiversity Conservation Strategy

The Department of Environment and Science has developed this Strategy through engagement with conservation scientists and experts, other environmental and social researchers, and representatives of the conservation sector. This Strategy is informed by a wealth of current scientific knowledge and best practice in biodiversity management. It recognises the current and emerging challenges of protecting and conserving biodiversity across a range of threats, risks, and land uses.

The department recognises the wealth of knowledge and action amongst First Nations peoples, citizen scientists, landholders, natural resource management groups and philanthropic organisations in protecting and conserving the state's biodiversity. These stakeholders are core to the success of biodiversity conservation.

Care has also been taken to ensure that the Strategy is consistent within a broader Australian context. The goals outlined in the Strategy are designed to be consistent with the goals outlined in Australia's Strategy for Nature 2019–2030. The Strategy also supports activities that contribute to achieving our targets under international programs like the Aichi targets under the United Nations Convention on Biological Diversity, the United Nations Sustainable Development Goals, as well as emerging frameworks such as the Convention on Biological Diversity post-2020 Global Biodiversity Framework.

A summary of the Strategy can be found at Figure 3, which steps out the vision and outcomes the Strategy seeks to achieve.

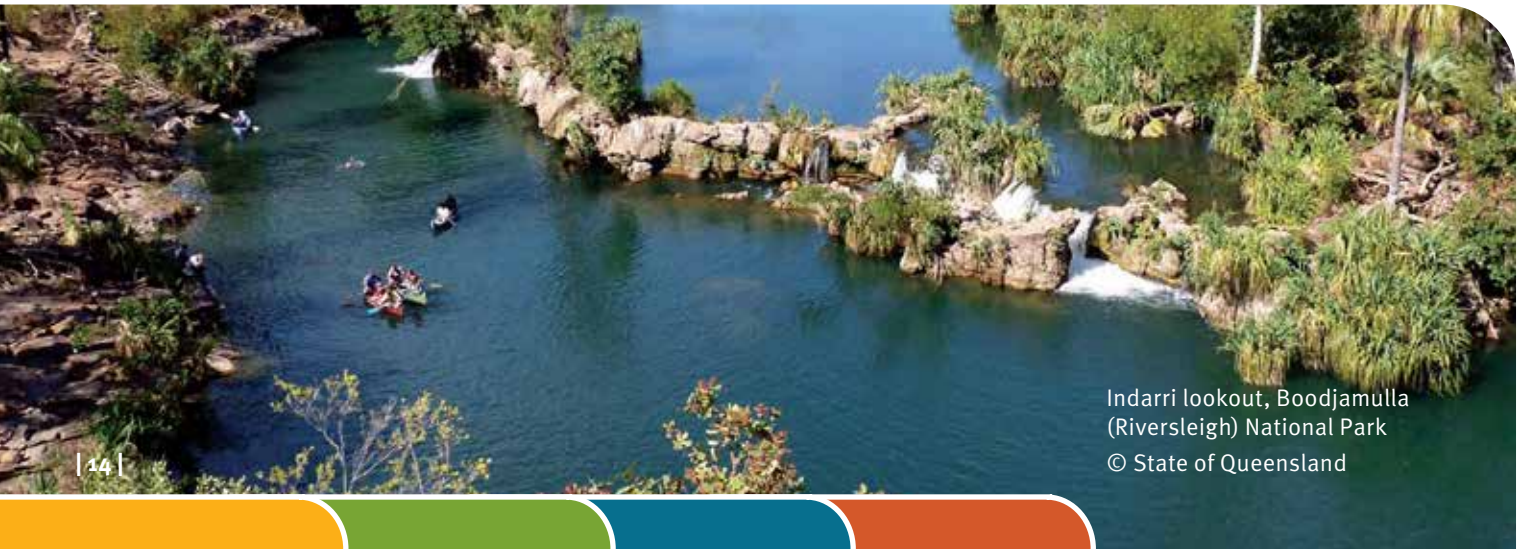
The objectives are supported by six guiding principles that will inform the design and development of actions and investment linked to the project goals. The goals will be achieved in the short, medium and long-term across species, habitats and ecosystems, and for people.

Three of the goals are framed according to the level of intactness and condition, the capacity for recovery and restoration, the degree of modification, and the response required. The fourth goal focuses on other aspects of how people relate to and are connected with nature.

The four goals of the Strategy serve as markers by which the Strategy will demonstrate it has delivered the outcomes and vision.

Objectives are broad descriptors of the desired end-states which will confirm that we have satisfied the goals.

The actions the Department of Environment and Science is already taking through key initiatives are detailed under each goal. A whole-of-government coordinated approach to current and future actions will be developed that demonstrates collective efforts towards biodiversity conservation. This will include approaches to measuring the effectiveness of actions to address and reverse the drivers of biodiversity loss within Queensland. More detail on the goals, principles and objectives of the Strategy is available on the following pages.



Indarri lookout, Boodjamulla (Riversleigh) National Park

THE STRATEGY FOR CONSERVING

Biodiversity in **Queensland**

VISION: Nature is **actively supported to thrive in Queensland**

OUTCOMES: Nature is **healthy** and **valued**

GOALS:

Protect
Queensland's biodiversity is protected and well-managed

Restore and recover
Queensland's biodiversity is restored and rehabilitated to reinstate ecosystem function and recover species populations

Adapt
Queensland's biodiversity is supported to adapt to changing environments

Connect
People value biodiversity, including its contribution to their wellbeing, and are motivated to protect it

OBJECTIVES:

1. First Nations peoples leadership and partnerships for biodiversity protection are strengthened
2. Protected areas play an important role in threatened species protection and safe-guarding Queensland's biodiversity
3. Intact habitats and connectivity across landscapes are supported
4. Species viability is maintained

5. First Nations peoples leadership and partnerships for biodiversity restoration and recovery are enhanced
6. Habitat and ecosystem responses support recovery
7. Threatened species habitats and populations are recovered
8. Biodiversity recovery is nurtured

9. Highly modified areas support biodiversity
10. Climate resilience of species and cultural landscapes is maximised
11. Adaptability to change is maximised

12. People's connection to nature is improved
13. Partnerships for nature are improved
14. Leadership and coordination are provided

PRINCIPLES:

1. First Nations peoples will continue to play a lead role in biodiversity conservation.
2. Interventions will be delivered for species, habitats and ecosystem outcomes.
3. People and partnerships will make the Strategy successful.
4. Natural processes will be recognised as operating on a local-to-landscape scale and through connectivity.
5. Biodiversity responses and improvements will be regularly monitored.
6. Science, the best available knowledge, and reliable data drives decision making.

Figure 3: Summary of the Strategy's key components and guiding principles

Principles

The Strategy is informed by the following guiding principles that will underpin all biodiversity conservation activities.

First Nations peoples continue to play a leadership role in biodiversity conservation

Australia is home to the longest continuing culture on Earth. Queenslanders are the beneficiaries of the traditional ecological knowledge of people who have provided stewardship of the landscape for thousands of generations.

As the original custodians of land and sea country, First Nations peoples will continue to play a lead role in biodiversity conservation in Queensland, and will be supported to do so.

Respect for First Nations peoples' culture will guide the conservation and management of Queensland's natural environments. Queensland's capacity to deliver positive outcomes for species, habitats, and ecosystems is enhanced when organisations and communities partner with First Nations peoples.

Protection, as well as recovery and restoration of species, habitats and ecosystems will be achieved through these partnerships. Additionally, biodiversity of cultural importance will be recognised and protected wherever possible.

Collaborating with and supporting First Nations peoples' delivery of biodiversity conservation programs on land and sea country is a priority.

Making this a priority is consistent with commitments under the National Agreement on Closing the Gap, Tracks to Treaty, Local Thriving Communities and the Department of Environment and Science Gurra Gurra Framework 2020–2026.

Interventions will be delivered for species, habitats and ecosystem outcomes

Interventions will need to be conceived holistically but might be required to operate for species, habitats and ecosystems in different ways.

For example, actions may be required to protect a specific species, and in others, a habitat-scale intervention is needed to improve the condition of habitat for multiple species, or address the challenges which are making entire ecosystems unviable.

This approach ensures that actions and interventions are designed to achieve biodiversity outcomes relevant to species, habitats and ecosystems wherever possible, and delivered with consideration to the wider landscape or habitat.

An understanding of inter-dependencies, at all scales, is crucial to an effective strategy for biodiversity conservation.

People and partnerships will make the Strategy successful

We will work collaboratively across government and communities to meet these challenges. Governments at all levels have an opportunity to demonstrate leadership and engage the community in how we achieve our goals. We will explore innovative mechanisms and partnerships to attract investment and resource biodiversity conservation initiatives.

This includes continuing to work with the agricultural sector and regional communities to maintain or improve the health of Queensland's natural capital.

Natural processes will be recognised as operating on a local-to-landscape scale and through connectivity

Many of the current threats to biodiversity do not stop at a property boundary.

This means we need to work together and integrate efforts across a range of land and water uses and enhance our ability to maintain biodiversity and continue providing the essential ecosystem services our wellbeing depends on.

The evidence suggests ecologically representative and well-connected environments can provide the best chance for natural ecosystems to build resilience and adapt to changes, including climate change.

We will take a holistic approach to management where terrestrial, freshwater, estuarine and marine systems are viewed as interdependent and linked 'landscape'. Our aquatic environments will be considered and managed in the context of the catchments, land uses and marine uses which affect them.

Biodiversity responses and improvements will be regularly monitored

Ongoing biodiversity improvements and outcomes will be achieved through regular monitoring and adjustments.

Our success will be monitored against clearly stated desired outcomes and objectives using clear targets and indicators for biodiversity conservation. We will identify what is working and what is not, and make regular adjustments where necessary to achieve our outcomes and objectives.

Using opportunities to improve what we are doing, trial new approaches and make the necessary changes, we can become more efficient and effective, and make sure our investment is focused on delivering better biodiversity conservation outcomes across all biodiversity initiatives.

We will continue to report on the state of the environment in line with state, national and international obligations to foster transparency and accountability.

Science, the best available knowledge, and reliable data drives decision making

Evidence and the best available science and knowledge will underpin effective conservation and decision making to protect, manage, restore, value and connect to biodiversity.

Better recognising and valuing First Nations peoples' knowledge, intellectual property, and leadership to make and implement biodiversity decisions at species, habitat and ecosystem scales will support delivery of biodiversity outcomes for Queensland.

We are committed to working with partners to identify, gather and share the data needed for decision making. We are committed to creating, enhancing and implementing tools to guide interpretation and enable effective and informed policy, planning and management activities.

We will look to use innovation and emerging technologies in planning and management. We will encourage and support citizen science and monitoring programs that collect the basic data and information needed in assessments, planning and management.

Boodjamulla (Lawn Hill) Riversleigh World Heritage area © State of Queensland

Vision, outcomes and goals

Vision

Nature is actively supported to thrive in Queensland

The vision for the Queensland Biodiversity Conservation Strategy reflects the aspiration that our plants, animals and ecosystems that make up the biological diversity that we experience as nature can be supported to thrive.

This vision recognises that action will be needed from Queenslanders including from state government, local government, business and industry to maintain, restore, or create the circumstances under which their biodiversity can survive and prosper.

Outcomes

Nature is healthy

Biodiversity thrives in healthy natural environments. A healthy natural environment is one where the component parts of ecosystems and their cycles, function to sustain life, are resilient to changes and where species and flora and fauna populations are not at risk of decline or extinction.

Healthy ecosystems provide a range of ecosystem services including but not limited to:

- wetlands providing habitat for threatened species and cleaner water entering our oceans
- forests and grasslands providing soil stability and productivity, food and shelter
- marine environments providing habitat for native fish, coral and other species.

The health of our ecosystems are not only reflected in the remaining extent of that ecosystem but, just as importantly in the condition and quality of that remaining ecosystem. One essential outcome from the Strategy needs to be the delivery of a healthy natural environment.

Nature is valued

Nature brings many positive benefits to our lives: to our wellbeing, social fulfilment, cultural connections, and interest. Our natural assets underpin our economy: they are critical for agriculture, tourism and many other industries.

Building appreciation and respect for our connection to and value for nature—from better understanding the significance of smaller organisms to valuing a tree, a forest or an entire landscape—is a key element of this Strategy.

By ensuring that ‘nature is valued’ we can more clearly acknowledge the benefits that functioning biodiversity brings to our lives. The more our biodiversity is valued, the greater the capacity for the community as a whole to support its protection and restoration, and understand how adaptive approaches can be applied.

Individuals, businesses, industry and state and local government value biodiversity, and we are committed to enhancing, promoting and connecting people with nature so that it continues to be valued as a significant part of Queensland.

Goals

To achieve the vision and outcomes, the Strategy identifies four goals:

Goal A: PROTECT

Queensland's biodiversity is protected and well-managed

Goal B: RESTORE AND RECOVER

Queensland's biodiversity is restored and rehabilitated to reinstate ecosystem function and recover species populations

Goal C: ADAPT

Queensland's biodiversity is supported to adapt to changing environments

Goal D: CONNECT

People value biodiversity, including its contribution to their wellbeing, and are motivated to protect it

These four goals create the 'pathways' and strategic approaches for sets of objectives, to be supported by actions.

The goals recognise that landscapes are not only diverse in ecological features, but also in condition and land use. Different landscapes hold different values and, as such, require different management approaches.

Retaining large intact areas in a relatively undisturbed condition is critical to reducing additional loss and degradation of nature, and to preventing further species declines (Goal A: Protect). It is also increasingly important to make sure these areas are connected so that species can move across the landscape, particularly in response to climate change.

Landscape rehabilitation and restoration through activities such as—but not limited to—targeted reforestation, replanting, or wetland recovery (Goal B: Restore and recover) enables natural places to become healthy again, and allows for interconnections between them to be re-established.

This can result in supporting a greater diversity of flora and fauna in disturbed and degraded areas which are capable of being restored. For example, well-managed grazing lands can provide significant support to our biodiversity by serving as habitats, wildlife corridors, and refugia for our wildlife; and locations where native flora can survive or thrive with comparatively little disturbance.

More highly modified areas, whether in urbanised areas, sites of more intense industry or human activity, can still support important habitat for species and a place to connect to nature. However, the management response may have a more species-specific or geographically limited focus (Goal C: Adapt).

Finally, the Strategy is focused on people and the benefits of healthy and valued nature for individuals and communities, as much as it is concerned with individual species, habitats or ecosystems in their own right.

Implementation

The Strategy will be a living document that can continue to be updated with new policies, actions, initiatives and investment approaches as they are developed across government.

Implementation of the Strategy within the Department of Environment and Science will be through key programs and actions structured around four themes: protect, restore and recover, adapt and connect. Implementation will also involve monitoring the contribution of activities towards the goals.

Improvements to how we monitor and detect change are underway through the development of a monitoring framework for the Strategy that will provide robust targets and indicators for biodiversity conservation across the state.

This approach is designed to support the fulfilment of biodiversity outcomes at species, habitat and ecosystem scales.

Goal A: PROTECT

Queensland's biodiversity is protected and well-managed.

Protecting what we already have and keeping it in good condition is the most efficient and cost-effective approach to conservation and remains a key focus of our efforts.

Ensuring that large, intact areas representing a range of ecosystems and habitat types continue to exist in Queensland is a priority. Effectively managing these areas so they are as free from threats as possible (such as harmful invasive species, disease and destruction) is vital to ensure species and ecosystems persist into the future and build resilience to adapt to changing environments.

A range of different types of protected areas, both public and private, remain an important tool for protecting biodiversity. In addition to land and water management, the Queensland Parks and Wildlife Service plays a key role in presenting Queensland's unique natural values to the world through world-class visitor infrastructure and engagement programs. These allow people to connect with our iconic landscapes and wildlife, while sustaining a significant tourism industry.

Queensland's legislative framework governing other land and water uses outside the protected area system plays a critical role in the effective protection and management of our biodiversity.

Our vision for the future includes maintaining a strong legislative framework that is adaptable and that strikes the best balance possible between the need for biodiversity protection and supporting a strong sustainable economy and regional industries. Queensland supports sustainable development through the state-wide legislative framework for land-use planning, which ensures that impacts from development are appropriately considered. Other important existing protections for biodiversity in Queensland include managing land clearing through the *Vegetation Management Act 1999* and regulating potentially environmentally harmful activities (such as mining and some agriculture) under the *Environmental Protection Act 1994*.

A key component of the Strategy is to build on these existing mechanisms to better integrate biodiversity considerations so that they adequately protect or mitigate the impacts of such activities on biodiversity.

A state-wide focus on adequate representation, connectivity, condition and extent across the

Mulgumpin pools

Credit: Bianca Holderness

landscape and tenures will support protection and restoration at state, regional and local scales.

Protecting our habitats, ecosystems and threatened species from weeds, pests, and diseases as well as climate change will be a focus.

This will be reinforced by building stronger relationships with First Nations peoples to enable leadership in biodiversity protection across the state. Supporting First Nations-owned/co-managed Protected Areas, and working together will broaden the suite of approaches.

Queensland's protected areas are rich in biodiversity, and contain unique natural environments. The Queensland Government is the custodian and joint manager of over 13 million hectares of protected areas and forests; and we facilitate the protection of over 4 million hectares of nature refuges and special wildlife reserves.

The Queensland Government manages 356,000 square kilometres of marine parks including three state marine parks and the Great Barrier Reef Marine Park (the latter in partnership with the Australian Government).

It also manages 12,000 square kilometres of declared fish habitat areas.

Our vision is for a protected area system that is well-connected, comprehensive, adequate, and as representative as possible of Queensland's biodiversity values. Queensland's Protected Area Strategy was released on 3 October 2020.

This work will be supported by continuing and expanding on successful community partnerships and programs, including the Queensland Indigenous Land and Sea Ranger Program.

Habitat fragmentation is a key threat to biodiversity. Highly fragmented landscapes are less resilient to the impacts of threats. Ecological connectivity and integrity across the landscape can allow threatened species and ecosystems to survive, evolutionary processes to continue and support the movement of plants and animals. As such, corridors at local, regional and state-scale are critical to functioning and resilient natural systems. The effects of climate change only serve to highlight the critical role that connectivity plays in the effective management of biodiversity.

Initiatives such as the Great Eastern Range Initiative focus on reconnecting key parts of the landscape to improve their health and resilience. The Queensland Government supports private land managers to buffer and connect public protected areas through related programs, such as the Private Protected Areas program.

We are proactively addressing key threats to biodiversity by aiming to avoid or control wildfires, and the spread of invasive species and diseases on our mainland, marine, and island protected areas.

The Queensland Government works with the Australian Government, local government, land and water managers, local communities and industry to manage a range of other biosecurity threats that may impact biodiversity, such as Myrtle Rust, which have potential to significantly impact or decimate native plant species.

We aim to ensure that our ecosystems, habitats and species are resilient to key threats now and into the future.

Key DES strategies, programs and policies that contribute to achieving this goal include:

- Coastal Management Plan
- Declared Fish Habitat Area Network
- DES Regulatory Strategy
- Engaging Queenslanders in Science Strategy
- Marine Parks
- National Park Acquisition Program
- National Parks and other Protected Areas
- Protected Plants Framework
- Queensland Environmental Offsets Framework
- Queensland's Protected Area Strategy
- Reef 2050 Long-Term Sustainability Plan
- South East Queensland Koala Conservation Strategy
- Strategy for the Conservation and Management of Queensland's Wetlands
- Values-based Park Management Framework

Goal B: RESTORE AND RECOVER

Queensland's biodiversity is restored and rehabilitated to reinstate ecosystem function and recover species populations.

The majority of our threatened species habitats occur outside of our protected areas. With 1000 species already threatened in Queensland and over 700 regional ecosystems with less than a third of their previous extent, significant recovery and restoration efforts are needed to secure Queensland's biodiversity in the long term.

The intention of restoration and recovery efforts is to prioritise and complement protection and target activities in a way that maximises viability of ecosystems and threatened species in the wild. This requires a balanced approach, acknowledging the liveability and economic needs of Queensland's growing population.

Species need a minimum extent and condition of habitat to live in reproduce and sustain populations. Ecosystems similarly will not be viable in the long term where they occur in small, fragmented patches in poor condition. The restoration of habitat, particularly where focused on landscape connectivity, will be critical in efforts to provide resilience to the effects of climate change.

On-ground works are being delivered by government and private landholders to enhance or restore the biodiversity values of our lands and waters.

Species recovery can include a suite of activities from reducing the pressure of threats, improving habitat, or managing individual populations such as occurs with the northern hairy-nosed wombat, the bridled nail-tail wallaby, and marine turtles.

The government supports land acquisitions to enhance connectivity of habitats across landscapes.

The restoration of ecosystems and habitat can also involve carbon sequestration. The government is delivering on-ground works for carbon sequestration through the Land Restoration Fund, which will rebuild habitat whilst storing carbon and improving water quality in Great Barrier Reef catchments.

Where ecosystems and habitat for species have dropped below a viable threshold of extent and condition, restoration activities such as threat removal and active planting may be necessary to support the recovery of species and ecosystems. These activities will need to consider the impacts of climate change to ensure that plantings will survive in the future and habitat will still be suitable for species under anticipated climate scenarios.

A strategic, structured, and outcomes-focused approach is required to effectively conserve and recover Queensland's threatened species. A strategic approach to recovery will increase the number of species that can persist in the wild.

The department is developing an updated threatened species prioritisation framework to coordinate its efforts in conserving threatened species. This includes working with other states, territory and federal environment agencies to improve and make more consistent the listing process for threatened species across Australia.

The Queensland Government manages site-specific populations of threatened species and their habitat. Species recovery can include a suite of activities from reducing the pressure of threats, improving habitat or closely-managing individual populations.

We will be actively seeking to increase opportunities to restore and rehabilitate ecosystems, recover populations and reinstate lost ecosystem function in the long term.

Key DES strategies, programs and policies that contribute to achieving this goal include:

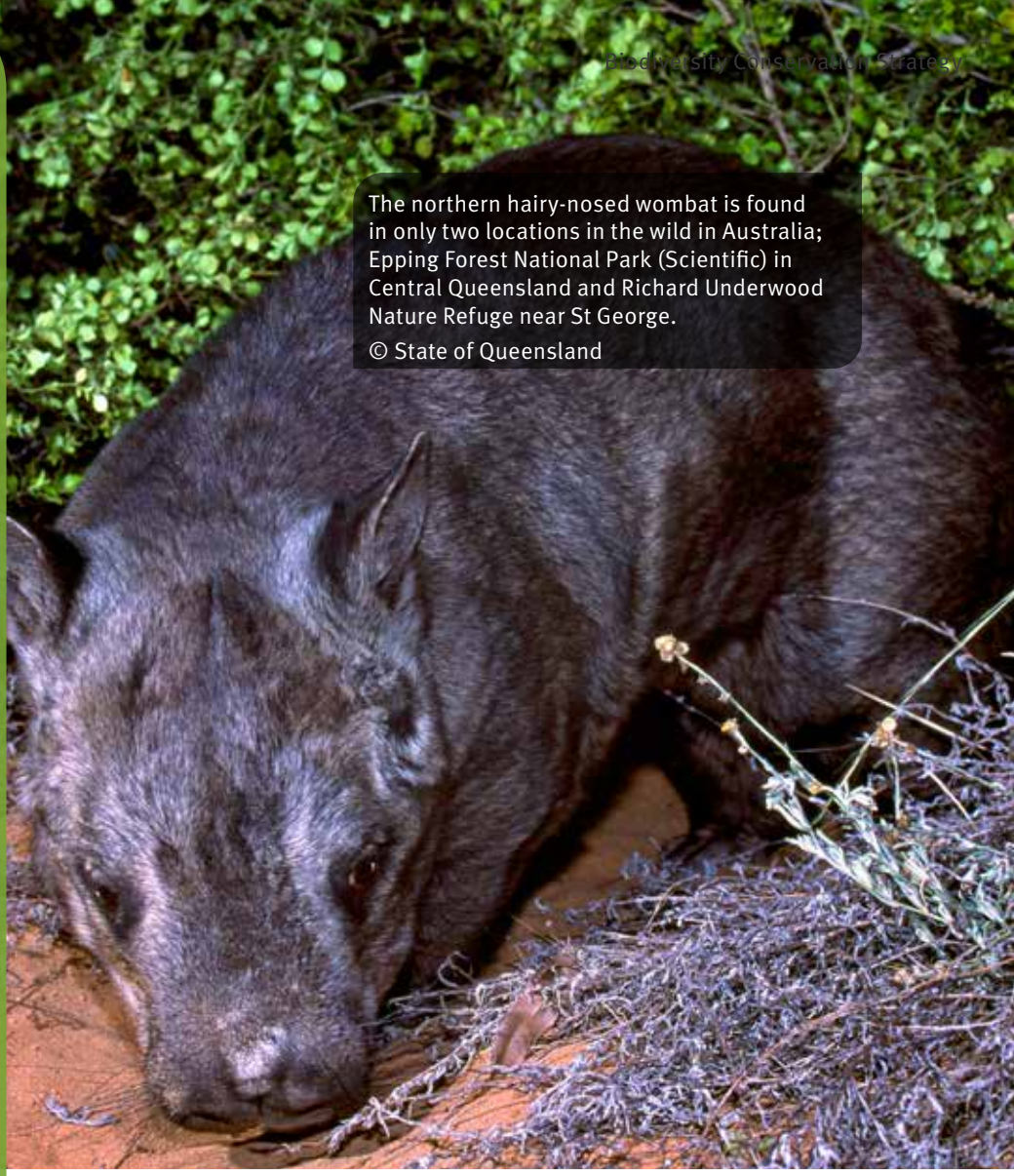
- Engaging Queenslanders in Science Strategy
- Indigenous Land and Sea Ranger Program
- Land Restoration Fund
- State of Environment Report
- Threatened Species Program
- Wetlands in the Great Barrier Reef Catchments Strategy

In 2018, the Queensland Audit Office (QAO) undertook an audit to determine if the Department of Environment and Science (the department) was effectively identifying, protecting and conserving threatened species. The department accepted all of the seven recommendations.

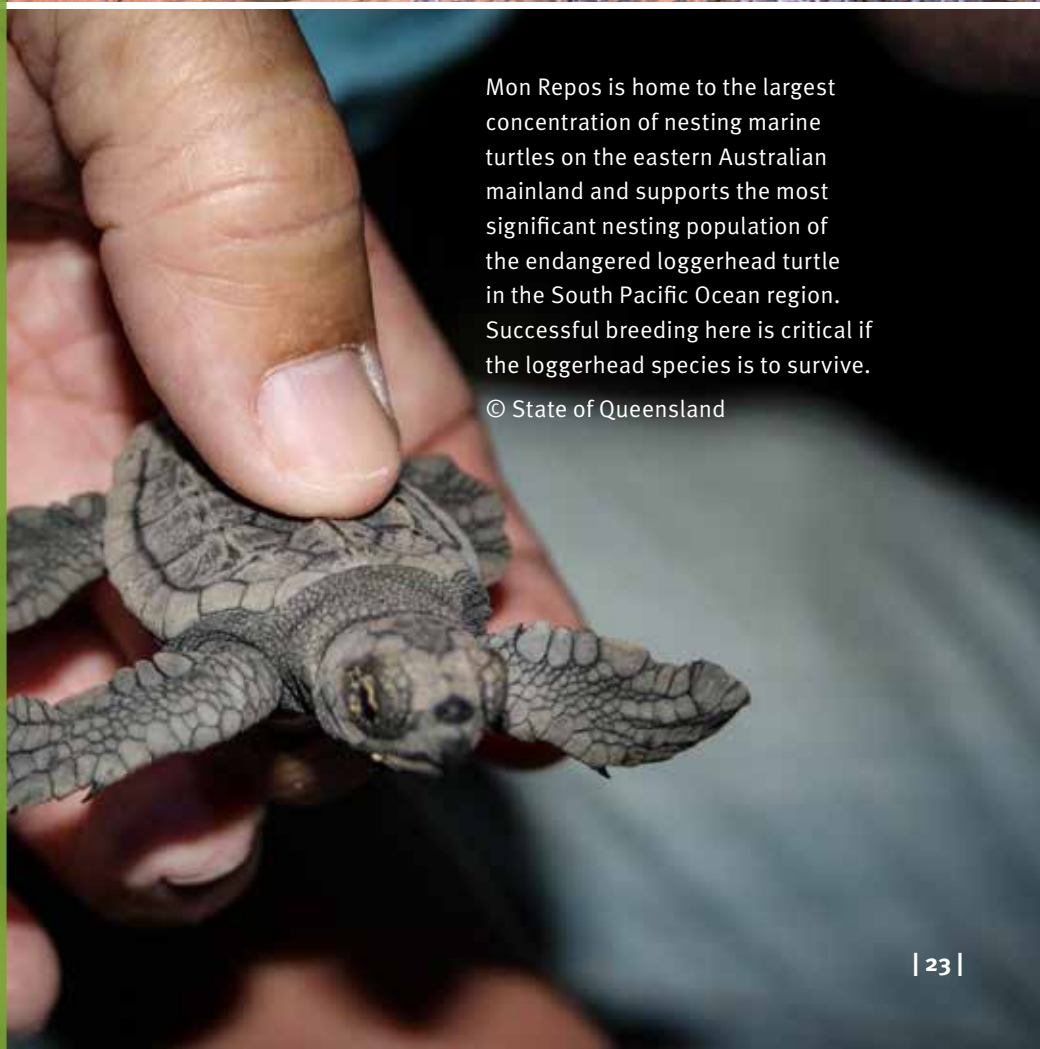
The recommendations covered two main themes: threatened species conservation status assessment and listing and the need for a renewed framework to effectively monitor and report on threatened species.

In response to these recommendations, the department is implementing a range of improvement measures to threatened species listing under the *Nature Conservation Act 1992*. This includes a procedural guideline for the Queensland species listing process which is compliant with the agreed common assessment method for the assessment and listing of threatened species. The department has reviewed the classification status of Queensland endemic species and species that are mis-aligned with other jurisdictions and will be re-assessed by the Queensland Species Technical Committee. The department also made improvements to provide more information publicly around its threatened species listing governance and processes.

The department has designed a renewed Threatened Species Program to improve threatened species conservation and recovery in line with the QAO findings. The Threatened Species Program design is supported by a program logic approach which outlines the vision for Queenslanders to support threatened species to prosper in self-sustaining populations, now and into the future. The program provides the framework for threatened species conservation planning, monitoring, and reporting and supports the Strategy's goal to Restore and Recover.



The northern hairy-nosed wombat is found in only two locations in the wild in Australia; Epping Forest National Park (Scientific) in Central Queensland and Richard Underwood Nature Refuge near St George.



Mon Repos is home to the largest concentration of nesting marine turtles on the eastern Australian mainland and supports the most significant nesting population of the endangered loggerhead turtle in the South Pacific Ocean region. Successful breeding here is critical if the loggerhead species is to survive.

Goal C: ADAPT

Queensland's biodiversity is supported to adapt to changing environments.

Biodiversity continues to persist in parts of areas that are no longer intact. In many cases, our flora and fauna, having evolved over time, are capable of adapting to changing environmental conditions, and we are committed to maintaining biodiversity in these areas.

These areas include modified agricultural landscapes, marine environments where disturbance is occurring, and urbanised areas. It also includes areas where climate change is already impacting, or the natural environment is not the same as it was ten to twenty years ago.

The current and future impacts of climate change alter the way our ecosystems look and function, and the way our species cope with other existing pressures. We are committed to reducing the impacts of climate change on biodiversity so that future generations can continue to experience these amazing natural places within our changing environment.

We aim to maximise climate resilience of Queensland's biodiversity, by working with the community to implement Queensland's Biodiversity and Ecosystems Climate Adaptation Plan.

We are also managing human impacts on biodiversity, through regulation to better manage waste and other pollutants, and are committed to facilitating improved human-wildlife interactions.

The greatest concentration of threatened species occur where most of us live because urbanisation has often occurred in highly biodiverse areas and resulted in substantial habitat modification, fragmentation and a reduction in habitat extent and population sizes.

Protecting and restoring habitat in highly urbanised and other modified environments is not always a viable option to prevent extinctions, and other targeted interventions may be required.

Targeted interventions include establishing new populations, artificial habitats and intensive management of populations needed to assist species to adapt and survive in altered environments.

Climate change presents a new series of challenges to which our flora and fauna must adapt if they are to survive. This includes the increased risk of invasive species and reduced availability of habitat.

Increased risk of mortality from vehicles, or disturbance from light, dust and noise all present challenges to biodiversity conservation. Retaining areas of habitat or refuge in the landscape, actively managing small, remnant populations, and making biodiversity-friendly decisions when managing land and water are all ways to benefit biodiversity.

However, it is possible that even with targeted interventions to prevent avoidable extinctions, the impacts of climate change may be such that species cannot adapt because their habitat is ultimately unsuitable.

Key DES strategies, programs and policies that contribute to achieving this goal include:

Biodiversity and Ecosystems Climate Adaptation Plan
Engaging Queenslanders in Science Strategy
Queensland Climate Action Plan 2020–2030
Queensland Climate Adaptation Strategy

Trekking around Boodjamulla (Riversleigh) National Park
© State of Queensland

Goal D: CONNECT

People value biodiversity, including its contribution to their wellbeing, and are motivated to protect it.

Global studies have shown that protecting nature and having a clean, safe and harmonious environment are important to what we value highly as a community and as individuals. Maintaining a biodiverse natural environment enhances our physical, social, and mental wellbeing, as it provides important cultural, spiritual and aesthetic value.

There is growing evidence that our health and wellbeing benefits from time in 'nature'—that spending time in natural environments can give a sense of peace and restoration, reduce blood pressure and ease symptoms of depression. Yet many people are either not aware of what biodiversity is or the benefits it brings to them.

Building awareness is essential to enhancing connection with biodiversity and engaging people in protecting, managing and restoring it. Building and promoting a better understanding of how biodiversity, particularly through ecosystem services and functioning natural systems, underpins people's health, wellbeing and social connectedness, and how it relates to the things we value, is essential.

Highlighting to visitors the value of our natural areas' biodiversity, raising awareness and encouraging community participation, is an important part of growing an appreciation of the benefits that biodiversity brings to our daily lives, and can help instil a sense of responsibility for its protection.

The Queensland Government actively supports land managers, natural resource management groups, and catchment groups to deliver biodiversity-focused activities in forests, fish habitats, waterways, and other priority areas. This includes initiatives such as the Community Sustainability Action Grants program, improving visitor experiences through improved interpretation infrastructure in our iconic national parks, and leveraging the strengths of research institutions, citizen science groups, and wildlife organisations to achieve biodiversity conservation outcomes. We also articulate the value of our living world through marketing, communication and engagement initiatives.

Managing Queensland's biodiversity is no easy task—which is why the Queensland Government nurtures partnerships with key institutions, industry, other government agencies, individual land managers and the private sector to ensure that outcomes are maximised. This includes making sure that people can get full enjoyment of our national parks through partnerships to facilitate minimum-impact nature-based tourism and recreation, partnering with the agricultural industry to work together for improved sustainability, and supporting the conservation of private tenures with significant biodiversity values.

Policy decisions of government are guided by impacts of those decisions on biodiversity and the precautionary principle.

Key DES strategies, programs and policies that contribute to achieving this goal include:

Accelerating Science Delivery Innovation
Biodiversity data tools including, for example, WildNet and Maps Online
Community Sustainability Action Grants
DES Open Data Strategy
Ecotourism Program
Engaging Queenslanders in Science Strategy
Gateway Visitor Centres
Queensland's Protected Area Strategy
State of Environment Report
WetlandInfo

Indigenous Land and Sea ranger talking to a Laura State School student about plant identification

Investing in our biodiversity

Protecting biodiversity is about people and nature. Everyone has a role to play, across land and sea, disciplines and communities; and everyone has a responsibility to protect biodiversity: government, individuals, community and the business and industry sectors.

The Queensland Government protects our biodiversity through various mechanisms. Queensland has world-class national parks and other protected areas; contemporary environmental legislation, programs and policies; planning and development assessment systems; and comprehensive species and ecosystem datasets—informed by internationally-recognised conservation science research.

First Nations peoples, citizen science groups, landholders, natural resource management groups, land managers and philanthropic organisations are all committed to protecting and conserving the state's biodiversity, which is supported through partnerships with Commonwealth, State and local government.

The Queensland Government actively invests in partnerships that deliver outcomes for biodiversity.

This includes collaborating with industry, philanthropy and research agencies to fund and implement species recovery programs; partnering with First Nations peoples to manage biodiversity on country through the Land and Sea Ranger Program and supporting citizen scientists to fill critical knowledge gaps. The Queensland Government has already provided considerable funding to citizen science projects.

We are progressing priority acquisitions for protected areas, delivering the Land Restoration Fund, as well as providing Community Sustainability Action grants. We also invest in the ongoing management of our natural assets, including in our diverse and iconic national parks and the Great Barrier Reef.

We will continue to pursue a partnership model of investment to meet conservation goals and obligations, including with First Nations peoples, land managers, communities and non-government organisations, local and Commonwealth governments, business and industry, and researchers.

The Commonwealth Government also invests in a range of programs and on-ground projects that conserve biodiversity and complement existing Queensland Government programs, such as the Community Sustainability Action Grants program which provides grant funding to enhance species habitat.

In implementing this Strategy we will explore novel ways to attract investment to meet its objectives. We will look at ways to better resource biodiversity conservation initiatives and strategically allocate the resources we have, with a focus on more efficient and effective ways of doing things. We will explore opportunities for new models, including philanthropic and corporate sponsorship.

Additionally, we will continue to develop connections with established and emerging markets for biodiversity products and ecosystem services. The development of tools such as environmental-economic accounting will help to guide and validate market investments. Clear targets, indicators and monitoring and reporting approaches will provide guidance and certainty for co-investment opportunities. We will continue to invest in successful programs such as the Queensland Indigenous Land and Sea Ranger program.

There is growing evidence that our health and wellbeing benefits from time in 'nature'
Gheebulum Kunungai (Moreton Island) National Park
© State of Queensland

Terms and definitions

Actions: The activities taken to meet the objectives, outcomes and vision of the Strategy.

Biosecurity: The management of risks to the economy, the environment and the public that arise from the entry, establishment or spread of invasive biota (including all taxonomic groups and levels).

Conservation: The protection and maintenance of nature while allowing for its ecologically sustainable use.

Connectivity: The degree to which the boundary of one area of habitat, is connected to the boundary of another area of habitat.

Ecosystems: A community of organisms interacting with one another and with the environment in which they live.

Fragmentation: The 'breaking up' of large areas of intact native vegetation.

Goals: What is necessary to achieve along the way to reach our outcomes.

Invasive species: Animals, plants, parasites or disease causing organisms that establish themselves outside their natural range and become pests. Native species can also become invasive if transferred outside their natural range.

Invertebrate: A group of animals that do not have a backbone (vertebrae). Including for example a snail.

Micro-organism: An organism that is so small it cannot be seen with the human eye, unless aided. Including for example, bacteria.

National park: A class of protected area under the *Nature Conservation Act 1992*.

Natural asset: Features of the natural environment that are regarded as having value—whether tangible or intangible. These can include biological assets (produced or wild), land and water areas with their ecosystems, subsoil assets and air.

Natural capital: Features of the natural environment from which people derive ecosystem services, such as productive soils and clean drinking water. Frequently called 'ecosystem services'.

Nature: All aspects of nature, consistent with the definition provided in the *Nature Conservation Act 1992*.

Nature refuge(s): A class of protected area under the *Nature Conservation Act 1992*.

Objectives: Testable aims that drives what actions we take.

Outcomes: Components of the vision that are the end result of achieving our goals.

Organisation for Economic Co-Operation and Development (OECD): An international organisation consisting of 30 or more member countries (including Australia), that was founded to discuss issues relating to economic and social policy.

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

Principles: Concepts that form the foundation of the Strategy and should be considered across all goals.

Protected area: An area of public or private land declared under the *Nature Conservation Act 1992* to be a protected area, (for example a National Park, Conservation Park, or Special Wildlife Reserve), or an area declared as a State Marine Park under the *Marine Parks Act 2004*.

Species, habitats and ecosystems: These include but are not limited to terrestrial, marine, aquatic and wetland areas.

State marine park: An area of land or waters declared under the *Marine Parks Act 2004*, for the purposes of conserving the marine environment.

Threatened species: Any plant or animal species that is at risk of extinction, listed under the *Nature Conservation Act 1992* as either 'extinct in the wild', 'critically endangered', 'endangered' or 'vulnerable'.

Vision: This is what we want for biodiversity in Queensland in the future.