

ACCEPT ACT ADAPT

Climate Adaptation Plan for the Wet Tropics | 2020–2030



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Acknowledgements

Accept, Act, Adapt: Climate Adaptation Plan for the Wet Tropics 2020–2030 (the Plan) was developed through a consultative process led by Wet Tropics Management Authority during 2018–2019. We particularly thank those who attended project workshops and contributed to discussions, meetings and provided comment on the draft documents. We gratefully acknowledge the support from the Australian Department of the Environment and Energy and the Queensland Department of Environment and Science in the development of the Plan.

Acknowledgement of the Rainforest Aboriginal Peoples of the Wet Tropics

The Wet Tropics Management Authority acknowledges Rainforest Aboriginal Peoples as the first sovereign nations and Traditional Owners of the Wet Tropics and pays respect to their Elders, past, present and emerging. The Wet Tropics Management Authority recognises Rainforest Aboriginal Peoples' ongoing and essential connections to the Wet Tropics rainforests and their rights and responsibilities under traditional law and custom. The Wet Tropics Management Authority supports the active roles of Rainforest Aboriginal Peoples in the ongoing management and governance of the Wet Tropics of Queensland World Heritage Area.

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Strategic framework for the Climate Adaptation Plan for the Wet Tropics 2020–2030

Vision: The Wet Tropics community is recognised as a world leader in successful adaptive management of World Heritage in response to climate change.

Goal 1

Establish inclusive regional adaptation planning frameworks

Increase the efficiency of planning processes for adaptation in the Wet Tropics region, and establish mechanisms that enable cross-sectoral planning.

Objective 1.1 Embed participatory scenario planning approaches across the Wet Tropics

Objective 1.2 Develop a decision-making framework to support management for adaptation to climate change

Objective 1.3 Improve research and monitoring for adaptive management

Goal 2

Improve landscape resilience

Promote or restore the potential for adaptive change in biodiversity and ecosystems by managing for diversity in the structure, composition, processes and functions in Wet Tropics landscapes.

Objective 2.1 Implement strategies to increase safe space for nature

Objective 2.2 Protect ecosystems and species at immediate risk

Objective 2.3 Improve understanding of Wet Tropics natural systems

Goal 3

Facilitate transition to adaptive communities and industries

Implement transformative actions in the management of natural systems and actively support decisions that achieve transition to ecologically, culturally, socially and financially sustainable systems under new and unstable climatic conditions.

Objective 3.1 Trial experimental approaches in the management of natural systems

Objective 3.2 Communicate to empower widespread adaptive action

Objective 3.3 Support transformative initiatives in other sectors

Message from the Chair

Australia's World Heritage properties are amongst the best managed in the world, with supportive communities, safe access and high-quality management services. In the Wet Tropics, like the rest of the world, there are mounting pressures from a changing climate that pose serious threats to the ecological, cultural and social values of the Wet Tropics of Queensland World Heritage Area (the Area). This Climate Adaptation Plan for the Wet Tropics (the Plan) sets out strategic actions that we can take over the next ten years to help protect these values.

Climate change was identified as the most significant threat to the Area in the 2015–16 State of the Wet Tropics Report. Based on long term monitoring, the report identified declines in the distribution and population sizes of many species, particularly at elevations over 600 metres, because of climate change. This trend came sharply into focus in 2019, when the highest mountain peaks in the Area experienced a 6-day run of temperatures over 36°C—unprecedented extremes we had previously expected to occur a long way in the future. Researchers are now seeing significant declines in lemuroid ringtail possums at sites that were once their strongholds. The fear is that at some sites, lemuroids, and potentially other mountain top species, could become locally extinct within the coming decade.

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In response, the Wet Tropics Management Authority's Board released 'Climate Change in the Wet Tropics: a 10 Point Plan', calling for urgent action from governments and communities to limit climate change impacts. Some of these measures have been incorporated into the Plan.

The Plan for the Wet Tropics is founded on the need to accept that biodiversity and ecosystems—and the services they provide—are already changing and will continue to change. The Plan embodies the imperative that we act strategically, together and immediately. Finally, the Plan sets out tangible steps to empower action that helps Wet Tropics natural systems, cultures, communities and economies to adapt.

Leslie Shirreffs
Leslie Shirreffs, PSM

Chair | Wet Tropics Management Authority



COOKTOWN

CAIRNS

THE WET TROPICS WORLD
HERITAGE AREA COVERS
0.12%
OF AUSTRALIA

THE WET
TROPICS HAS **15**
26 PRIMITIVE LINEAGES OF
FLOWERING PLANTS IN
THE WORLD
THE HIGHEST CONCENTRATION OF ANCIENT &
RELICT FLOWERING PLANT FAMILIES ON EARTH



TOWNSVILLE

The Wet Tropics: worth acting now

The Wet Tropics of Queensland World Heritage Area (the Area) retains the largest expanse of rainforest in Australia and is considered to have outstanding value for the whole world.

Although it represents a tiny part of the continent, the Area supports the highest level of biodiversity of any region in Australia.

Rainforest Aboriginal Peoples have lived in and managed the Wet Tropics for tens of thousands of years, and the living cultures and customs of the Wet Tropics Rainforest Aboriginal Peoples are formally recognised as the foundation of Australia's important National Heritage. The health of country is essential to the physical, psychological and spiritual well-being of Traditional Owners. Changes already observed by Rainforest Aboriginal Peoples are cause for alarm and there is great fear about ongoing changes.

Many livelihoods and economies in the Wet Tropics depend on healthy natural systems. As climate change increasingly affects the provision of ecosystem services Wet Tropics communities will experience changes in economic prosperity, health (including mental health) and well-being. However, the Authority is confident that through collaborative action and commitment, our communities can ensure a secure future for our irreplaceable Wet Tropics of Queensland World Heritage Area.

HOME TO **3,300+** PLANT SPECIES INC. **700+** ENDEMIC SPECIES



HOME TO **700+** VERTEBRATE ANIMALS INC. **≥ 88** ENDEMIC SPECIES

HOME TO APPROX. **30%** OF AUSTRALIA'S MARSUPIAL SPECIES & **48%** OF BAT SPECIES

HOME TO APPROX. **40%** OF AUSTRALIA'S BIRD SPECIES & **60%** OF BUTTERFLY SPECIES



NATIONAL HERITAGE LISTED FOR ABORIGINAL CULTURAL VALUES **9 DEC 2012**



Wet Tropics Community of Practice

Local councils

Research
organisations

Terrain
Natural
Resource
Management
and other NRM
groups

Indigenous
Ranger groups

Rainforest
Aboriginal
Peoples

Queensland
Parks and Wildlife
Service and
Partnerships

Queensland
Government

Community
service and
infrastructure
providers

Private
conservation
management
organisations

Private and
community-
based land
management
organisations

Conservation
and sustainability
groups

Landholders and
neighbours

Tourism
industry,
nature-based
and ecotourism
businesses

Primary
industries

Australian
Government

Wet Tropics
Management
Authority

Introducing the Accept, Act, Adapt: Climate Adaptation Plan for the Wet Tropics, 2020–2030

The Climate Adaptation Plan for the Wet Tropics, 2020–2030 (the Plan) outlines the specific steps needed to manage natural systems in the Wet Tropics to support their adaptation to climate change.

The Wet Tropics Management Authority (the Authority) has taken the lead in developing this Plan in response to overwhelming concern from the Authority's Board¹, Rainforest Aboriginal Peoples², the Queensland Government³, internationally⁴ and in the Wet Tropics community, about the vulnerability of natural systems and cultural values in the Wet Tropics to climate change⁵.

The Plan concerns management within the Wet Tropics of Queensland World Heritage Area (the Area), as well as of the broader Wet Tropics region, in recognition of the interdependencies between management across tenures, heightened by climate change.

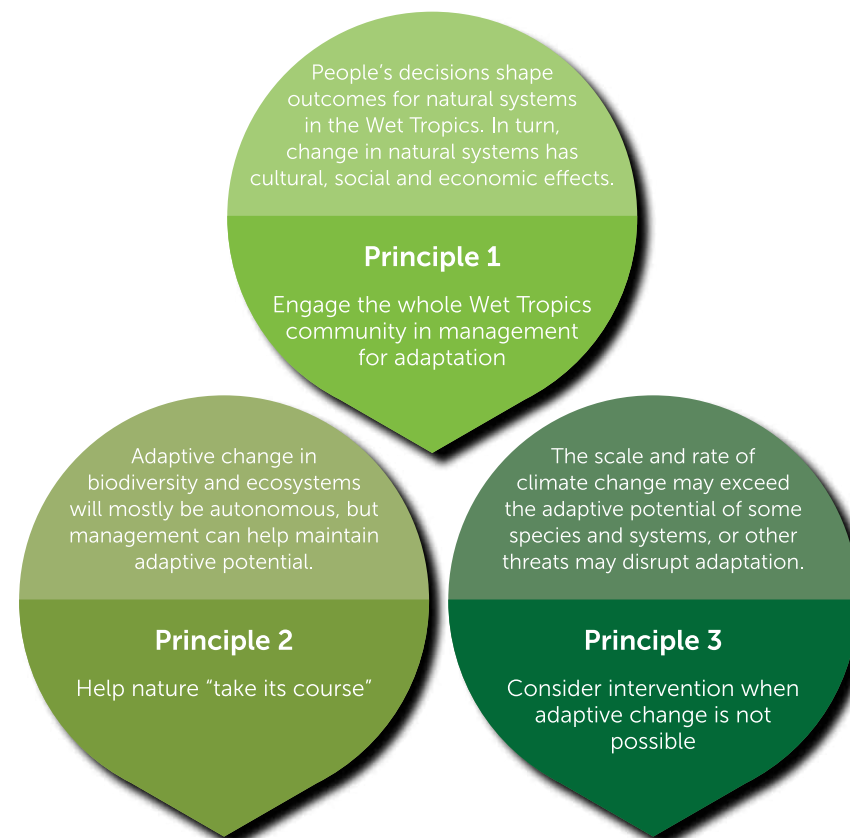
Accordingly, the Authority brought together a diversity of people and organisations involved in managing natural systems in the Wet Tropics, referred to as the Wet Tropics Community of Practice (the Community of Practice). Other sectors (e.g. agriculture, health, emergency management, land use planning and infrastructure services) are also affected by changes in biodiversity and ecosystems⁶, and in turn influence the potential for climate adaptation in natural systems through their operations.⁷ An integrated, cross-sectoral adaptation plan was beyond the scope of the Plan but work across sectors for climate adaptation is critical and highlighted in the Plan.

The ability of natural systems to rapidly adapt to climate change is severely constrained. Limiting climate change by reducing greenhouse gas emissions is imperative for the protection of the Outstanding Universal Value of the Wet Tropics, including Rainforest Aboriginal Peoples' cultural values, as well as impacts on Wet Tropics economic and social sectors.⁸ Ultimately, transition to a society underpinned by pragmatic land use practices and based on renewable energy will be needed to avoid catastrophic impacts.⁹ It is implicit in the Plan that opportunities for mitigating climate change will be pursued wherever possible.

Guiding principles

The Plan recognises that natural and cultural systems in the Wet Tropics are experiencing significant, widespread and unavoidable effects as a result of climate change. Climatic instability will continue long into the future. Existing management approaches and expertise will remain highly relevant, but new or adjusted approaches are needed to facilitate climate adaptation while addressing impacts from clearing and fragmentation, invasion by introduced plants and animals, changes to water flows and fire regimes, and pollution. Three high-level principles are set out to guide management decisions:

High-level principles for managing Wet Tropics natural systems for adaptation to climate change



Policy, planning and programmatic framework for the Plan

The Plan's strategic framework can be found on page 3. The overall vision engenders three goals that each have three component objectives. To achieve these objectives, 27 strategic actions have been distilled from the complex and varied ideas contributed during iterative engagement with the Community of Practice, as well as from relevant Commonwealth, State and regional programs, plans and policies. For example, strategic actions are inclusive of actions identified for responding to impacts of climate change in the Authority's Strategic Plan¹⁰, as well as consistent with the Climate Adaptation Plan for Queensland's Biodiversity and Ecosystems.¹¹



Goal 1: Establish inclusive regional adaptation planning frameworks

Increase the efficiency of planning processes for adaptation in the Wet Tropics region and establish mechanisms that enable cross-sectoral participatory planning and resource-sharing among researchers, managers, planners and Rainforest Aboriginal Peoples.

Objective 1.1 Embed participatory scenario planning approaches across the Wet Tropics

Improved regional-scale coordination of adaptation planning will help align adaptation priorities¹², avoid duplication of effort, promote opportunities to learn from experiences, and avert 'consultation fatigue' among shared stakeholders.

Strategic actions for planning

1. Improve the coordination and integration of information across a range of adaptation plans and projects throughout the Wet Tropics. This will ensure that adaptation is better mainstreamed into the work of all relevant organisations.
2. Develop and support decision-making mechanisms that provide realistic opportunities for engagement with existing and new Community of Practice partners.
3. Support processes that demonstrate innovative adaptive planning and share these learnings with the Community of Practice. Collaborate with these groups to secure the practical support required to deliver these programs.

Objective 1.2 Develop a decision-making framework to support management for adaptation to climate change

Moving from managing for 'what is known' to managing for 'what might be' requires a new decision-making framework that accepts fundamental change and uncertainty and can be applied over long time-frames.

Strategic actions for decision-making

4. Build on existing principles and decision-making frameworks for natural systems^{13,14}, to manage the Area for climate adaptation, and encourage broader adoption amongst the Community of Practice.
5. Incorporate equitable and culturally-appropriate processes for including traditional ecological knowledge and tribal science in adaptation decision-making for managing the Wet Tropics.

Objective 1.3 Improve research and monitoring for adaptive management

Increase knowledge about change in Wet Tropics biodiversity and ecosystems to develop appropriate management responses and to reduce the risk of continuing ineffective or maladaptive management.

Strategic actions for monitoring

6. Identify priority refugia, ecosystems and species in the Wet Tropics as the basis for a long-term adaptation monitoring program.
7. Develop and implement a monitoring framework of adaptive change across the Wet Tropics and align with existing monitoring programs wherever possible.
8. Develop and implement a comprehensive science and innovation research framework and implement, to support long-term adaptive management.
9. Support innovative and community-driven complementary monitoring programs, including monitoring carried out by Rainforest Aboriginal Peoples, industry and citizen science programs where appropriate.

Goal 2. Improve landscape resilience

Promote and restore the potential for adaptive change in biodiversity and ecosystems by managing for diversity in the structure, composition, processes and functions in Wet Tropics landscapes.

Objective 2.1 Implement strategies to enhance refugia for nature

Coordinate on-ground work that addresses the multiple threats affecting the resilience of natural systems, including habitat loss and fragmentation, invasive species and interruption to ecological processes.

Strategic actions for enhancing refugia for nature

10. Secure protection for high priority at-risk habitat in locations that are expected to provide climatic refugia for biodiversity, including areas outside the World Heritage boundary. This may involve working with other landholders, land managers, private conservation management organisations and the carbon sector.
11. Identify high priority refugia and conduct on-ground works that increase the diversity, condition and availability of micro-climate refugia, including habitat elements and topographic features that provide shelter during climatic extremes.



12. Implement strategic management of invasive species and diseases, updated to incorporate knowledge about impacts of climate change on future distributions and emerging issues, together with understanding about key ecological processes.¹⁵
13. Support all Wet Tropics land managers to implement appropriate fire regimes in response to a variable and changing climate to fire-sensitive ecosystems such as rainforests.

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Objective 2.2 Protect ecosystems and species at immediate risk

Take action to avert the loss of Wet Tropics biodiversity and ecosystems under immediate threat from climate change. We currently know the most about impacts on montane systems, but there will be more widespread negative impacts, particularly for taxa and systems with specialised habitat needs, narrow distributional ranges, or currently living near the threshold of their climatic tolerance. Some taxa will also benefit from climatic changes.

Strategic actions for species and systems under threat from climate change

14. Identify at-risk species and ecosystems in montane areas through a monitoring program. This program will assist us to better understand trends and inform management responses and interventions, and possibly indicate where interventions are not feasible.
15. Seek conservation status listing for species and ecosystems under threat from climate change, to recognise this threatening process to their conservation. This will assist in making better policy, planning and investment decisions.

16. Support specific interventions to help at-risk species and ecosystems to adapt, based on monitoring programs and best available information. Examples of interventions could include approaches such as habitat engineering, enrichment and direct interventions.

Objective 2.3 Improve understanding of Wet Tropics natural systems

Support for field research and monitoring has declined, despite the increasing need for updated information to inform management action.

Strategic actions for understanding natural systems

17. Pursue options to increase collaborative research into the current and (uncertain) future states of Wet Tropics natural systems, including manipulative experimentation.¹⁶ Identify potential socio-ecological links, such as indirect impacts of climate change on communities and regional economies through change in ecosystem services.
18. Support research and monitoring led by Rainforest Aboriginal Peoples, including approaches based on traditional ecological knowledge and experience of adaptation to historic climate risks.
19. Develop systems for efficiently updating regional 'established knowledge' based on new data.



Goal 3. Facilitate transition to adaptive communities and industries

Implement transformative actions in the management of natural systems and actively support decisions that achieve transition to ecologically, culturally, socially and financially sustainable systems under new and unstable climatic conditions.

Objective 3.1 Trial experimental approaches in the management of natural systems

Foster implementation of new management tools for adaptation of biodiversity and ecosystems in the Wet Tropics.

Strategic actions for experimental approaches

20. Explore potential for science-based interventions such as gene banking, assisted gene flow, captive populations, assisted migration, translocation and genetic editing.
21. Implement trials of direct interventions, restoration and management works that facilitate ecosystems transition, such as by allowing novel changes in composition but maintaining ecosystem functions.

Objective 3.2 Communicate to empower widespread adaptive action

Motivate action through improved exchange of knowledge and information that increases the broader Wet Tropics community's understanding of values, risks and adaptation options.

Strategic actions for empowering adaptive action

22. Develop clear, consistent messaging about the adaptation work of the Community of Practice.
23. Design messages to support processes that empower citizens and stakeholders to gain understanding, take action, and strengthen their social resilience.¹⁷
24. Empower the community through supporting community-led initiatives that increase participation in adaptation action across the Wet Tropics.

Objective 3.3 Support transformative initiatives in other sectors

Support the transition to adaptive communities and industries in the Wet Tropics. Advocate for maintaining options for adaptation in natural systems and capitalising on opportunities for cross-sector benefits.

Strategic actions for multi-sector transformation

25. Actively seek and promote opportunities for cultural, social and economic co-benefits of building adaptive capacity in natural systems, including green infrastructure, ecosystem-based emergency management¹⁸, biodiversity offsets and carbon sequestration programs.
26. Work to ensure that natural systems—including associated ecosystem services and Rainforest Aboriginal Peoples' cultural values—are cross-cutting themes in other sectors' plans to address climate-induced vulnerability (e.g. landward relocation of coastal populations).¹⁹
27. Support transition to zero emissions communities and industries.²⁰



Implementation approach

The Wet Tropics Management Authority is responsible for ensuring that the Plan achieves the trajectories to success outlined below. The strategic actions outlined in the Plan will be implemented in partnership with the Wet Tropics Community of Practice and are designed to build on or integrate with ongoing initiatives and directions of our partners.

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The Authority will support delivery in a variety of ways depending on capacity and available resources which may include:

- mapping out the range of sectors that influence adaptation of natural systems and identify opportunities for engaging key sectors through existing or new work of the Community of Practice
- supporting processes that demonstrate innovative adaptive planning, and share experience with the Community of Practice
- work with community, industry and government to co-develop adaptation planning processes, recognising that these will be at different spatial and temporal scales. Collaborate with these groups to secure the practical support required to initiate innovative programs.

Effective implementation of the Plan requires a cross-sectoral approach that also engages with neighbours. Of particular importance will be the adjoining Great Barrier Reef World Heritage Area, adjacent landholders and new partners across sectors including the agricultural, health, social services, arts, business and education sectors.

Resources to deliver the Climate Adaptation Plan for the Wet Tropics

This Plan will be delivered through a combination of existing and additional resources that will need to be secured over its life. The Authority will be seeking investment from philanthropic, industry and government sources to deliver the actions. A prospectus will be distributed to promote investment in climate change action in the Wet Tropics.



Measuring success

The Plan is a key action to achieve the four outcomes identified in the Wet Tropics Strategic Plan 2020–2030 and will be measured within the strategic plan evaluation framework. Progress in terms of implementing the Plan will be reported in the Authority's annual report as part of reporting on the Strategic Plan 2020–2030. The Plan for the Wet Tropics will be reviewed in 2025 and will undergo major review in 2030. Outlined below are the characteristics of successful adaptation:

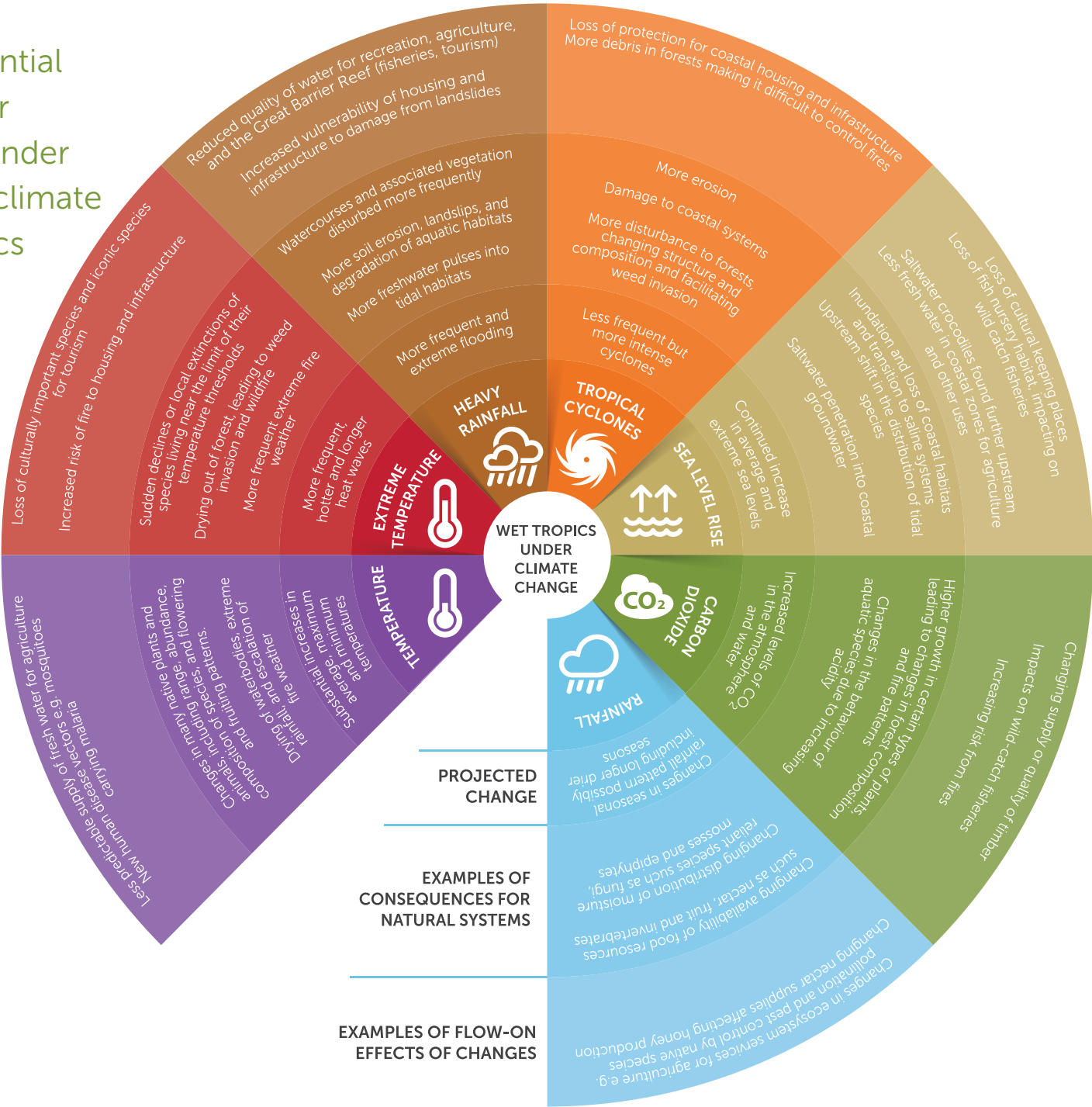
- ✓ Planning integrates objectives that match the rate and scale of change being experienced, is based on participatory processes, and engages other sectors.
- ✓ Advocacy facilitates legislative change that enables new and experimental management approaches and identifies natural systems as cross-cutting issues across all sectors.
- ✓ Research and knowledge co-production are strategic and deliver practical understanding of ways to help nature adapt as well as when and how to intervene.
- ✓ On-ground management is adequately resourced to include passive trials and well-designed monitoring that enables adaptive decision-making.
- ✓ Communication effectively engages the Community of Practice and wider community to accept the implications of climate change for the Wet Tropics and fosters action at all scales.

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Overview of potential consequences for natural systems under projected future climate for the Wet Tropics



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