Beyond area: Why Australia's protected areas aren't delivering for biodiversity and what needs to change

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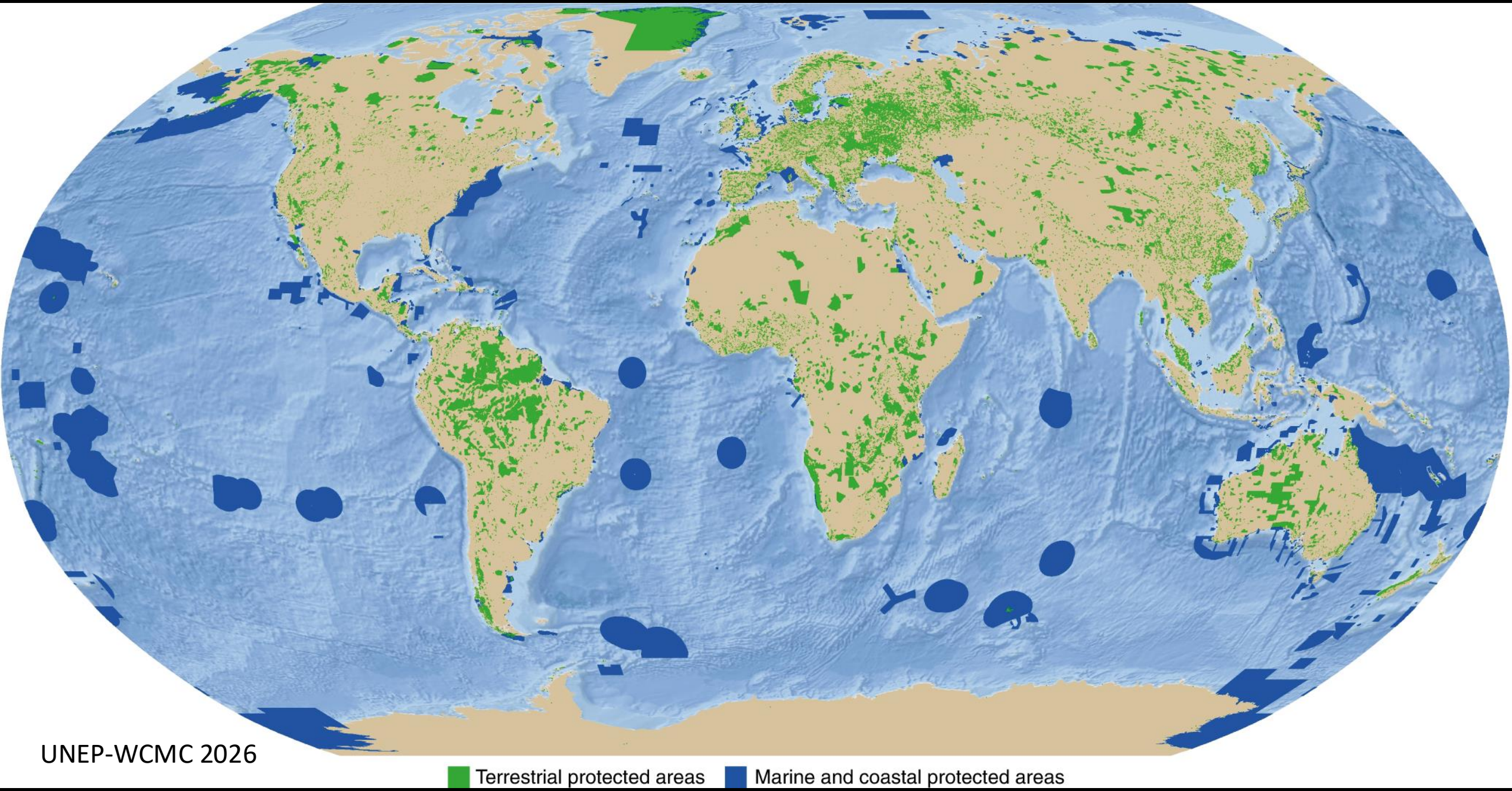
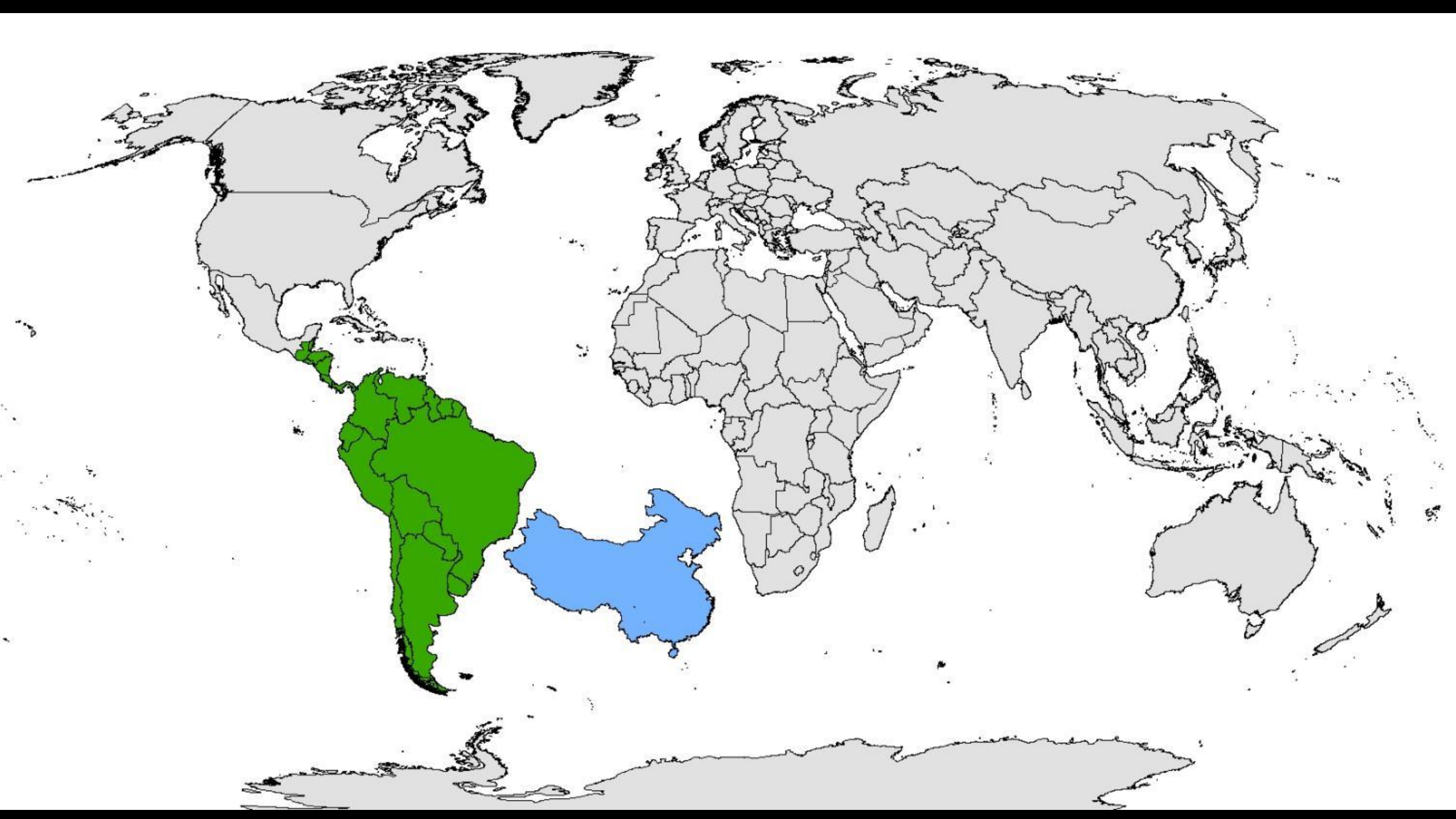

UNEP-WCMC 2026
Terrestrial protected areas
Marine and coastal protected areas



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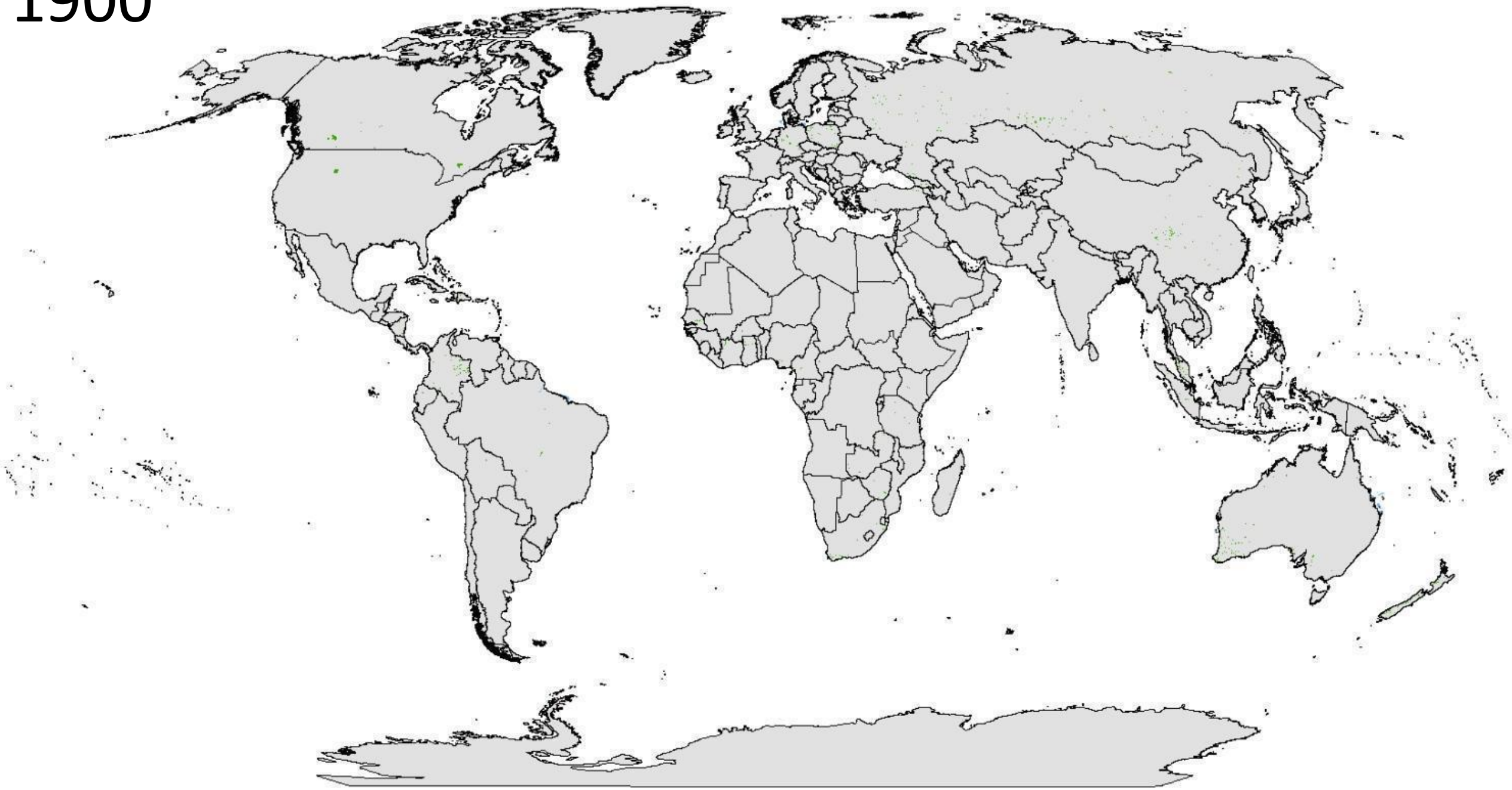

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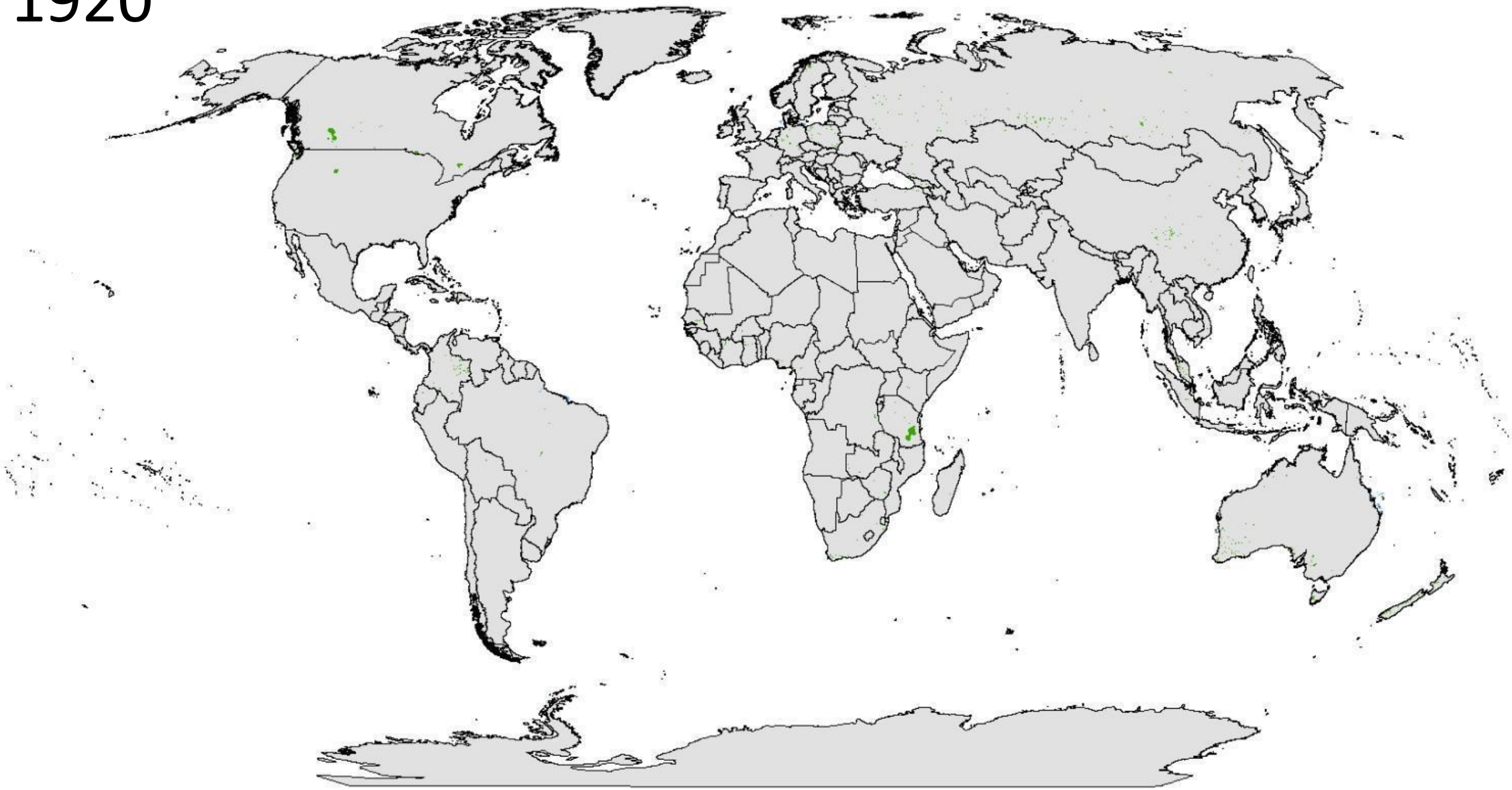

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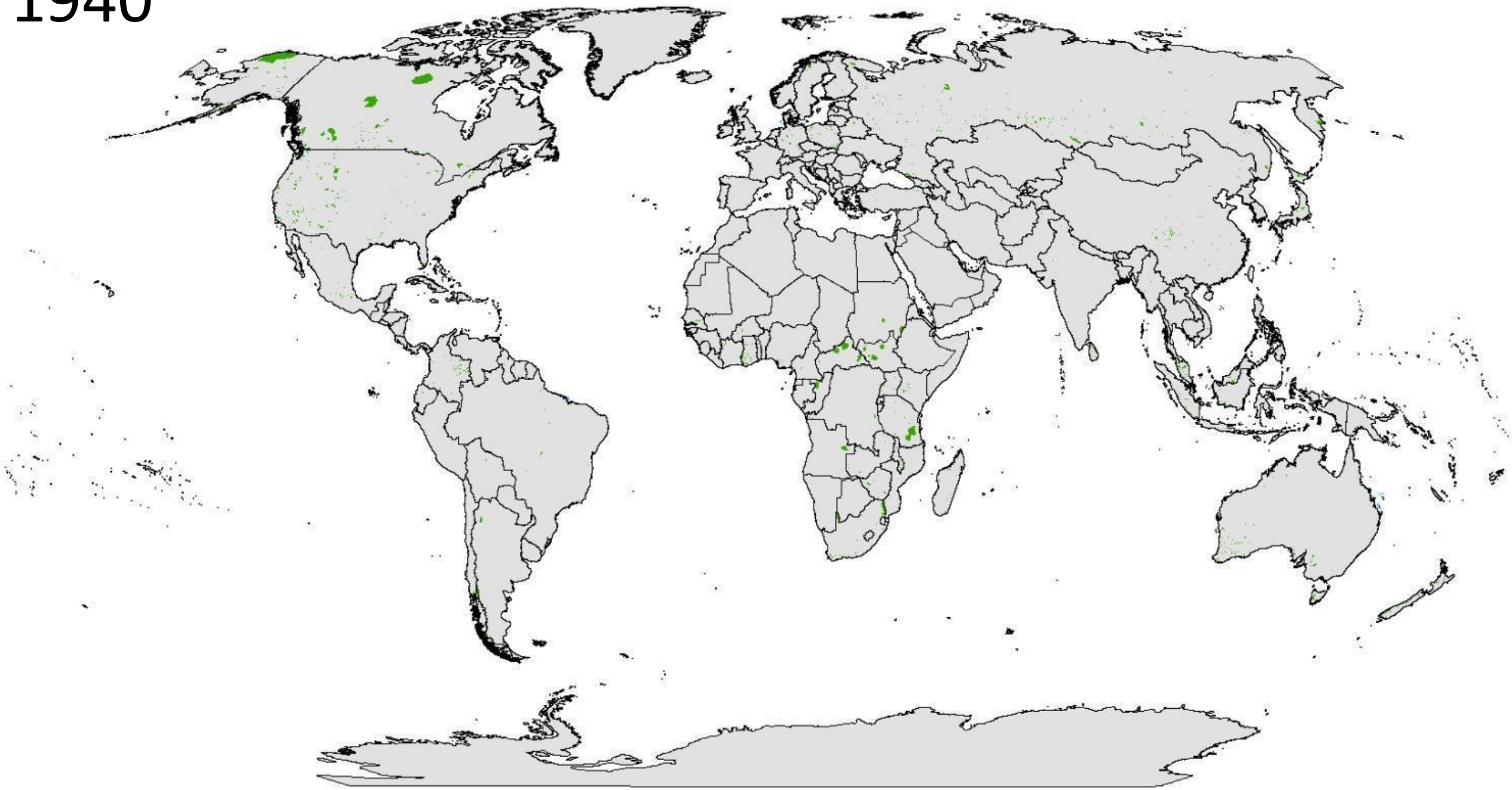

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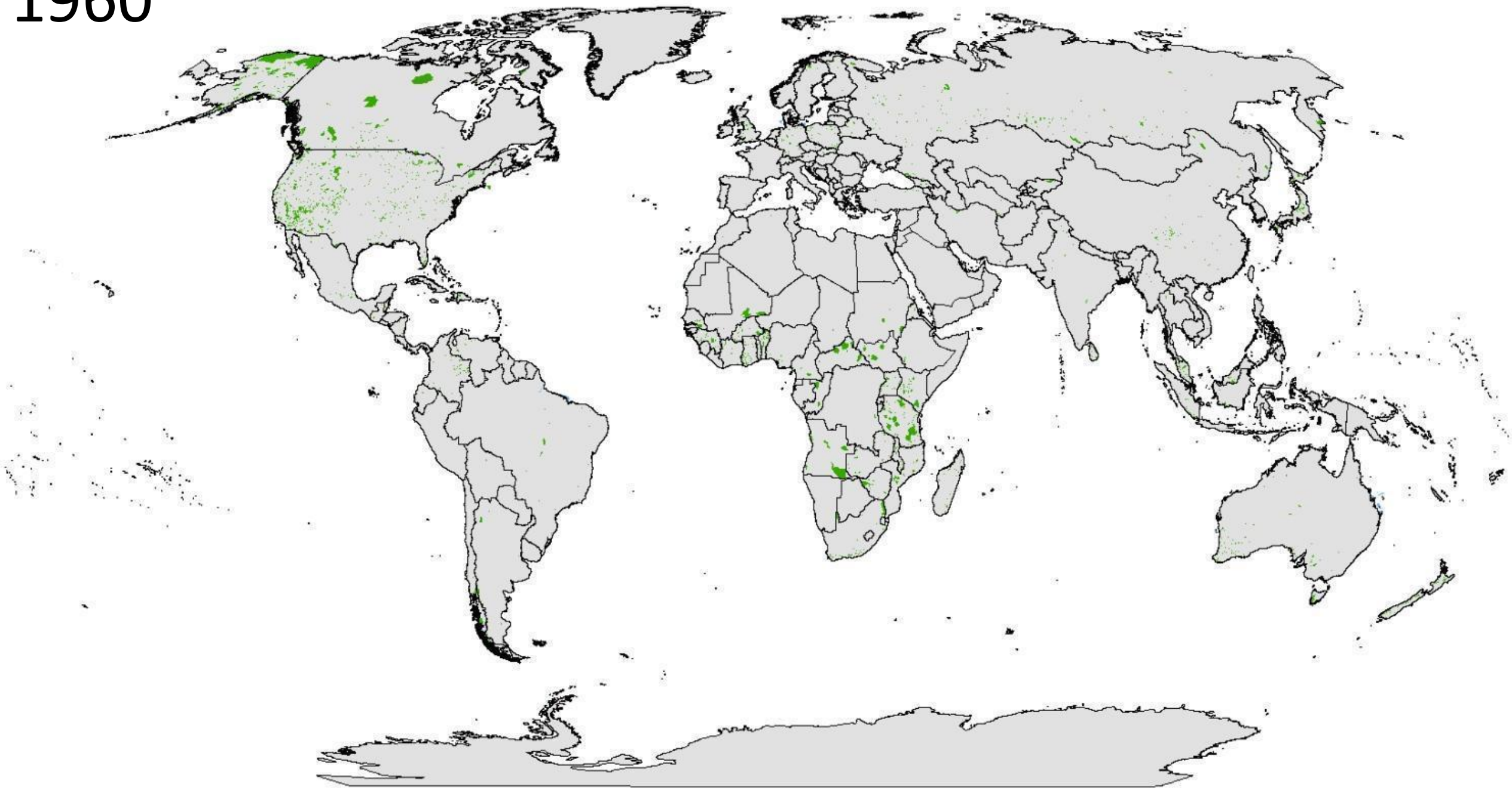

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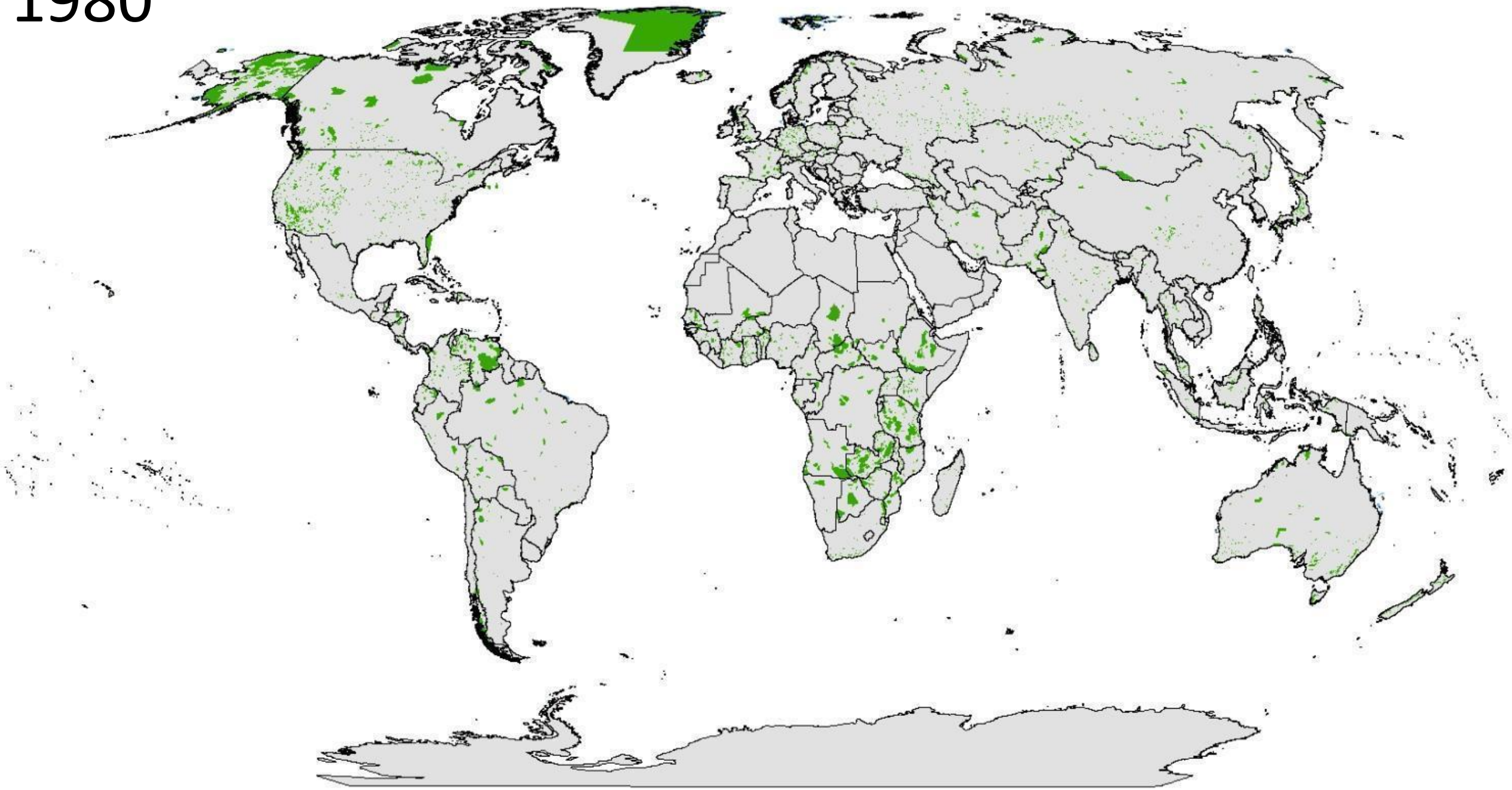

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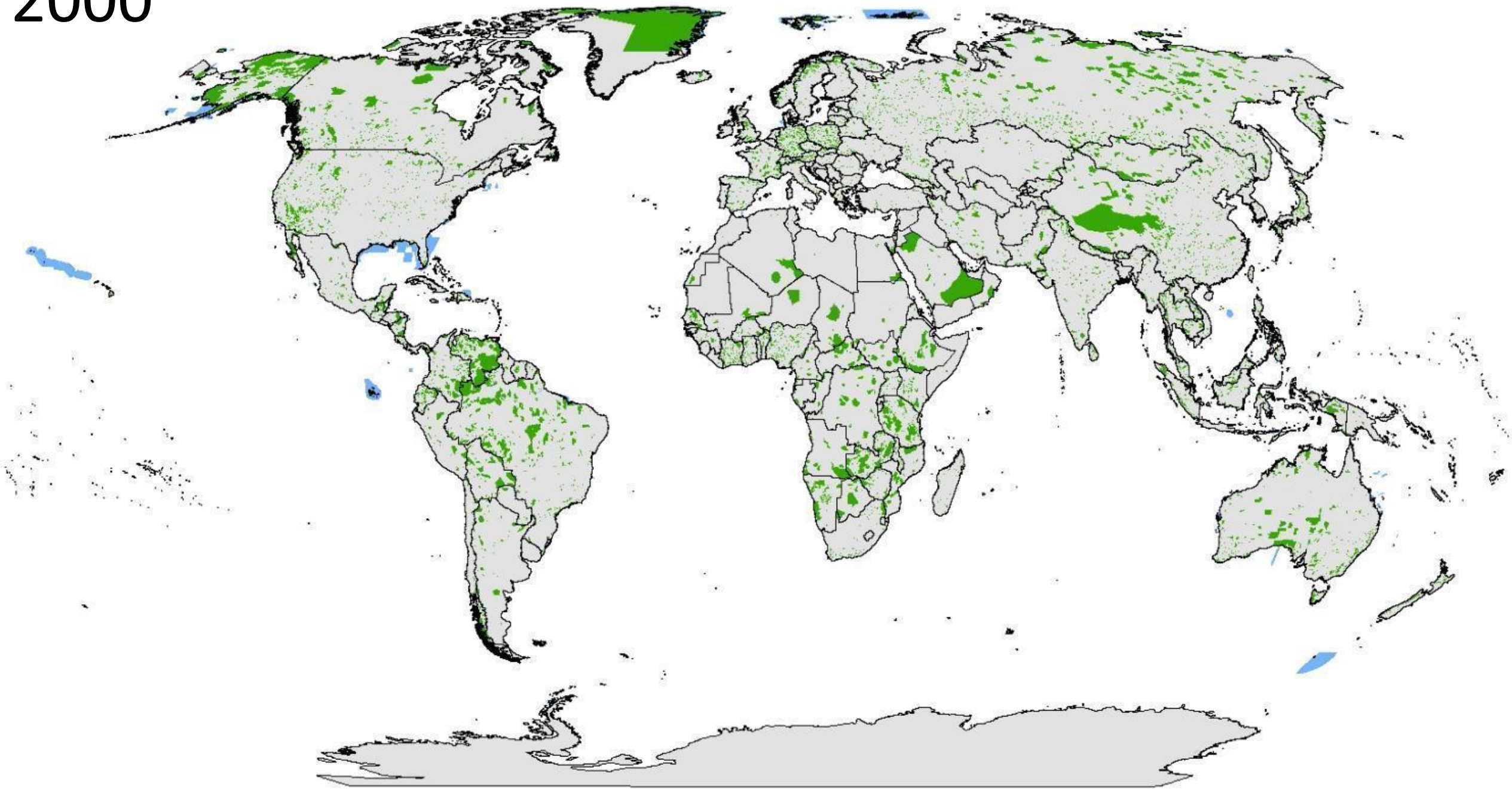

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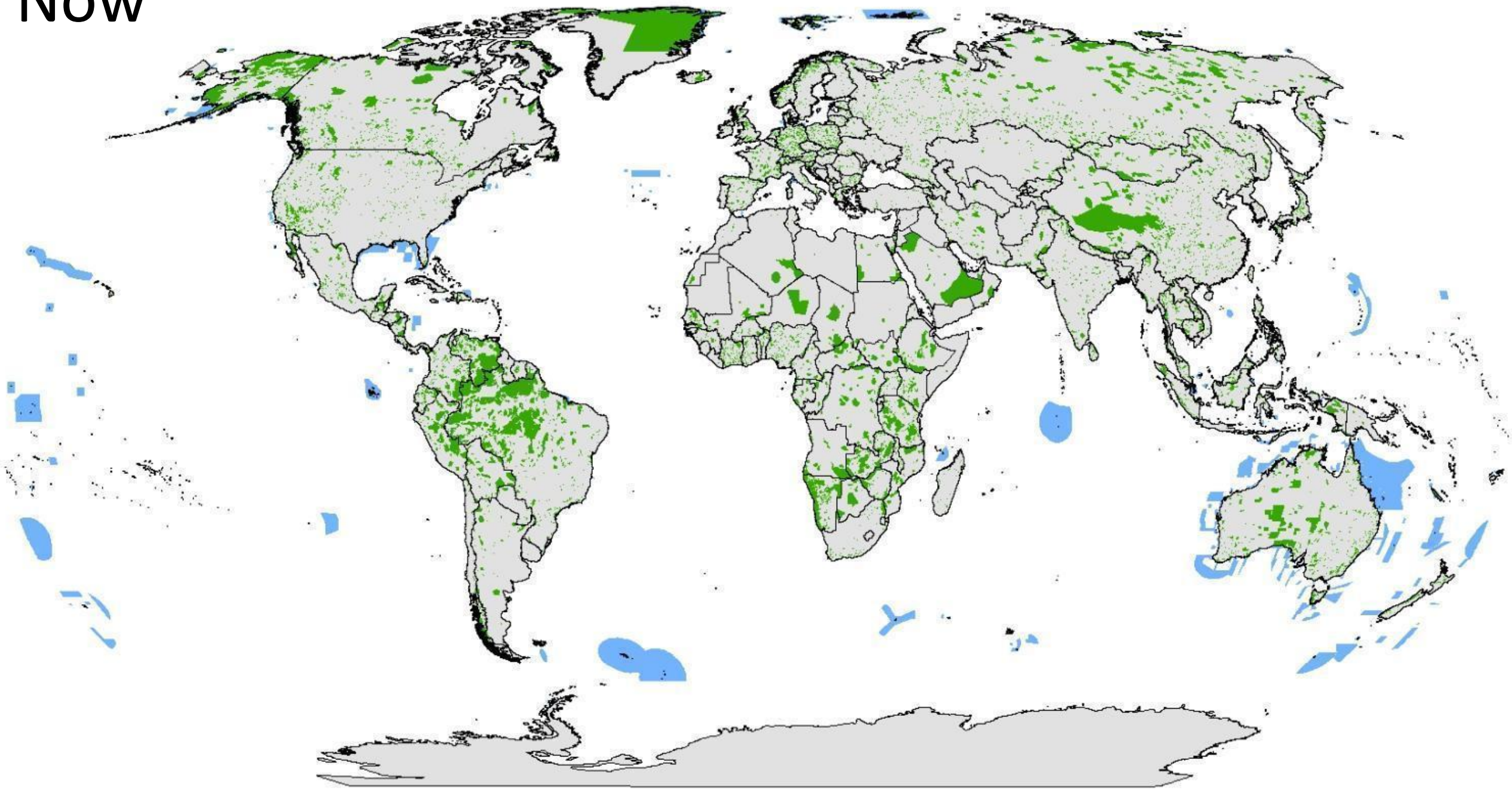

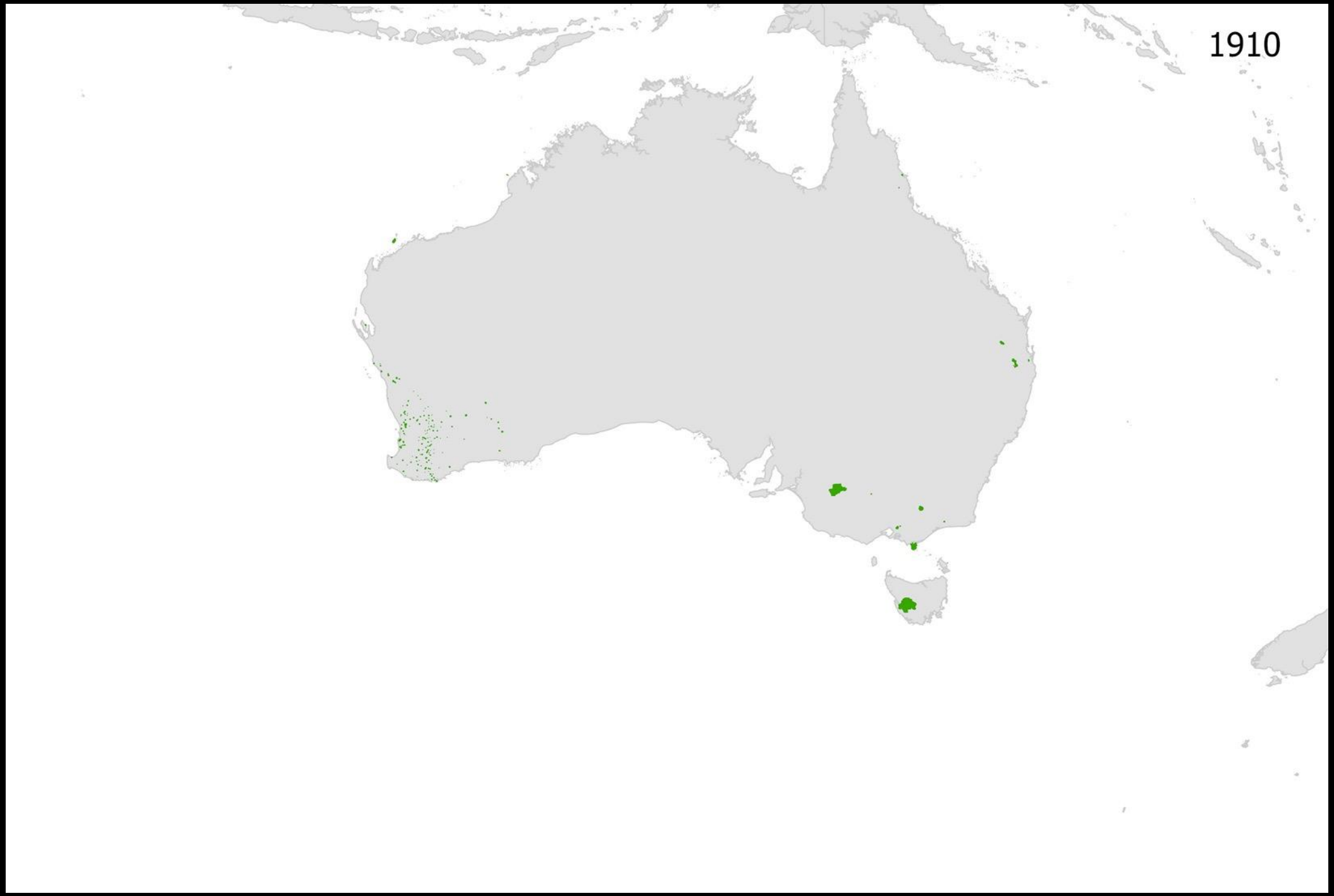
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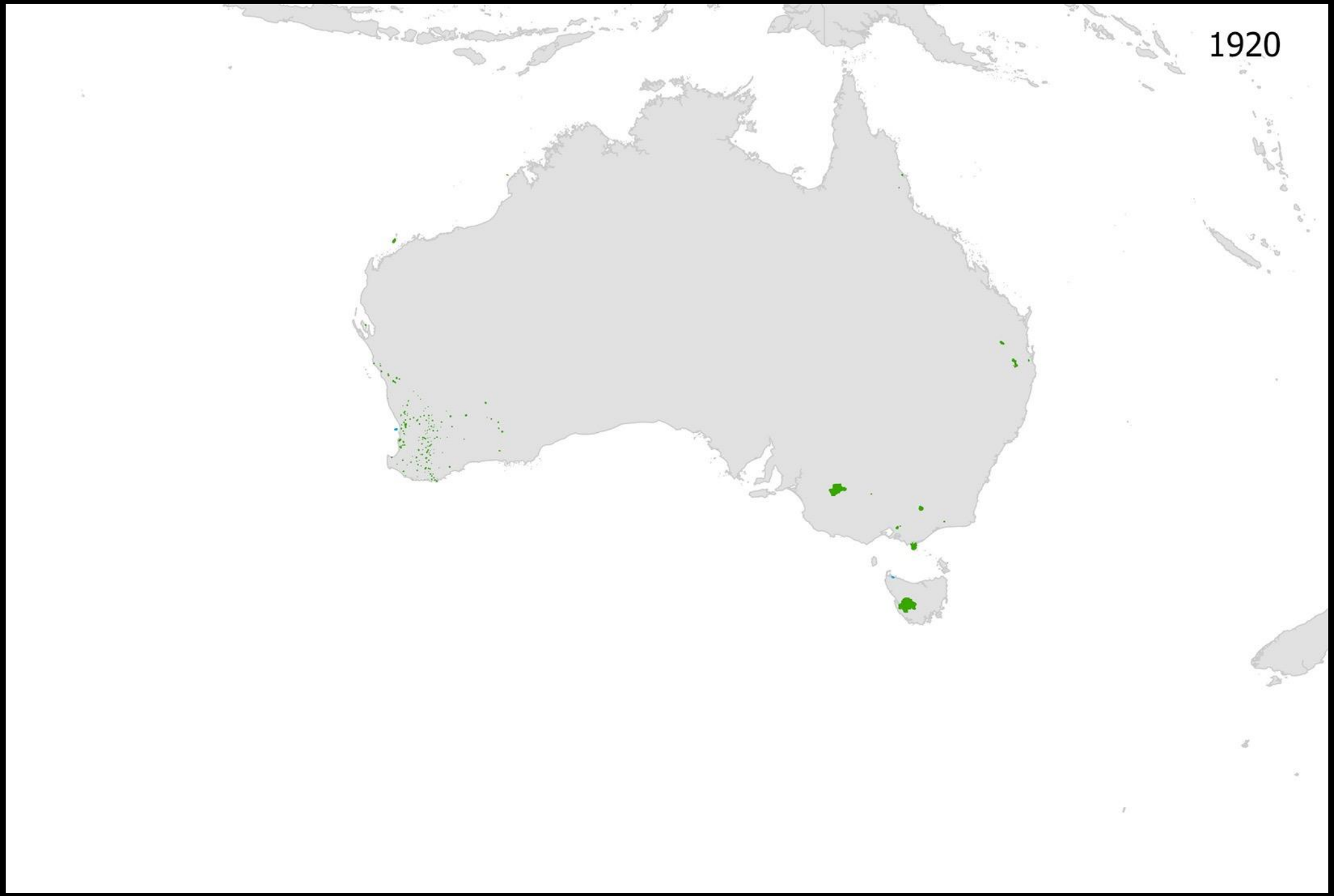
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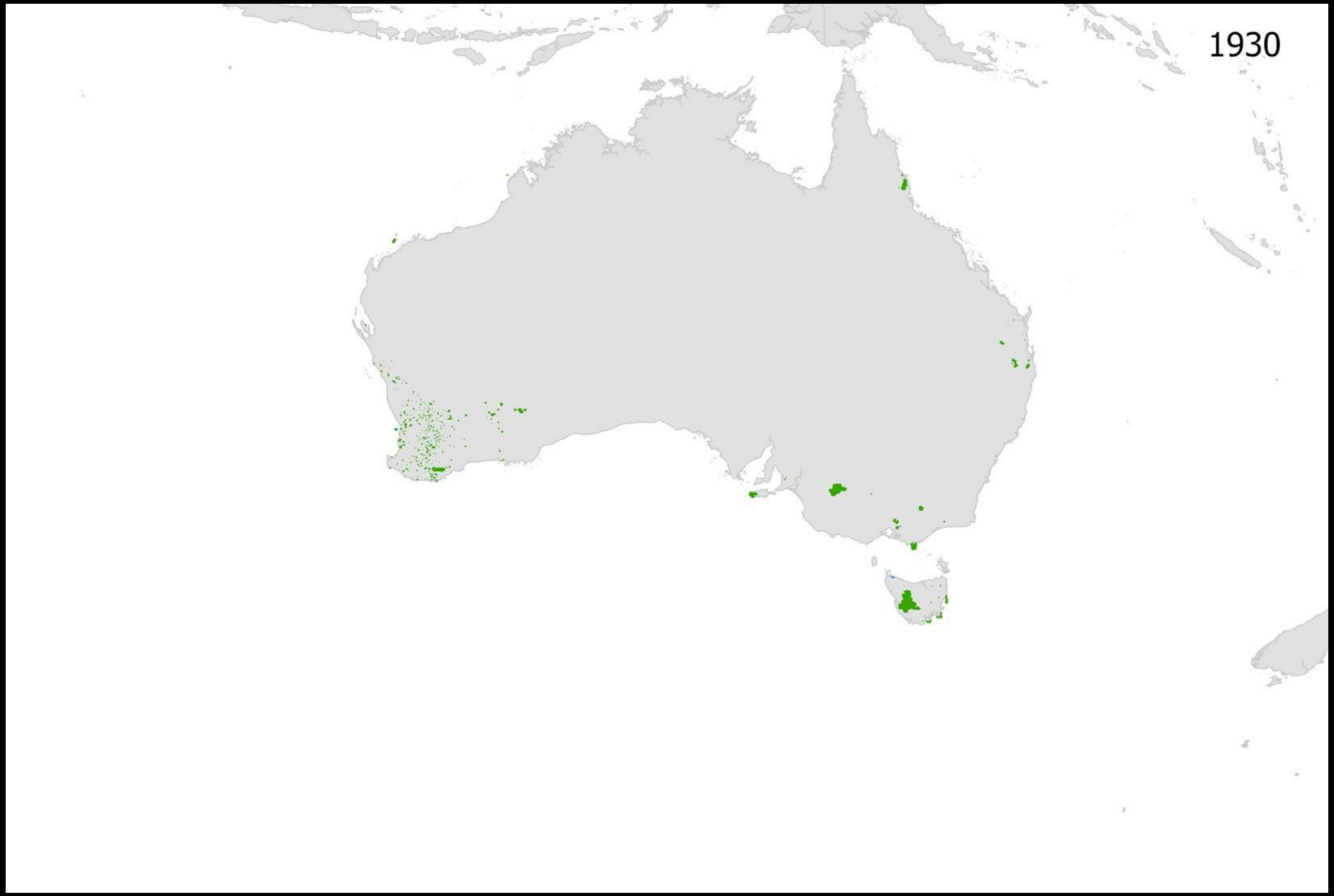
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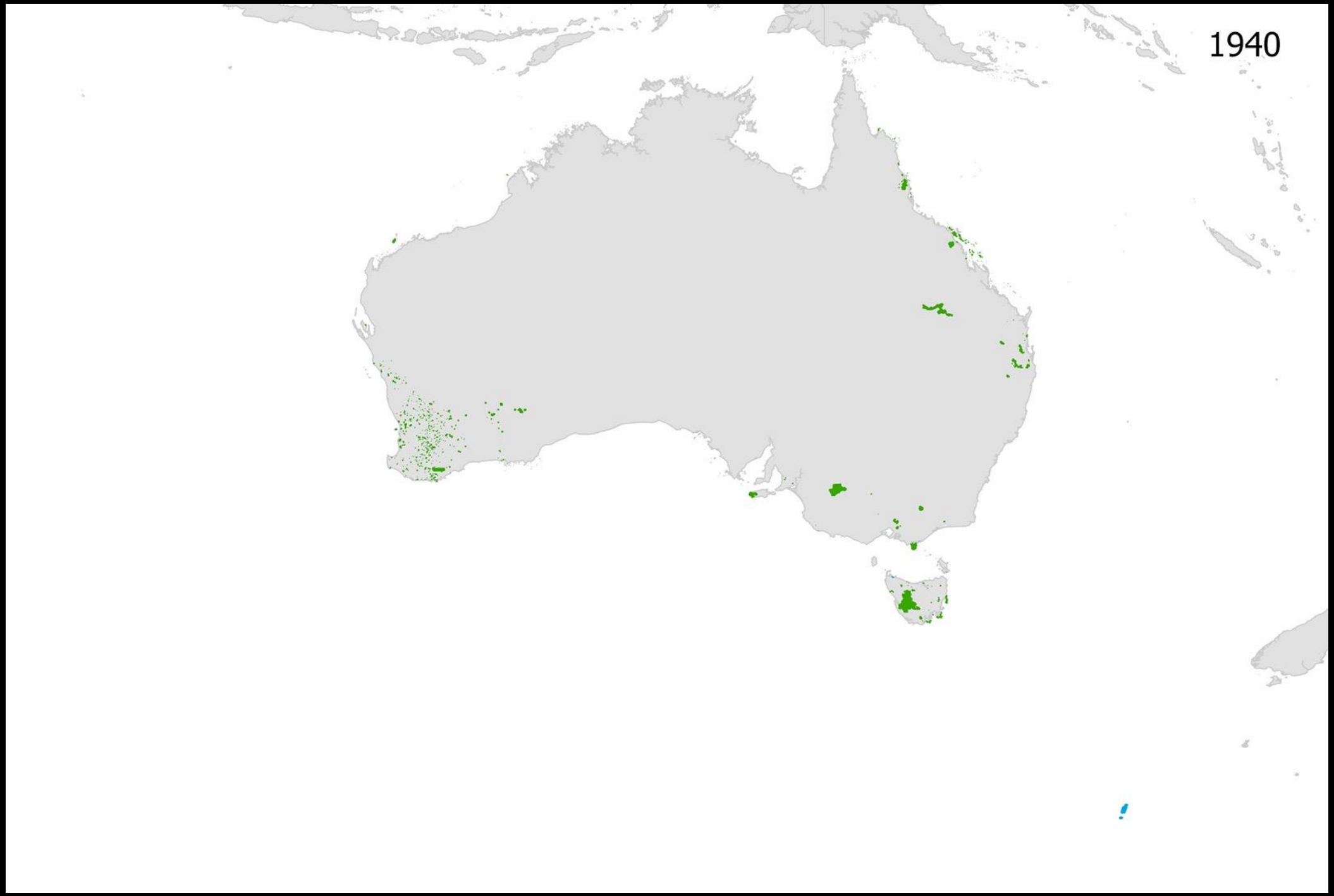
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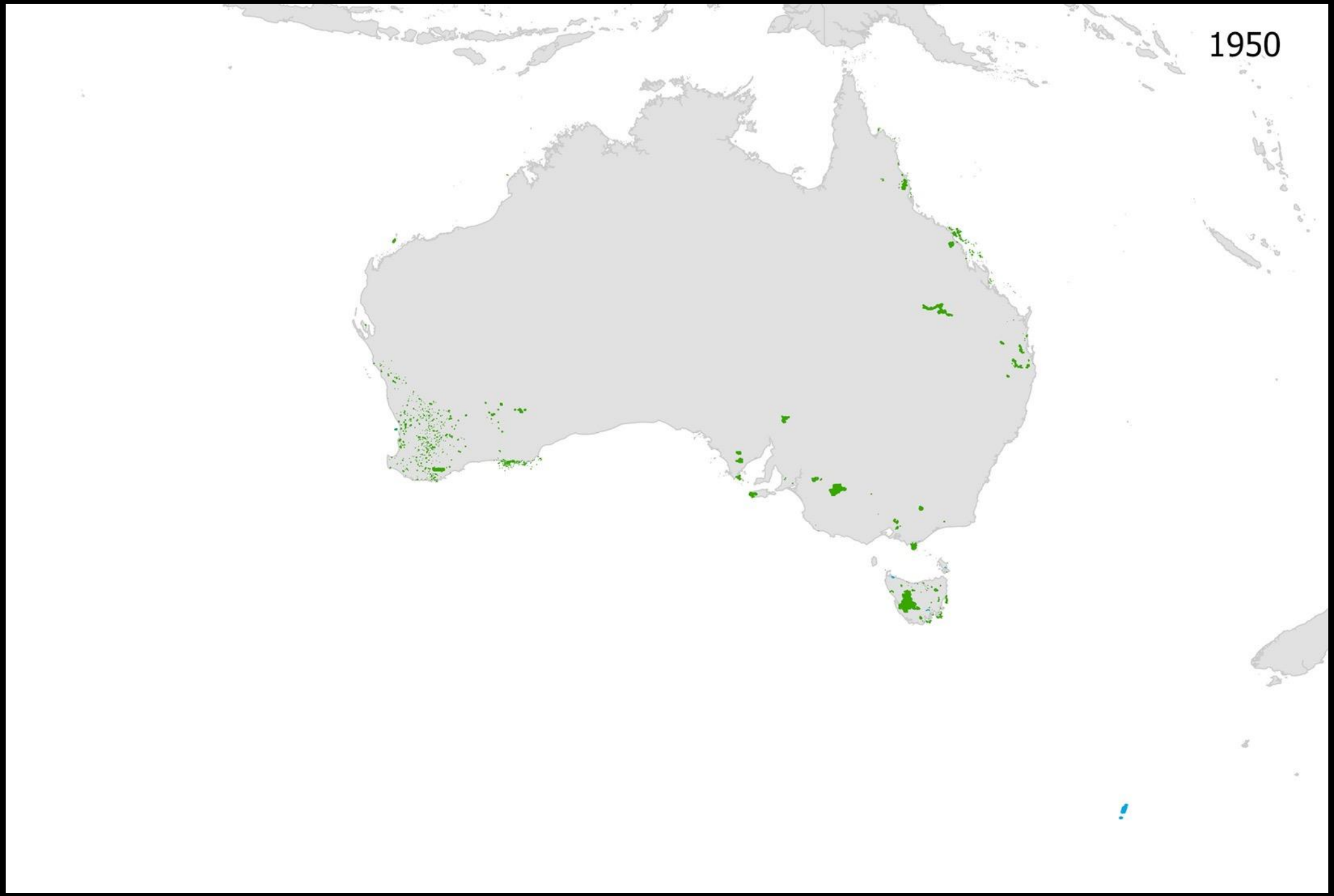
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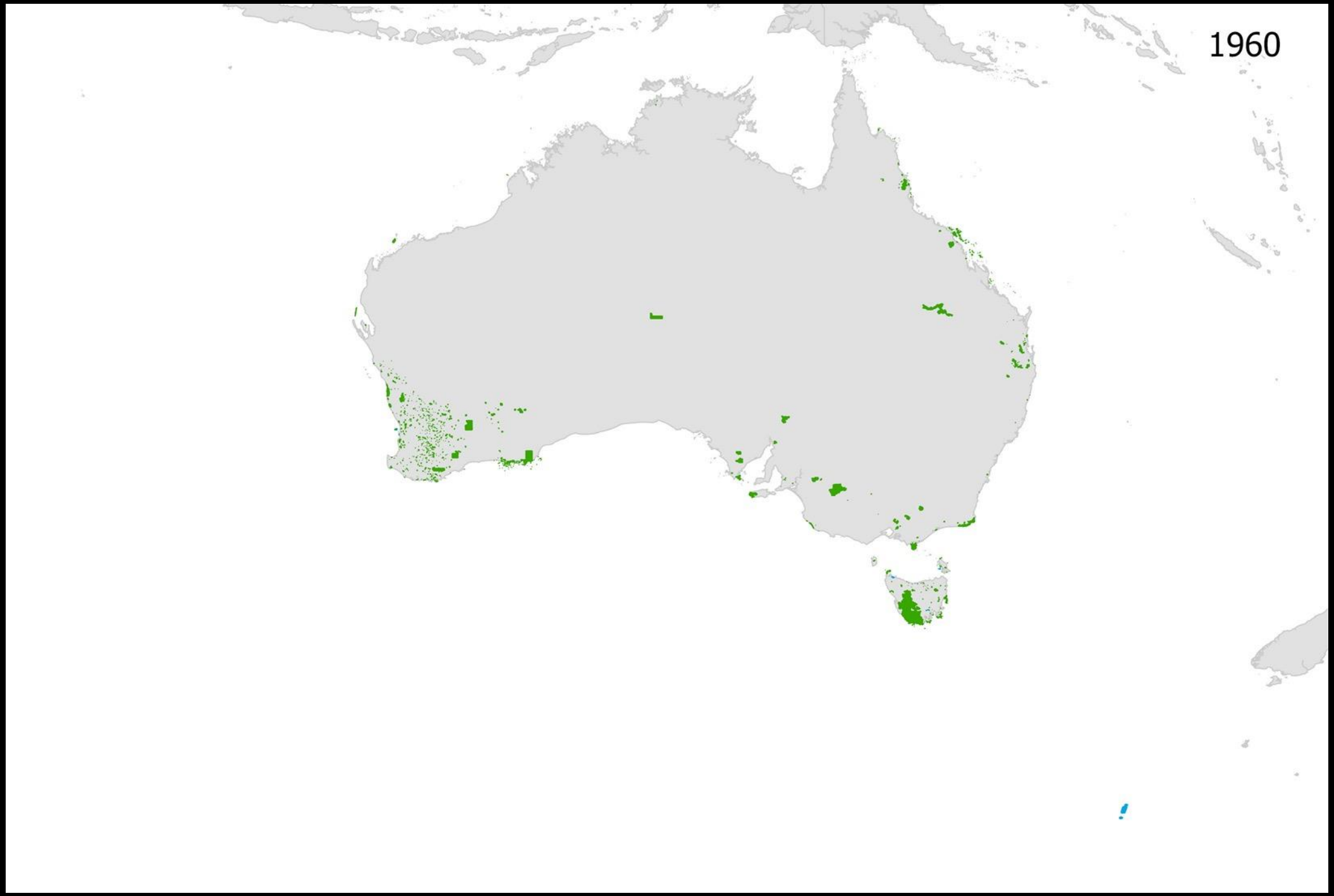
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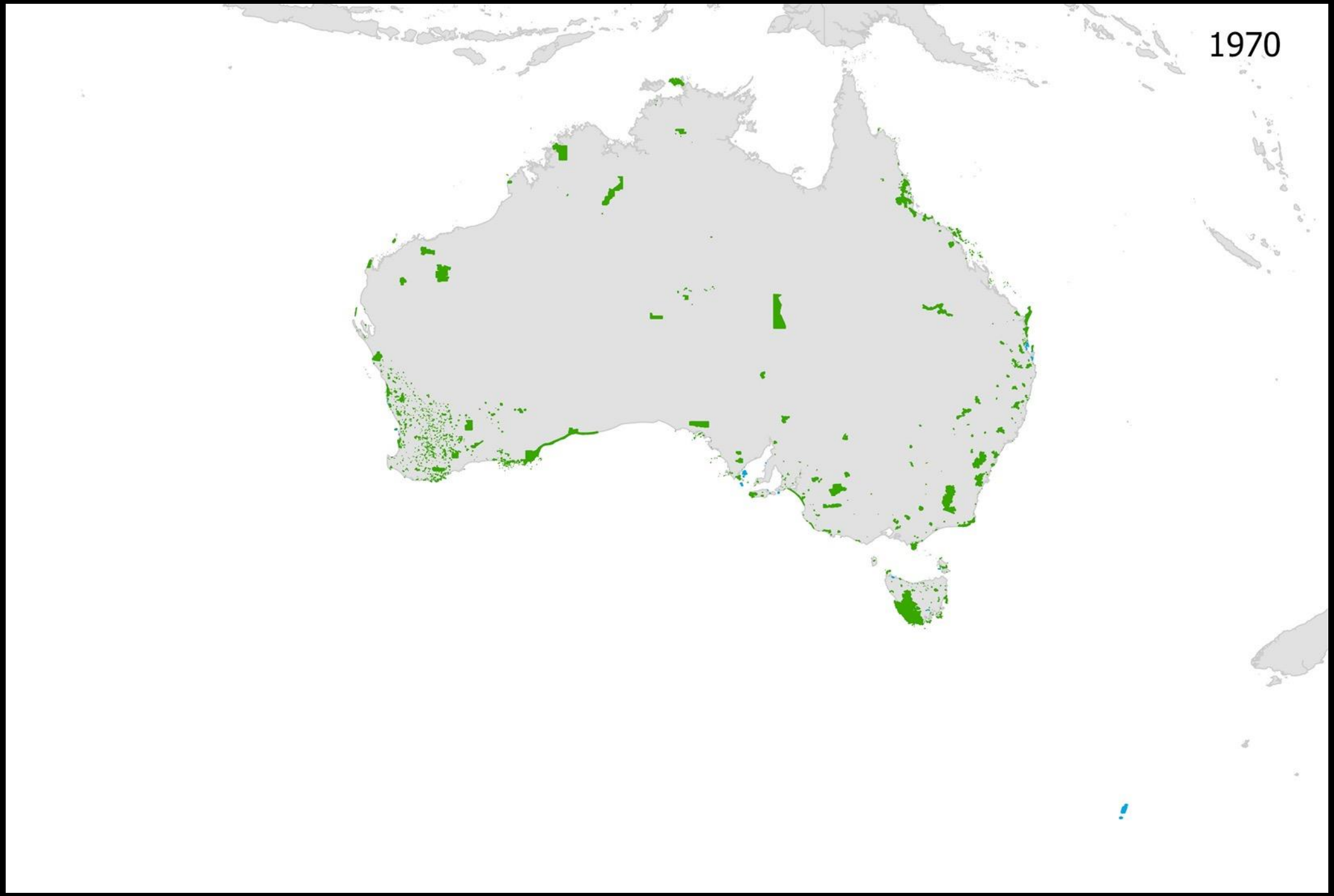
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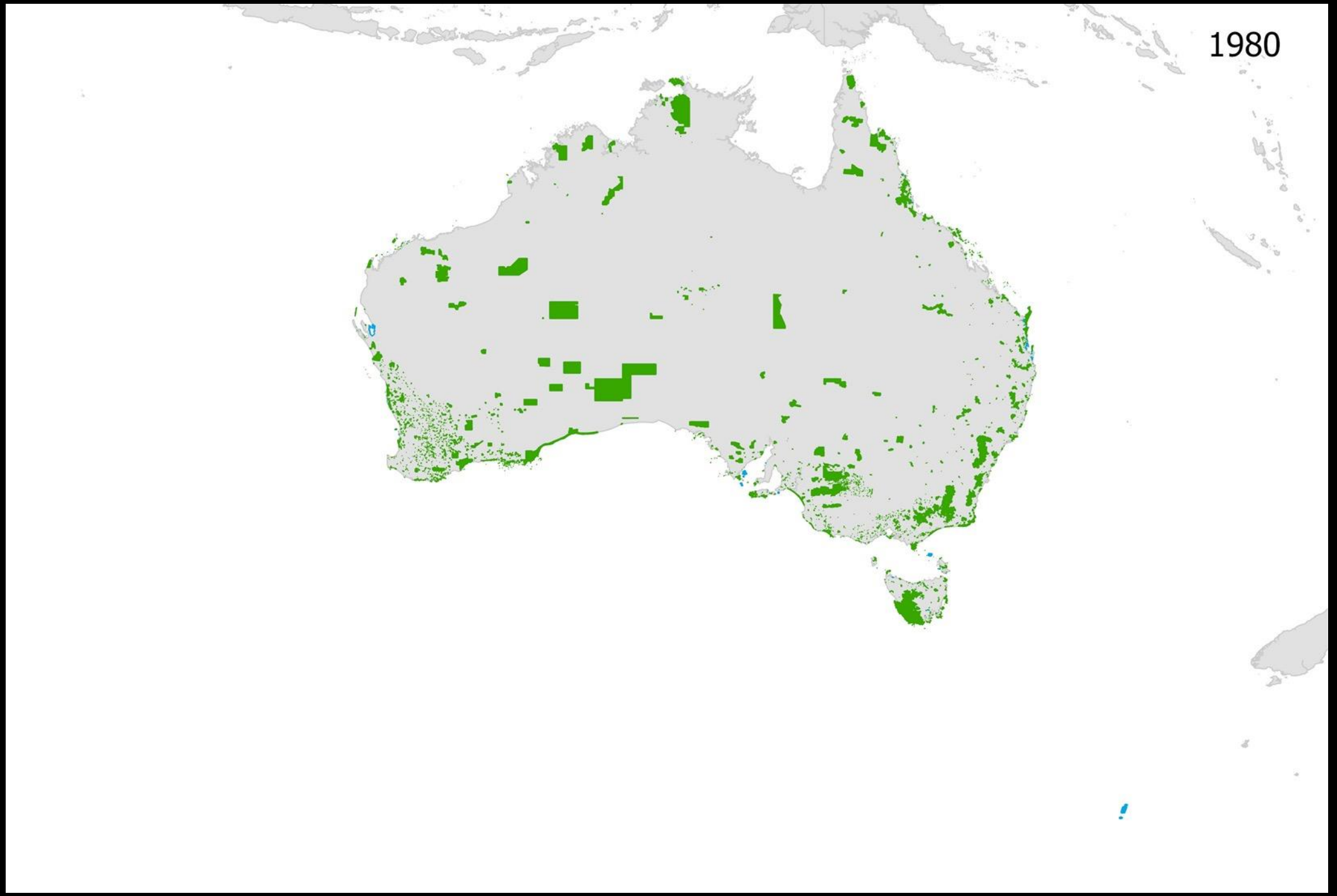
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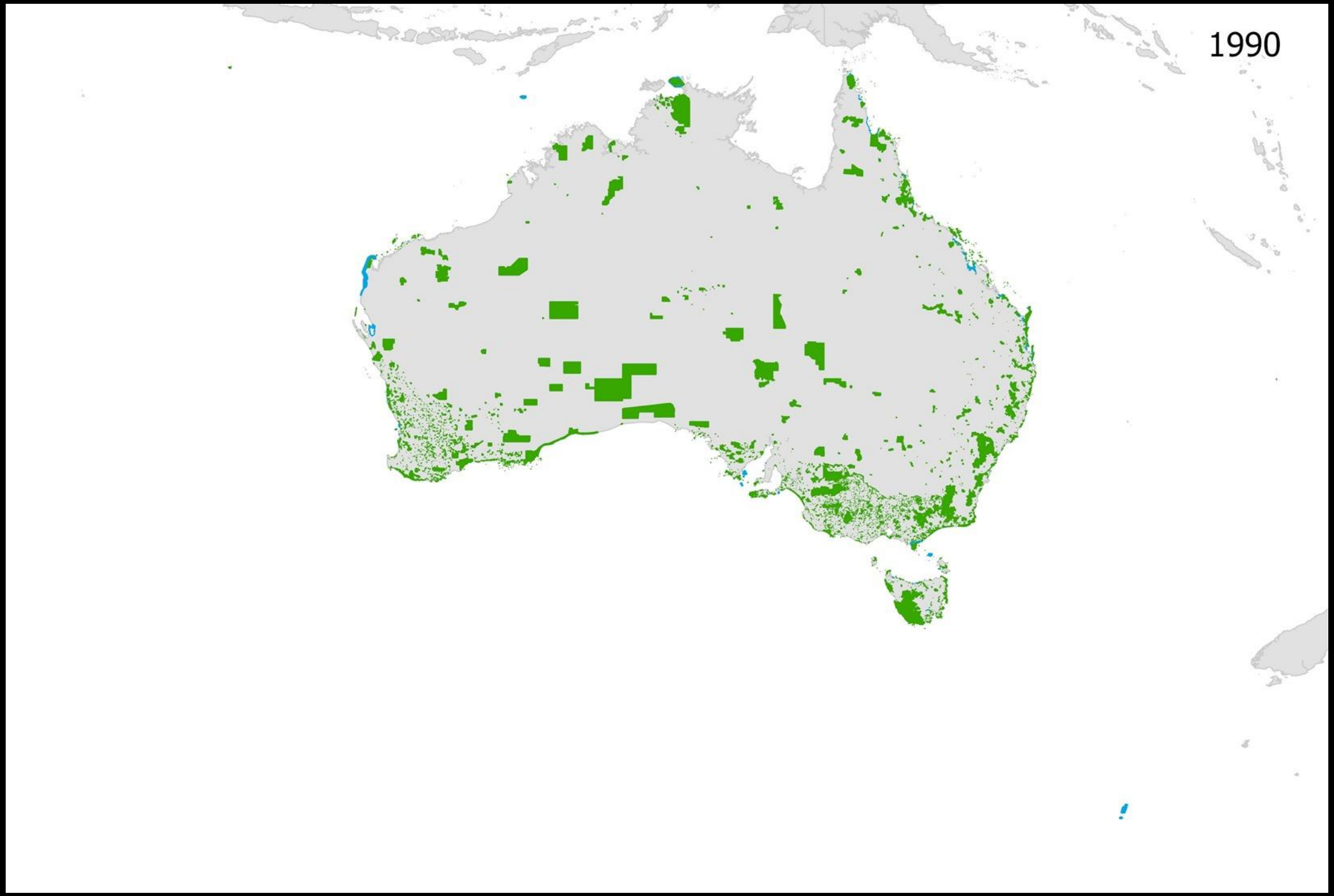
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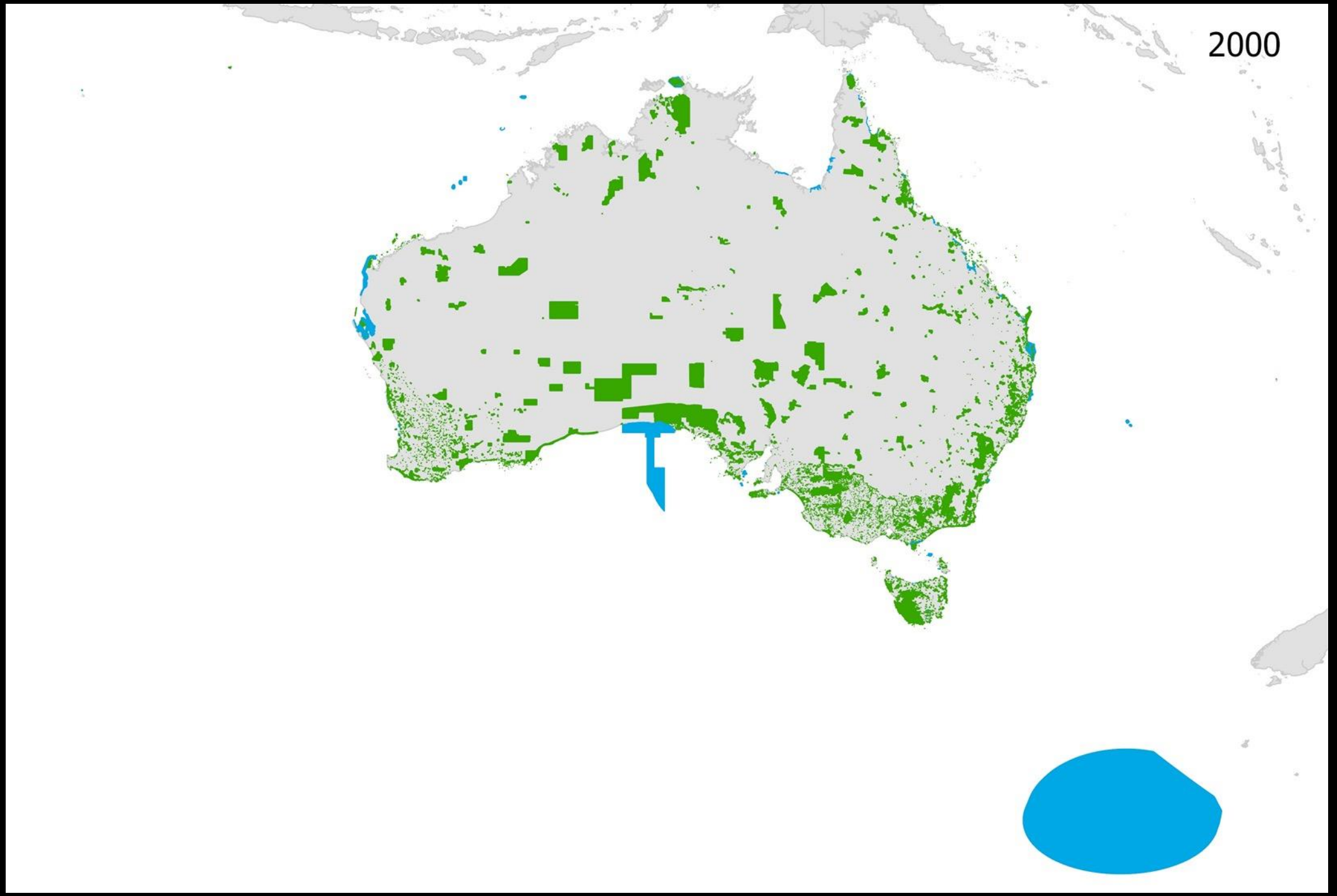
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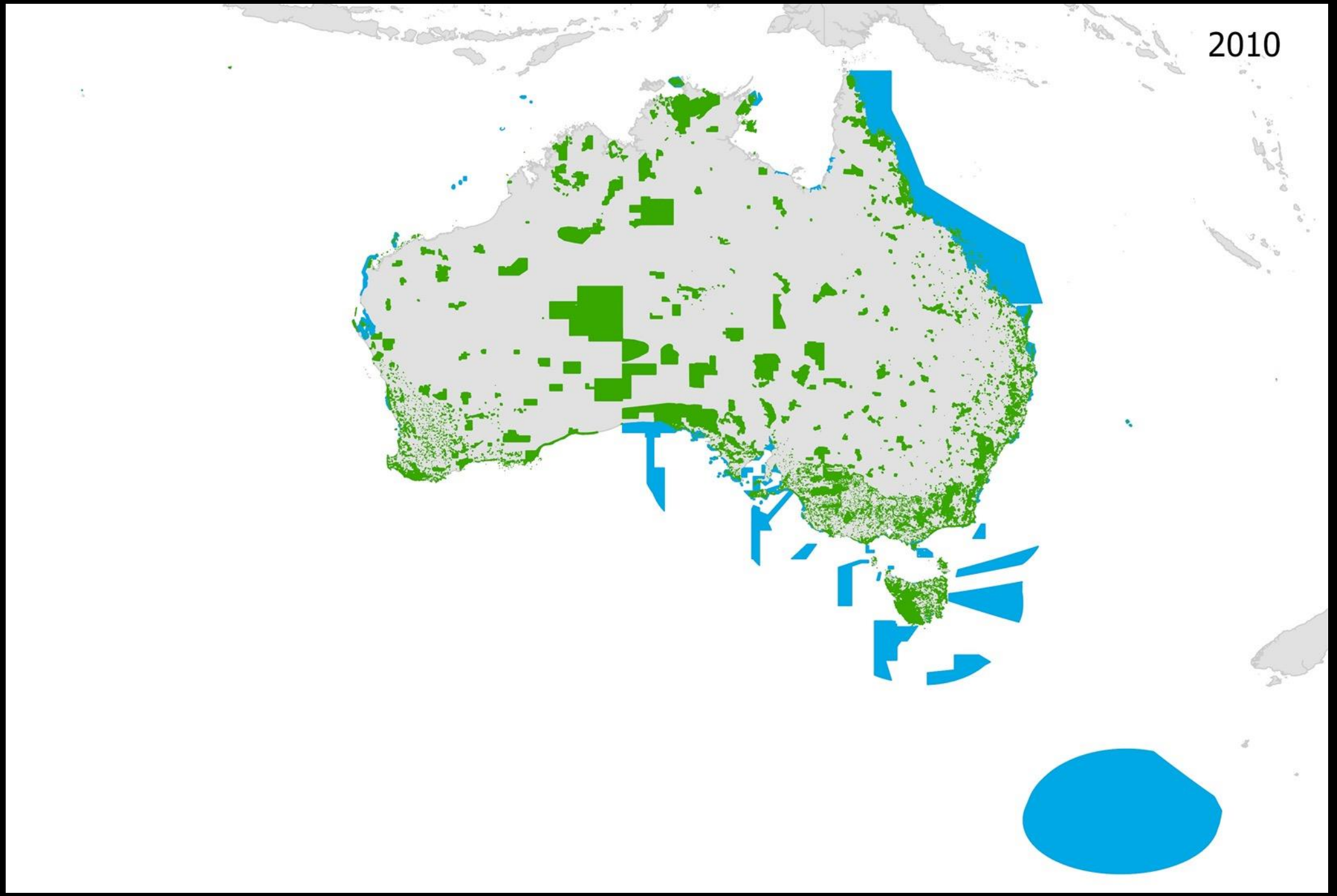
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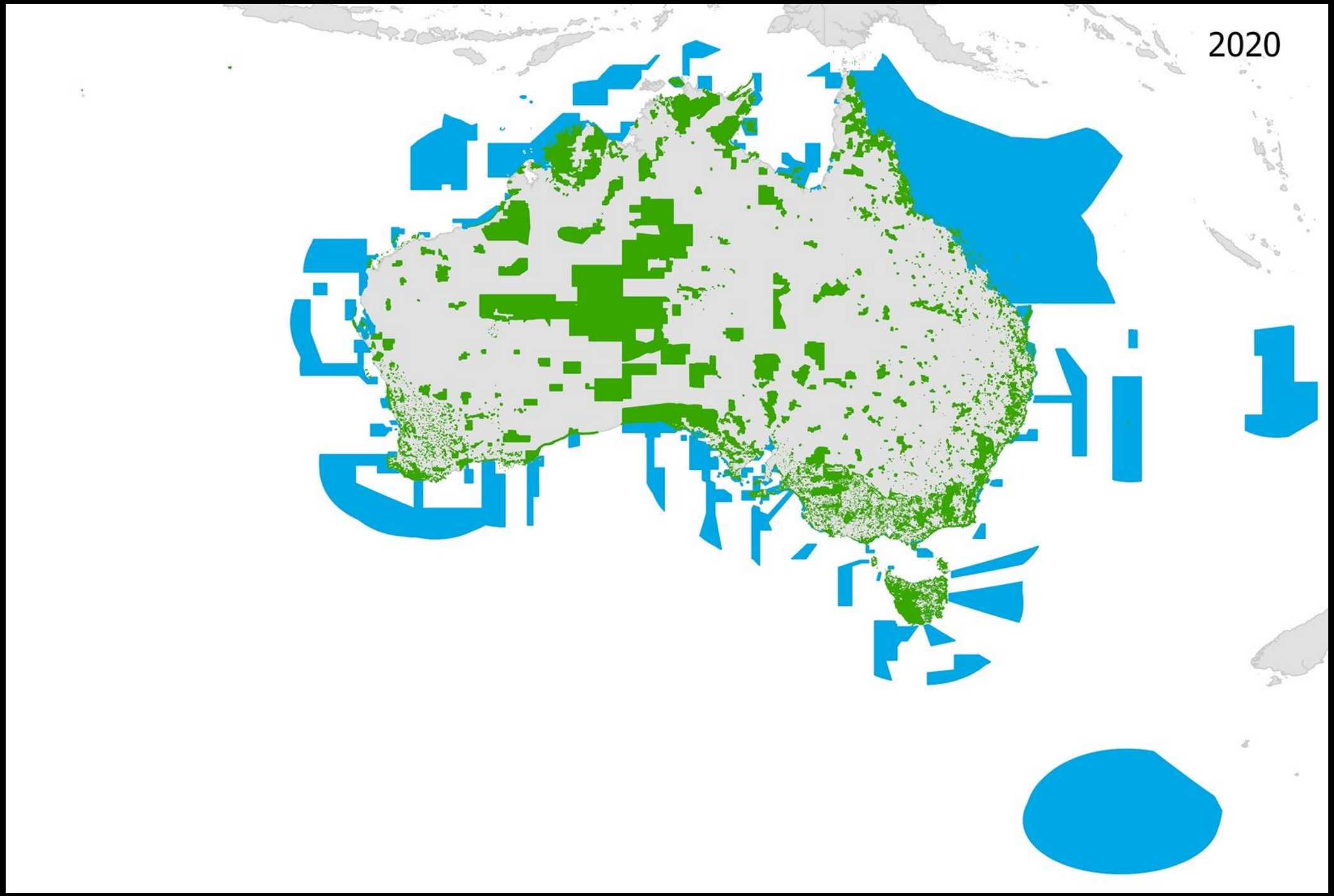
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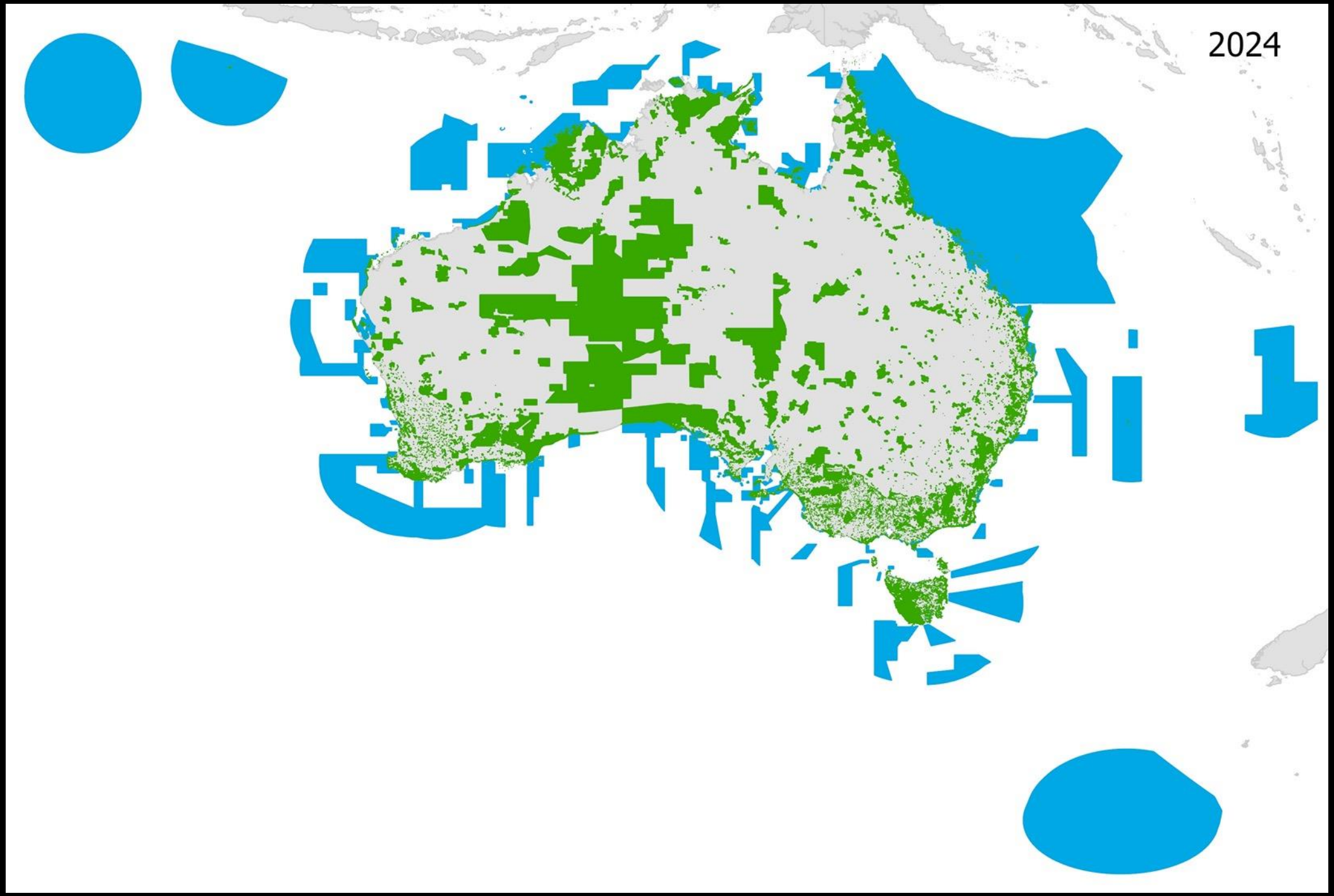
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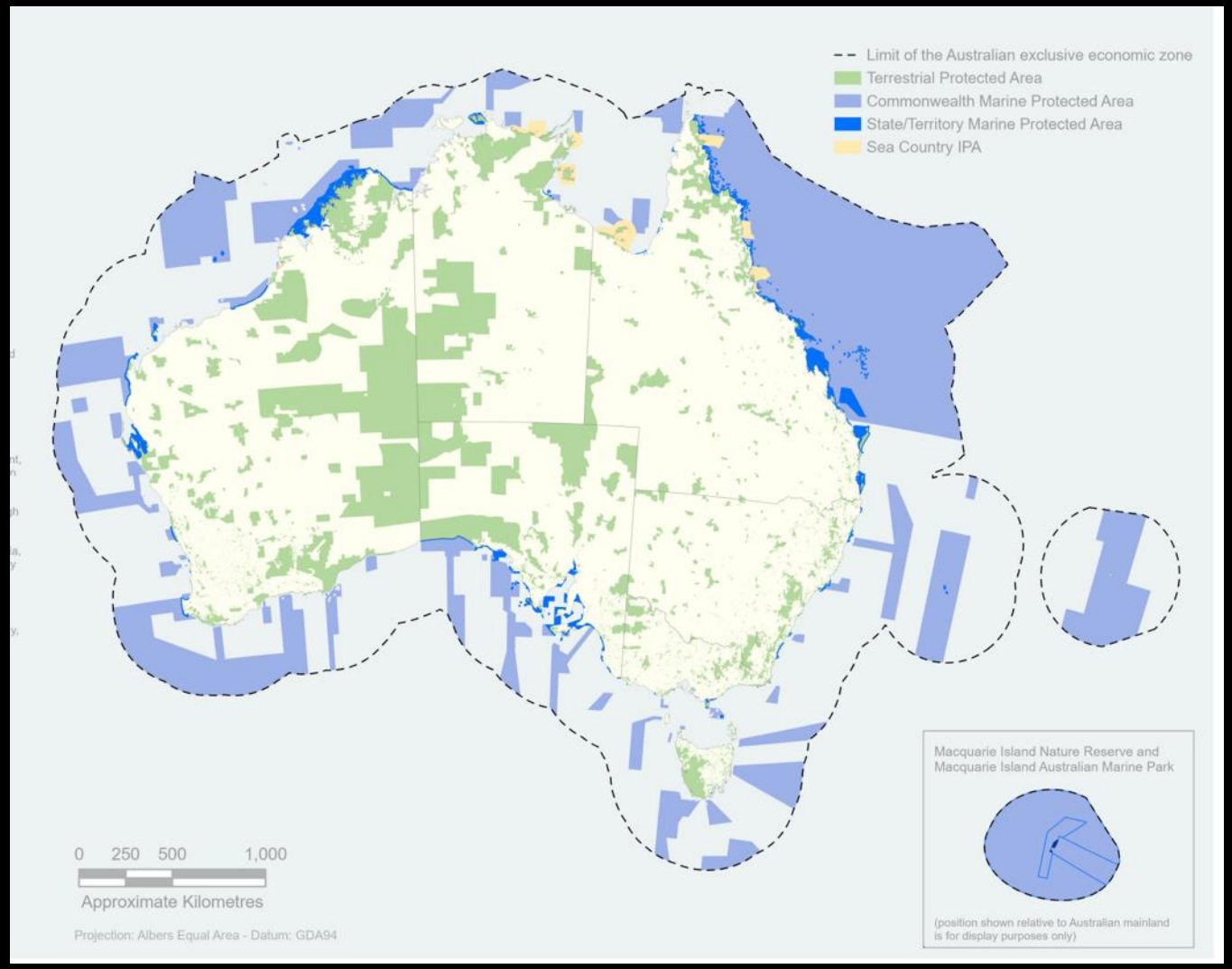


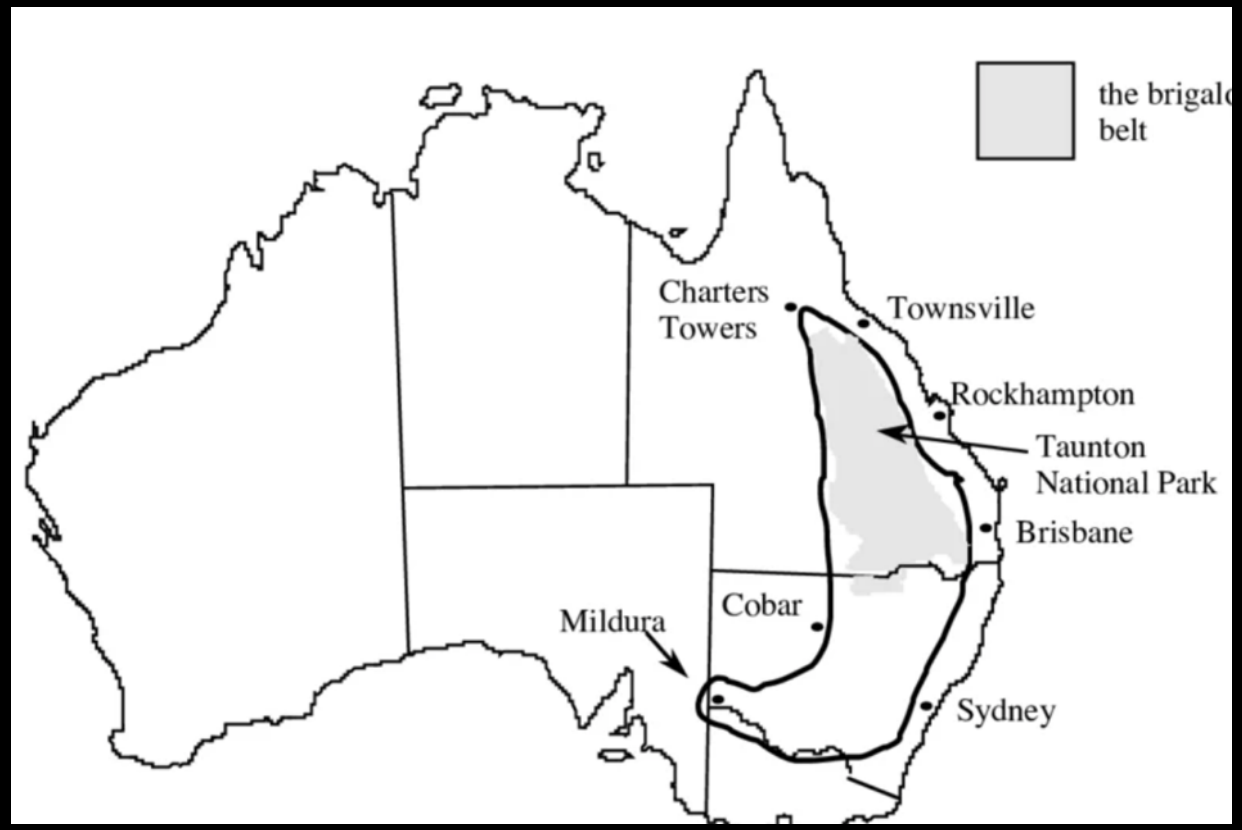
As of early 2026, Australia's National Reserve System (NRS) covers over **188 million hectares** of land. This represents ~25% **of the Australian continent**

Australia's marine protected areas cover **4.6 million square kilometres** or **52% of Australian waters**

Australian Government
Department of Climate Change, Energy, the Environment and Water

Some protected areas have played a critical role in securing biodiversity

These are some examples of species found only with the National Reserve System


the brigalo
belt
Charters
Towers
Townsville
Rockhampton
Taunton
National Park
Brisbane
Cobar
Mildura
Sydney

Fisher, 1999

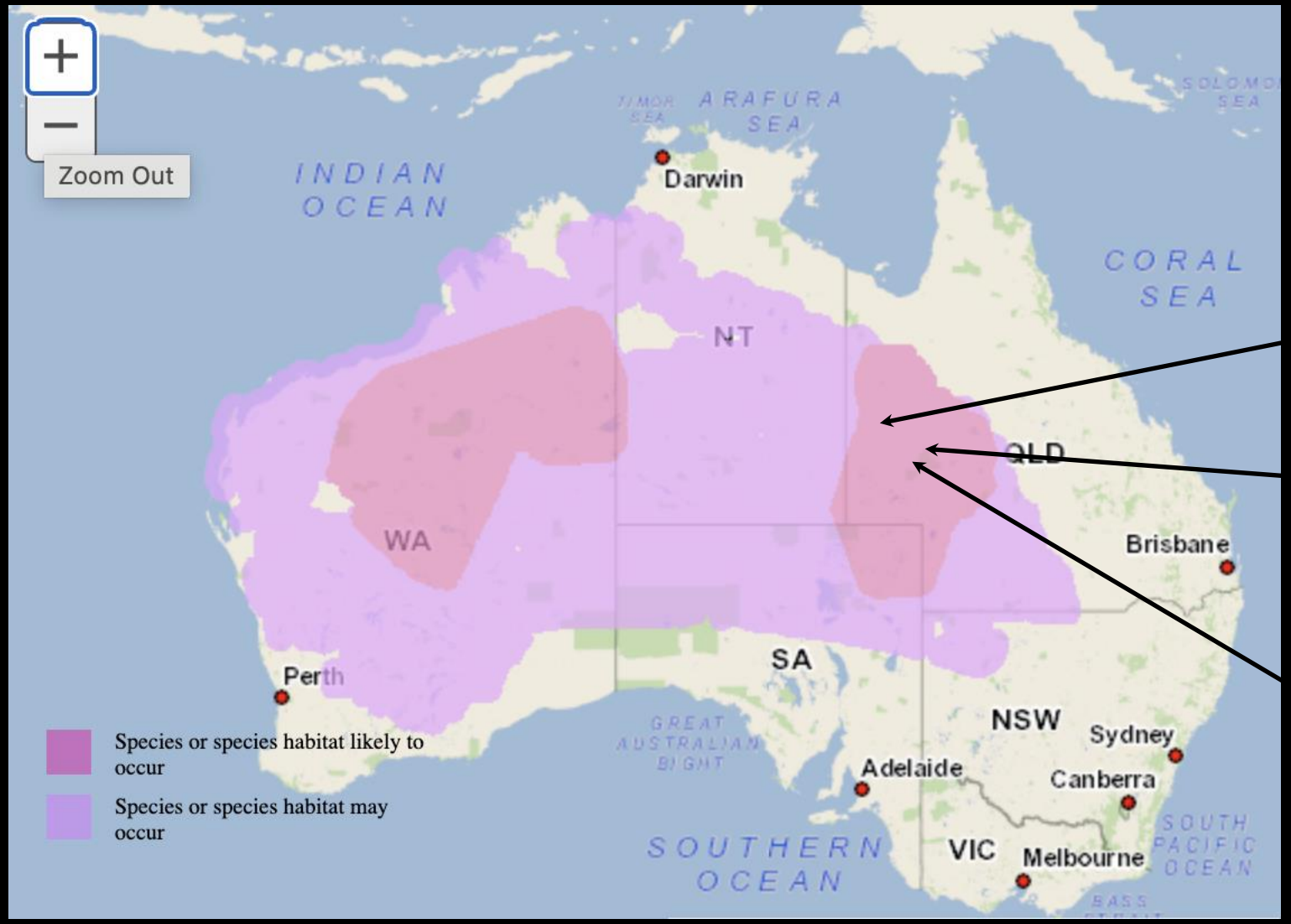

Photo: Steve Murphy

The Night Parrot is a wonderful conservation success story

Photo credit: Nicholas Leseberg

BUSH HERITAGE
AUSTRALIA

Bush Heritage purchased Pullen Pullen Special Wildlife Reserve in 2016




Tweets in the night, a flash of green: is this our most elusive bird?

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BUSH HERITAGE AUSTRALIA

How do we find more Night Parrots?

What do they sound like and what is their calling behaviour?

200,000 hours of calls analyzed

Proactively sharing the knowledge with Indigenous Ranger groups and other stakeholders

Biodiversity and Conservation (2023) 32:2869–2891
https://doi.org/10.1007/s10531-023-02633-8

ORIGINAL RESEARCH

Establishing effective conservation management strategies for a poorly known endangered species: a case study using Australia's Night Parrot (*Pezoporus occidentalis*)

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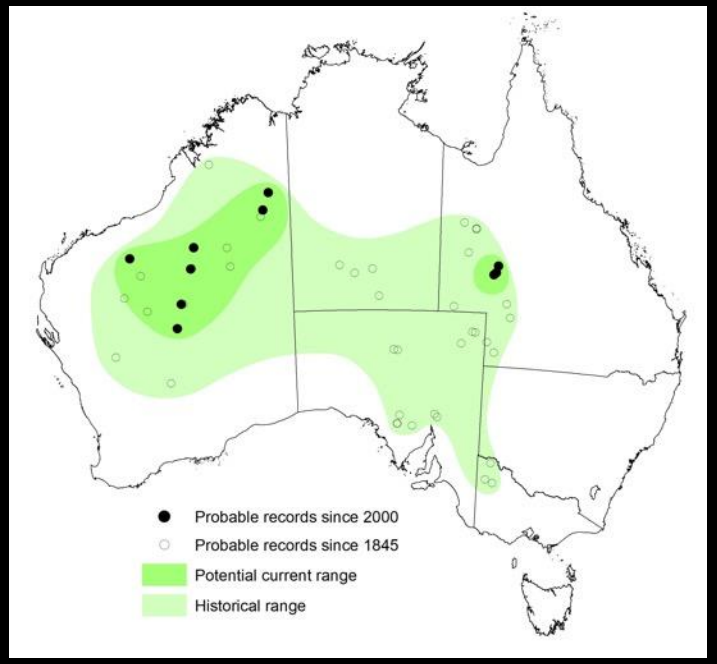
Received: 10 May 2022 / Revised: 12 March 2023 / Accepted: 15 May 2023 / Published online: 20 June 2023

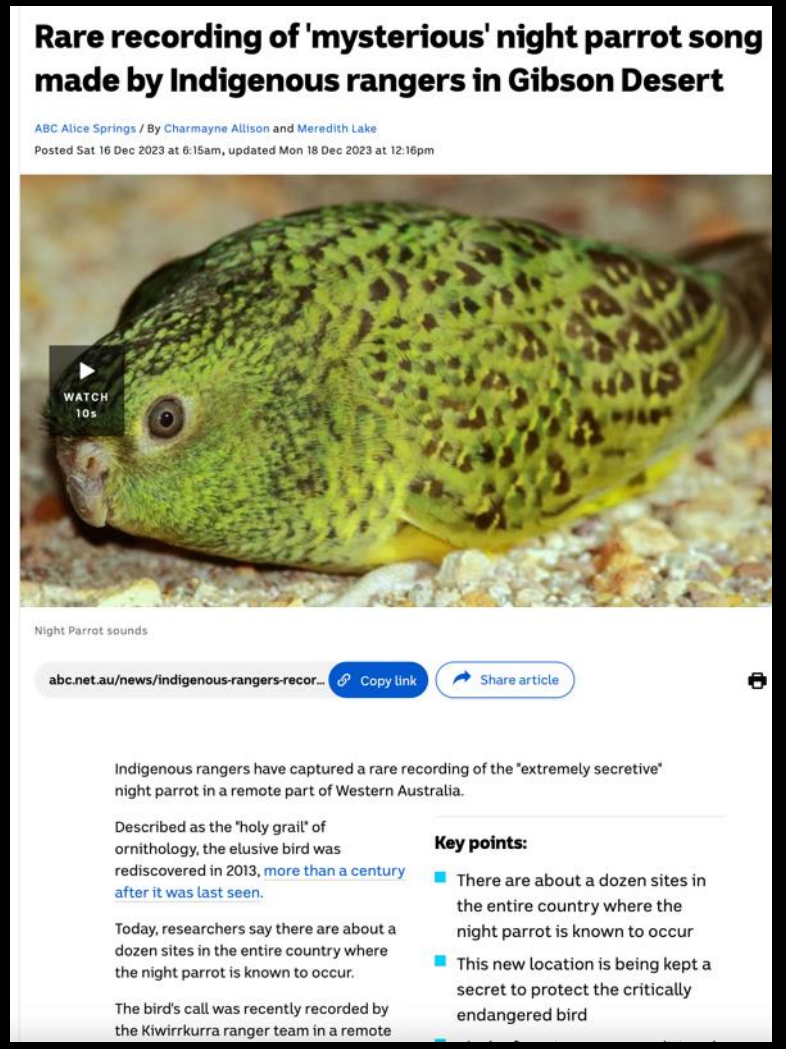
Abstract

An evidence-based approach to the conservation management of a species requires knowledge of that species' status, distribution, ecology, and threats. Coupled with budgets for specific conservation strategies, this knowledge allows prioritisation of funding toward activities that maximise benefit for the species. However, many threatened species are poorly known, and determining which conservation strategies will achieve this is difficult. Such cases require approaches that allow decision-making under uncertainty. Here we used structured expert elicitation to estimate the likely benefit of potential management strategies for the Critically Endangered and, until recently, poorly known Night Parrot (*Pezoporus occidentalis*). Experts considered cat management the single most effective management strategy for the Night Parrot. However, a combination of protecting and actively managing existing intact Night Parrot habitat through management of grazing, controlling feral cats, and managing fire specifically to maintain Night Parrot habitat was thought to result in the greatest conservation gains. The most cost-effective strategies were thought to be fire management to maintain Night Parrot habitat, and intensive cat management using control methods that exploit local knowledge of cat movements and ecology. Protecting and restoring potentially suitable, but degraded, Night Parrot habitat was considered the least effective and least cost-effective strategy. These expert judgements provide an informed starting point for land managers implementing on-ground programs targeting the Night Parrot, and those developing policy aimed at the species' longer-term conservation. As a set of hypotheses, they should be implemented, assessed, and improved within an adaptive management framework that also considers the likely co-benefits of these strategies for other species and ecosystems. The broader methodology is applicable

Photo: Jaana Dielenberg

Four ranger groups have found Night Parrots in Western Australia





Rare recording of 'mysterious' night parrot song made by Indigenous rangers in Gibson Desert

ABC Alice Springs / By Charmayne Allison and Meredith Lake

Posted Sat 16 Dec 2023 at 6:15am, updated Mon 18 Dec 2023 at 12:16pm

Night Parrot sounds

abc.net.au/news/indigenous-rangers-recor... Copy link Share article

Indigenous rangers have captured a rare recording of the "extremely secretive" night parrot in a remote part of Western Australia.

Described as the "holy grail" of ornithology, the elusive bird was rediscovered in 2013, more than a century after it was last seen.

Today, researchers say there are about a dozen sites in the entire country where the night parrot is known to occur.

The bird's call was recently recorded by the Kiwirrkurra ranger team in a remote

Key points:

- There are about a dozen sites in the entire country where the night parrot is known to occur
- This new location is being kept a secret to protect the critically endangered bird


Astrebla
Downs
National
Park

Australia’s protected areas need to work for many reasons.
One is it is a global responsibility. Our nation is one of just 17 mega-biodiverse countries

These nations cover a mere 10% of Earth's surface, but together account for> 70% of its biodiversity.

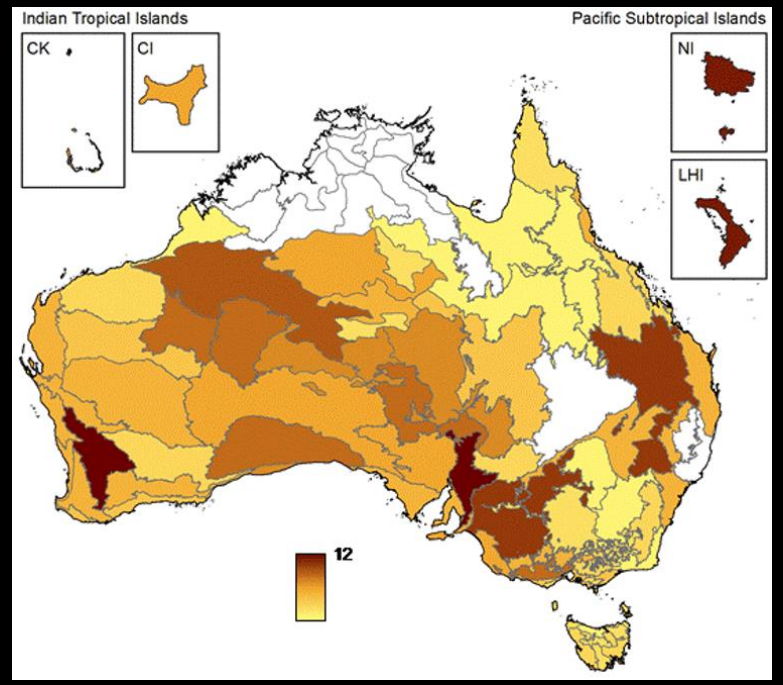
>85% of Australia’s plant, mammal, reptile and amphibian species occur nowhere else on Earth.

Australia is ranked 7th most important of these nations globally!

Australia is ranked 3rd of mega-biodiverse countries at making species go extinct

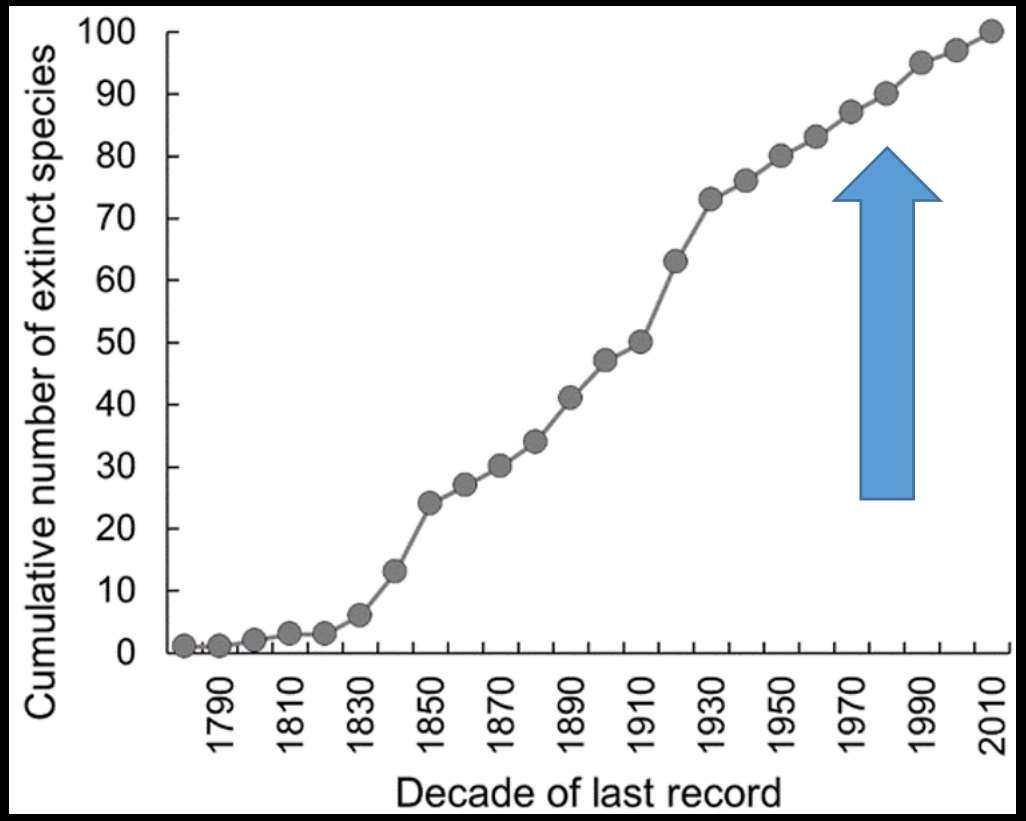
Since 1750, we have reported losing:

- 38 plants
- 1 seaweed species
- 34 mammals (WORLD CHAMPIONS!)
- 10 invertebrates
- 9 birds
- 4 frogs
- 3 reptiles
- 1 fish

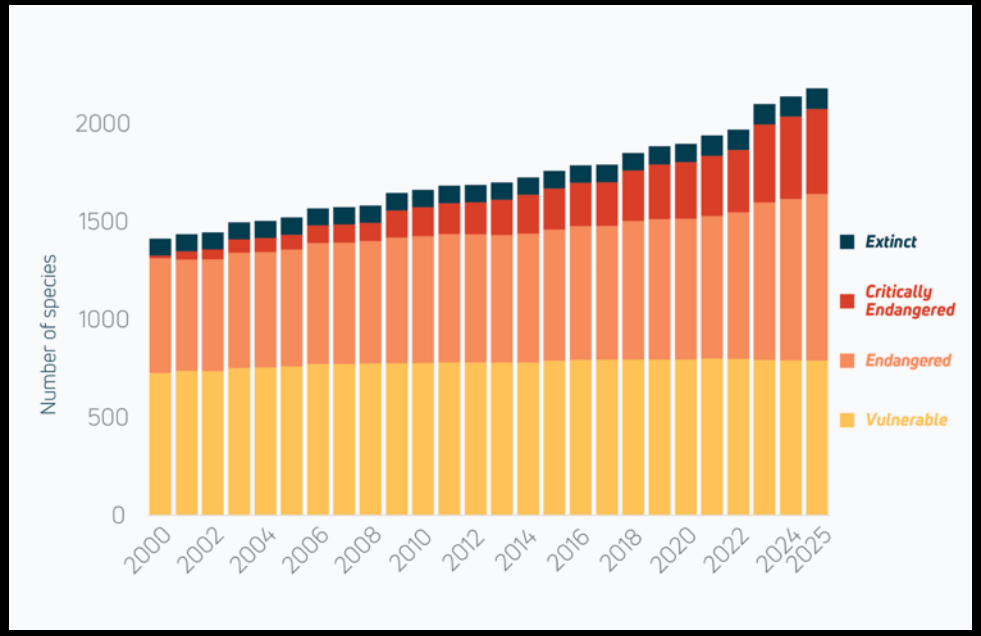


Extinctions have occurred nearly everywhere

Australia's extinction crisis is not something from our distant past



The EPBC Act has 2138 species listed



TERN 2026

These species are on the road to extinction.

Our protected estate must be at the forefront of stopping this extinction crisis

To work:

1. They need to be **well placed**

2. They need to be **large enough**

3. They need to be **well-funded** and **well-managed**

I have been asking **how well placed** our National Reserve System is when it comes to conserving threatened species for nearly two decades

Conservation Biology

Contributed Paper

The Capacity of Australia's Protected-Area System to Represent Threatened Species

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Abstract: *The acquisition or designation of new protected areas is usually based on criteria for representation of different ecosystems or land-cover classes, and it is unclear how well-threatened species are conserved within protected-area networks. Here, we assessed how Australia's terrestrial protected-area system (89 million ha, 11.6% of the continent) overlaps with the geographic distributions of threatened species and compared this overlap against a model that randomly placed protected areas across the continent and a spatially efficient model that placed protected areas across the continent to maximize threatened species' representation within the protected-area estate. We defined the minimum area needed to conserve each species on the basis of the species' range size. We found that although the current configuration of protected areas met targets for representation of a given percentage of species' ranges better than a random selection of areas, 166 (12.6%) threatened species occurred entirely outside protected areas and target levels of protection were met for only 259 (19.6%) species. Critically endangered species were among those with the least protection; 12 (21.1%) species occurred entirely outside protected areas. Reptiles and plants were the most poorly represented taxonomic groups, and amphibians the best represented. Spatial prioritization analyses revealed that an efficient protected-area system of the same size as the current protected-area system (11.6% of the area of Australia) could meet representation targets for 1272 (93.3%) threatened species. Moreover, the results of these prioritization analyses showed that by protecting 17.8% of Australia, all threatened species could reach target levels of representation, assuming all current protected areas are retained. Although this amount of area theoretically could be protected, existing land uses and the finite resources available for conservation mean land acquisition may not be possible or even effective for the recovery of threatened species. The optimal use of resources must balance acquisition of new protected areas, where processes that threaten native species are mitigated by the change in ownership or on-ground management jurisdiction, and management of threatened species inside and outside the existing protected-area system.*

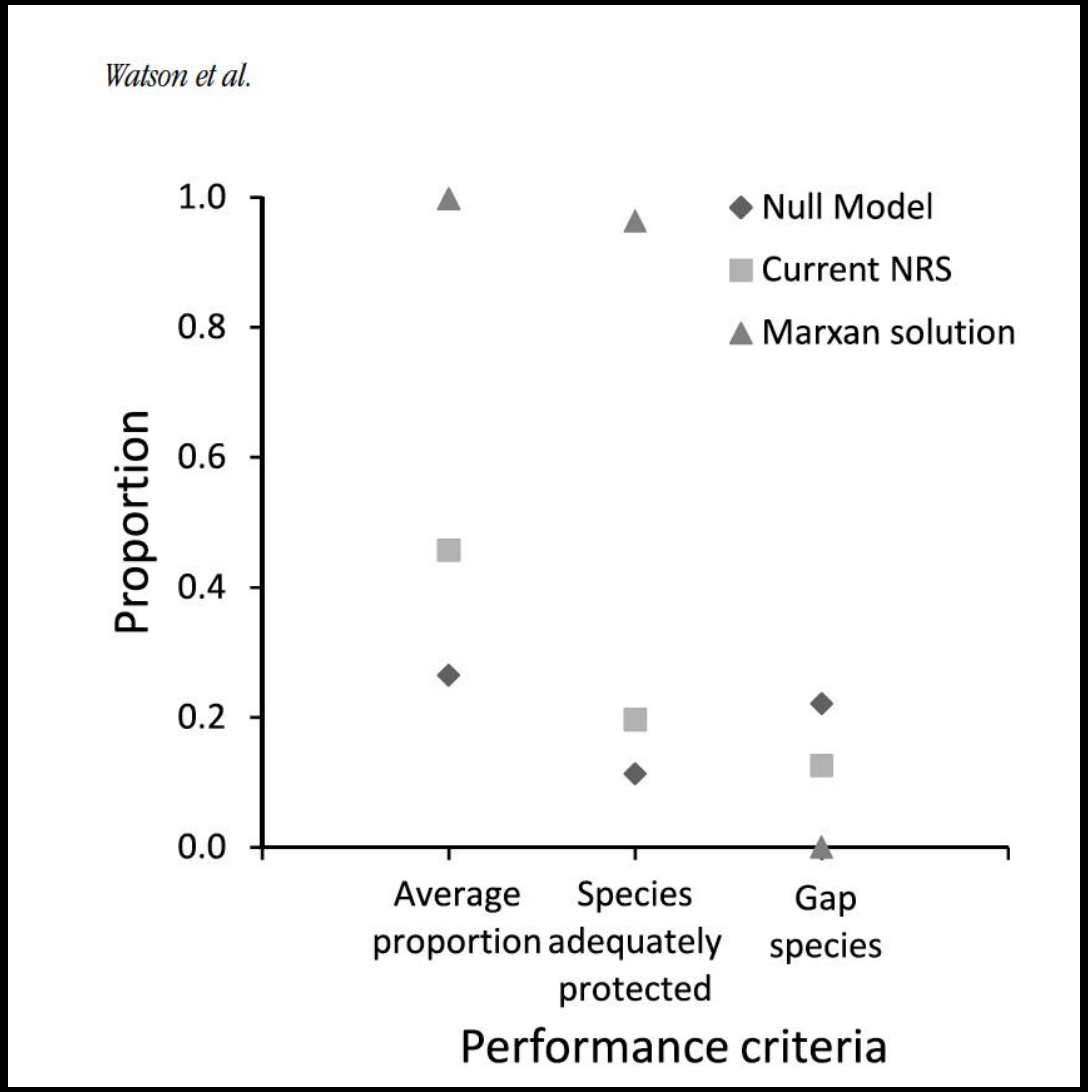
Keywords: adequacy, Australia, protected areas, range size, representation, spatial prioritization, threatened species

La Capacidad del Sistema de Áreas Protegidas de Australia para Representar Especies Amenazadas

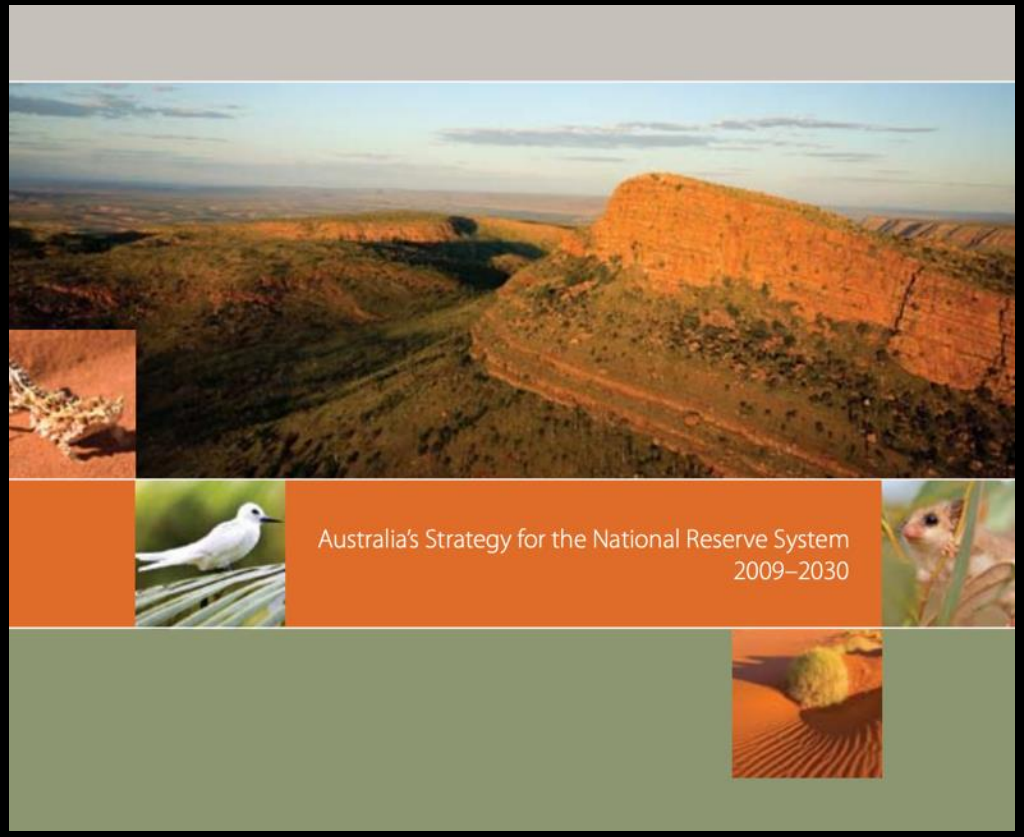
Resumen: *La adquisición o designación de áreas protegidas nuevas generalmente se basa en criterios para la representación de diferentes ecosistemas o clases de cobertura de suelo, y no es claro que tan bien son conservadas las especies amenazadas en el interior de las redes de áreas protegidas. Aquí evaluamos como se traslapa el sistema de áreas protegidas terrestres de Australia (89 millones ha, 11.6% del continente) con*

[email james.jamesvation@gmail.com
Paper submitted February 16, 2010; revised manuscript accepted June 11, 2010.

In 2010, we were not doing very well



In 2010 there was a big push for a better reserve system …..priorities for biodiversity conservation…

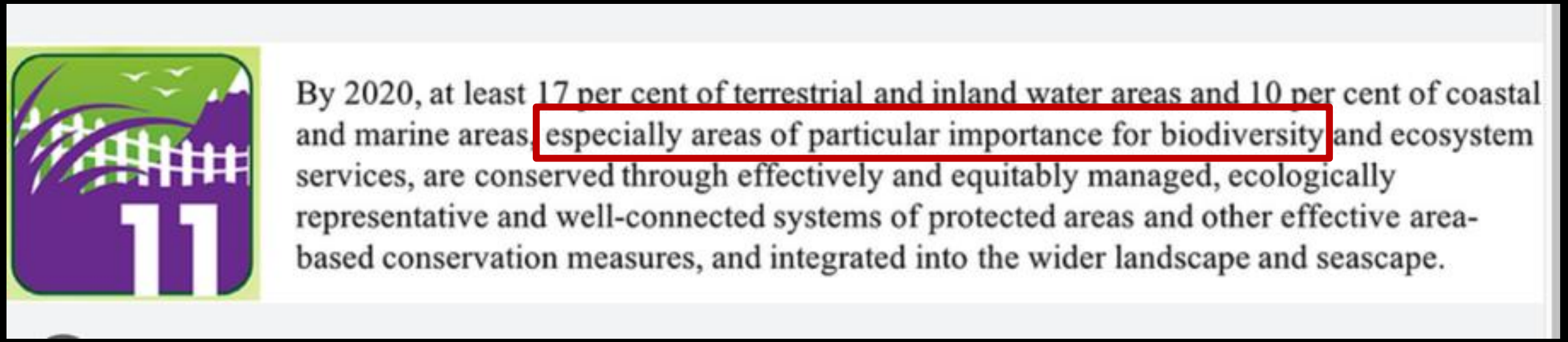


2. PROTECTED AREA DESIGN AND SELECTION

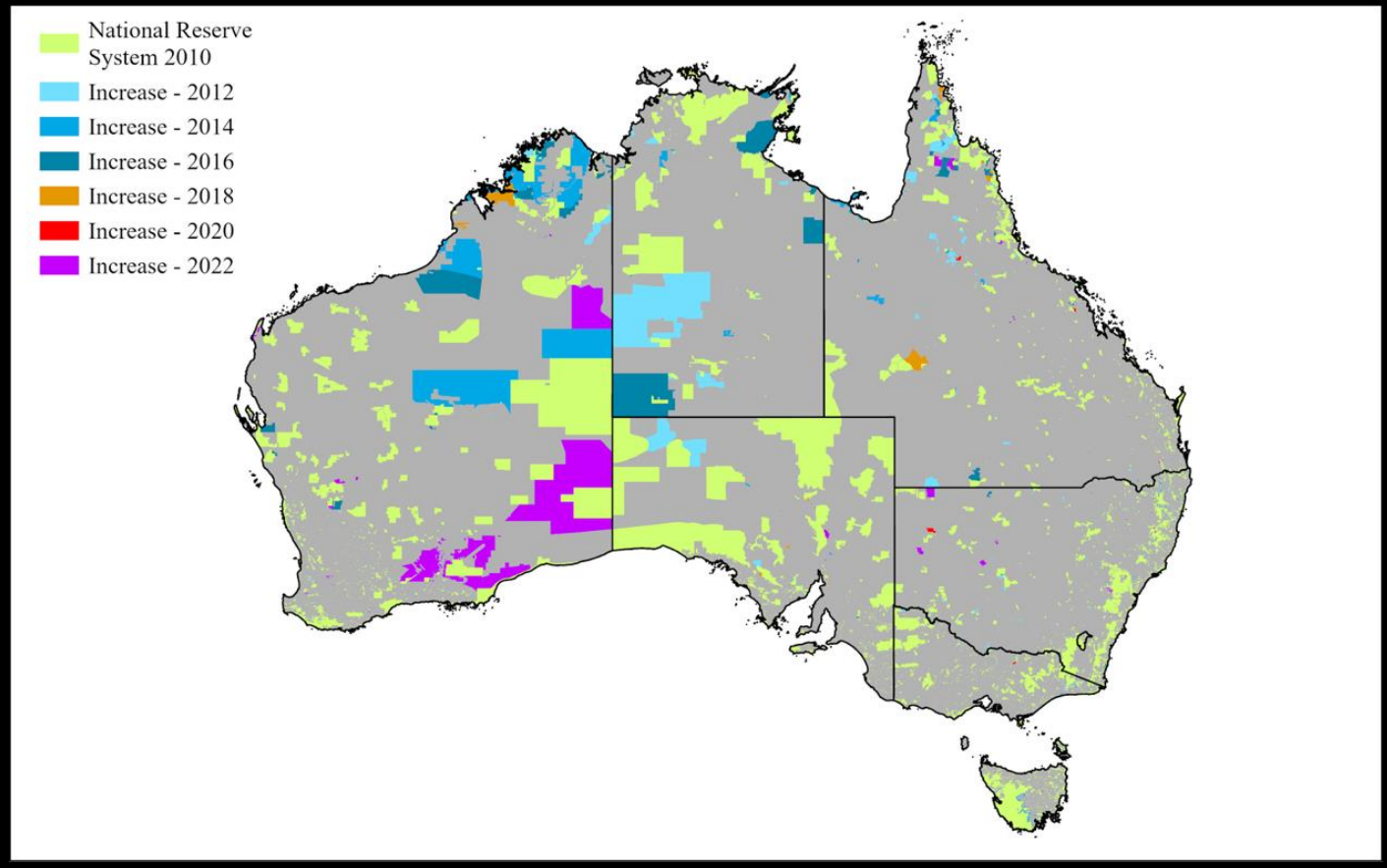
Key direction: Improved design and selection to ensure National Reserve System assets and services:

- match priorities for biodiversity conservation and associated ecosystem services and cultural values
- meet comprehensive, adequacy and representative criteria
- provide the core lands for landscape-scale conservation to enhance ecosystem resilience and connectivity.

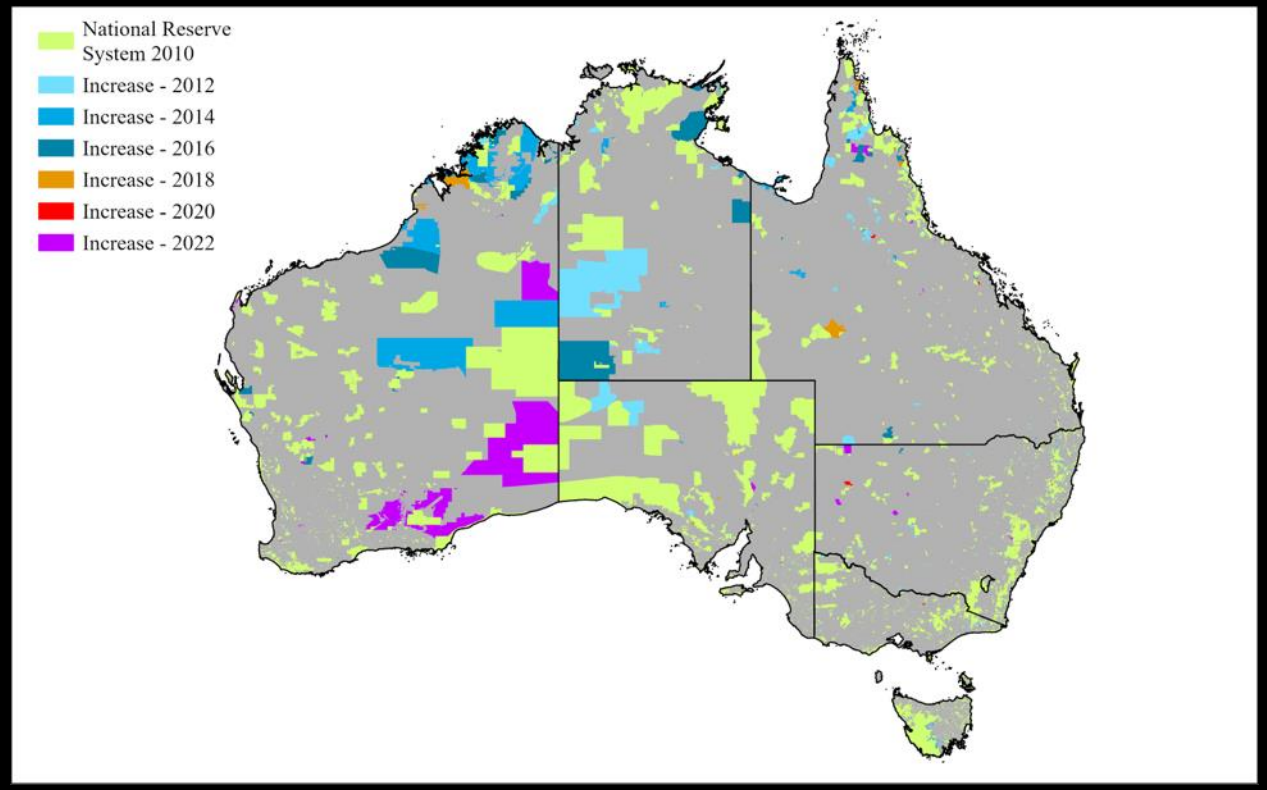
Convention on Biological Diversity Aichi Target 11



Between 2010 - 2022, the number of protected areas in Australia increased from 11,776 to 14,782, resulting in an area expansion of 736,940 km².
This growth expanded the extent of protection from 12.8% to 22.3% of the nation's land and freshwater environments



How well did Australia do in better representing threatened species?



The majority (88.4%; n= 1,274) of the 1,434 threatened species had some portion of their mapped range within the NRS in 2022

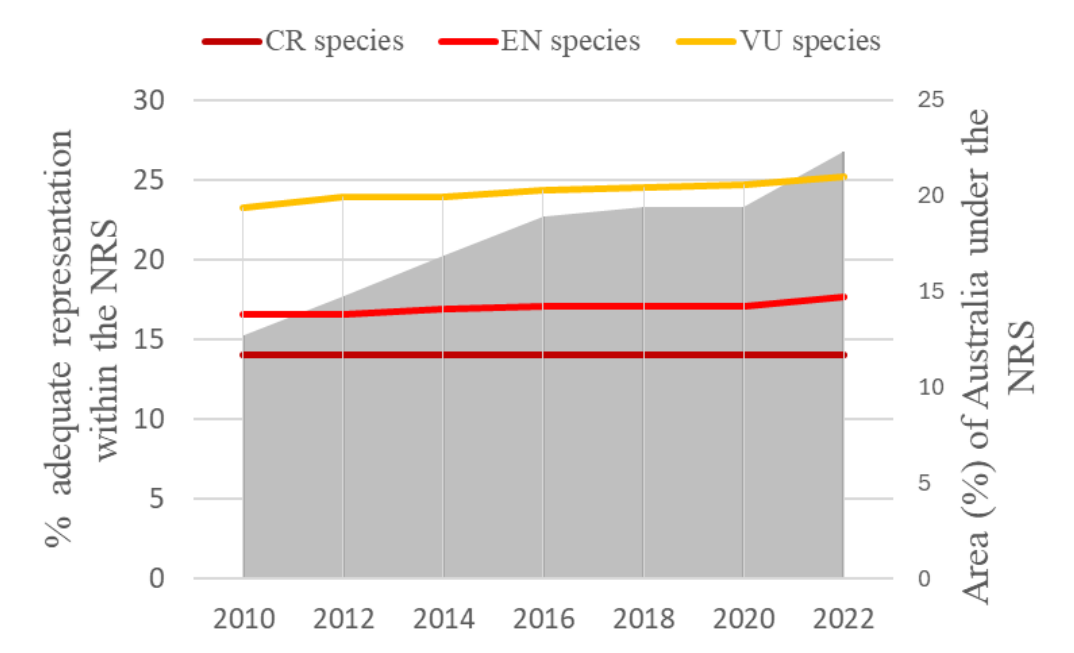
Hibbertia circinata

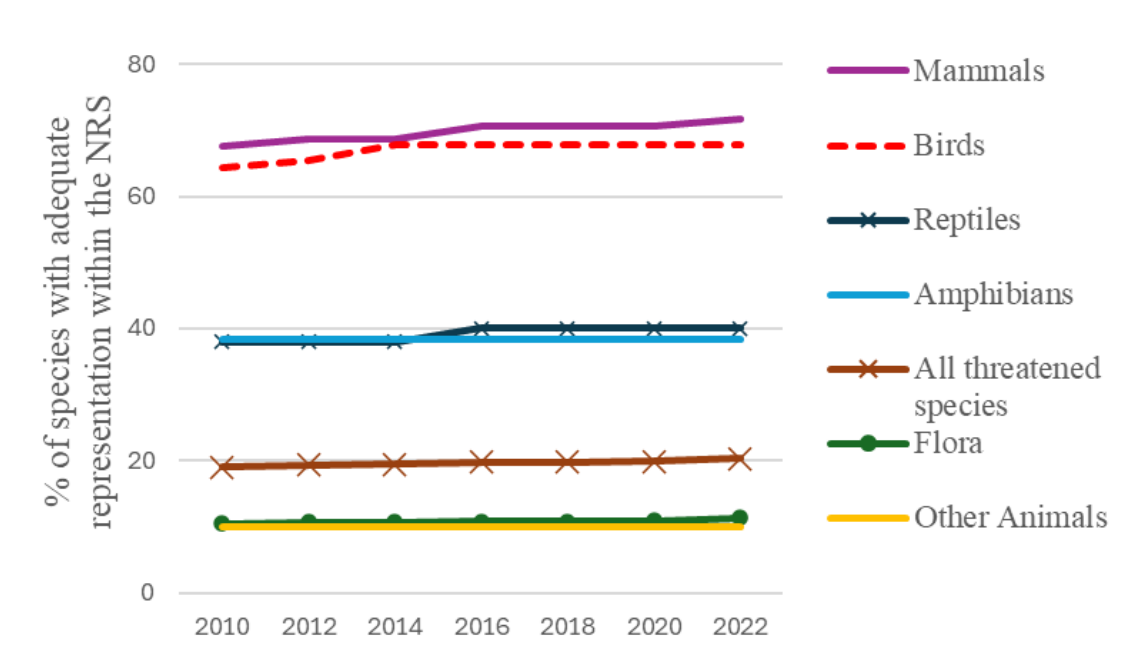
70%

50%

But there was an increase of just 1.9% more species represented than (86.5%; n=1,241) in 2010.

And the median threatened species range in the NRS **increased from 20.5% to 23.3%** between 2010 and 2022.

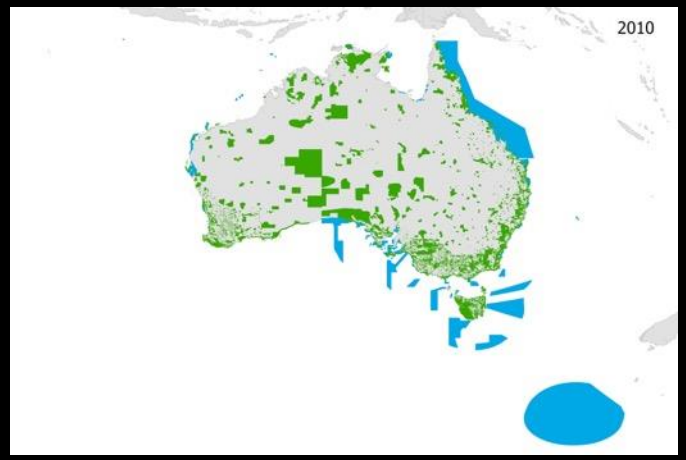


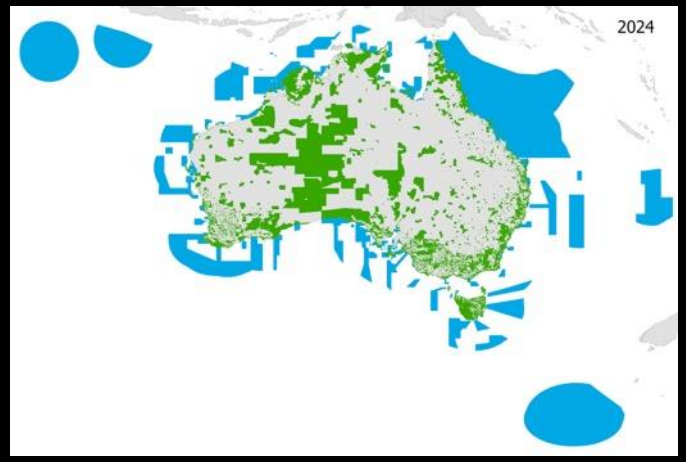


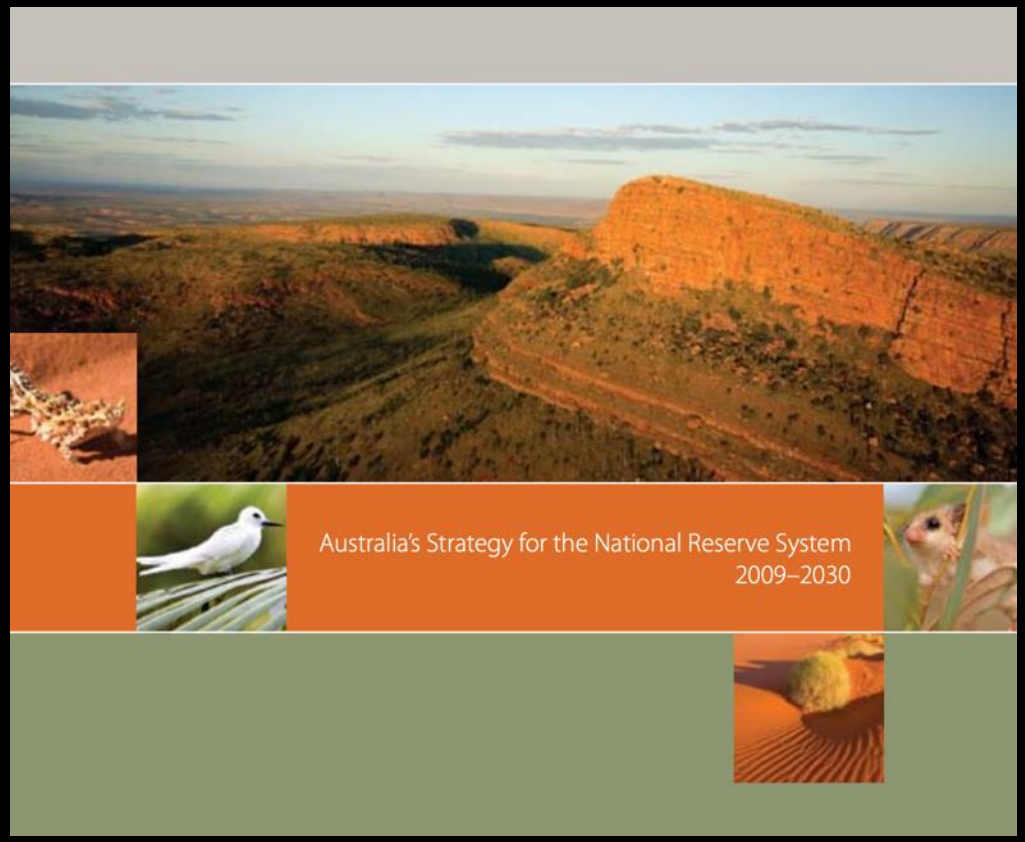
160 species are still considered ‘Gap Species’ - no formal coverage in the NRS as of 2022.

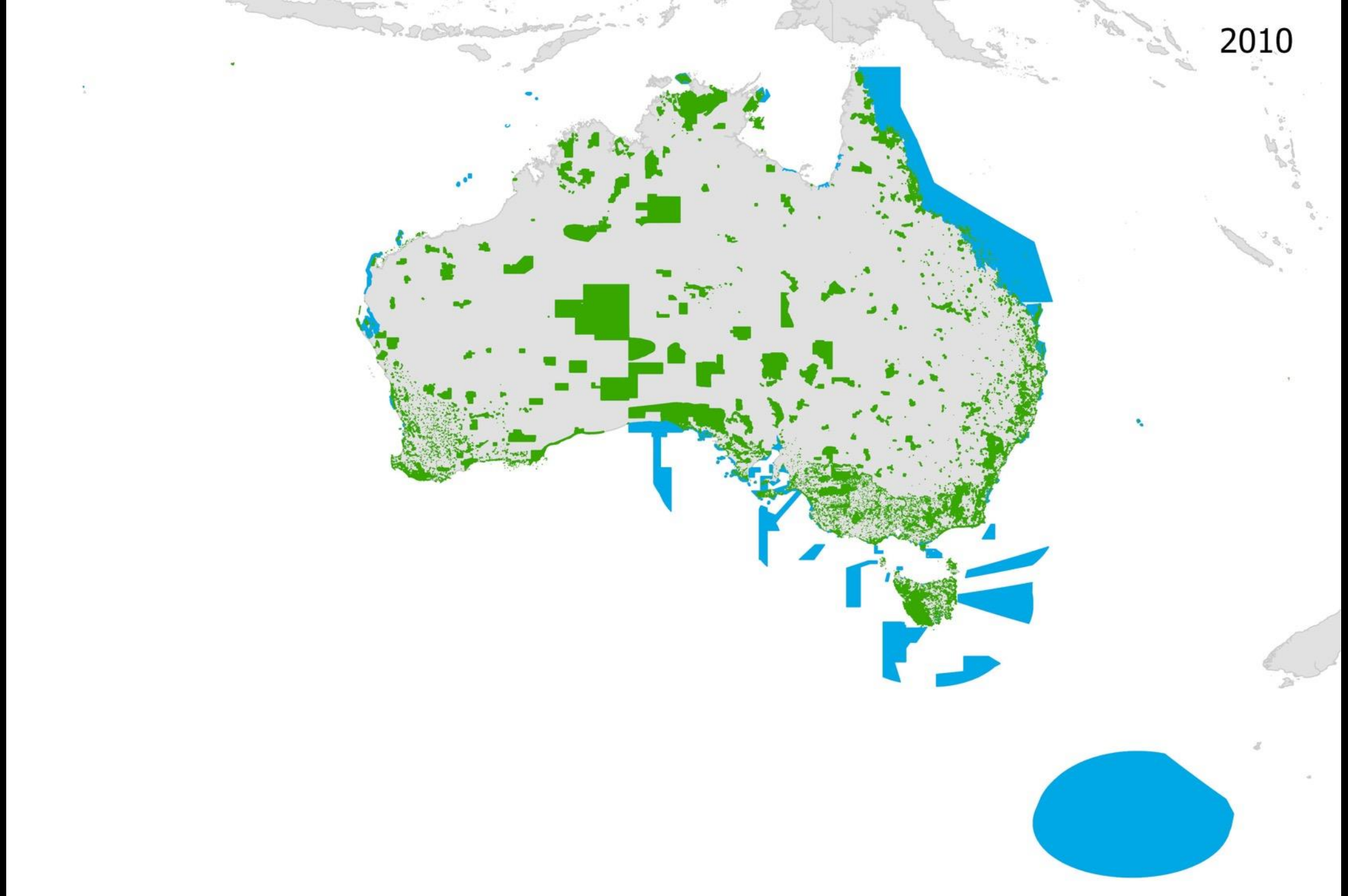
This includes 40 Critically Endangered species

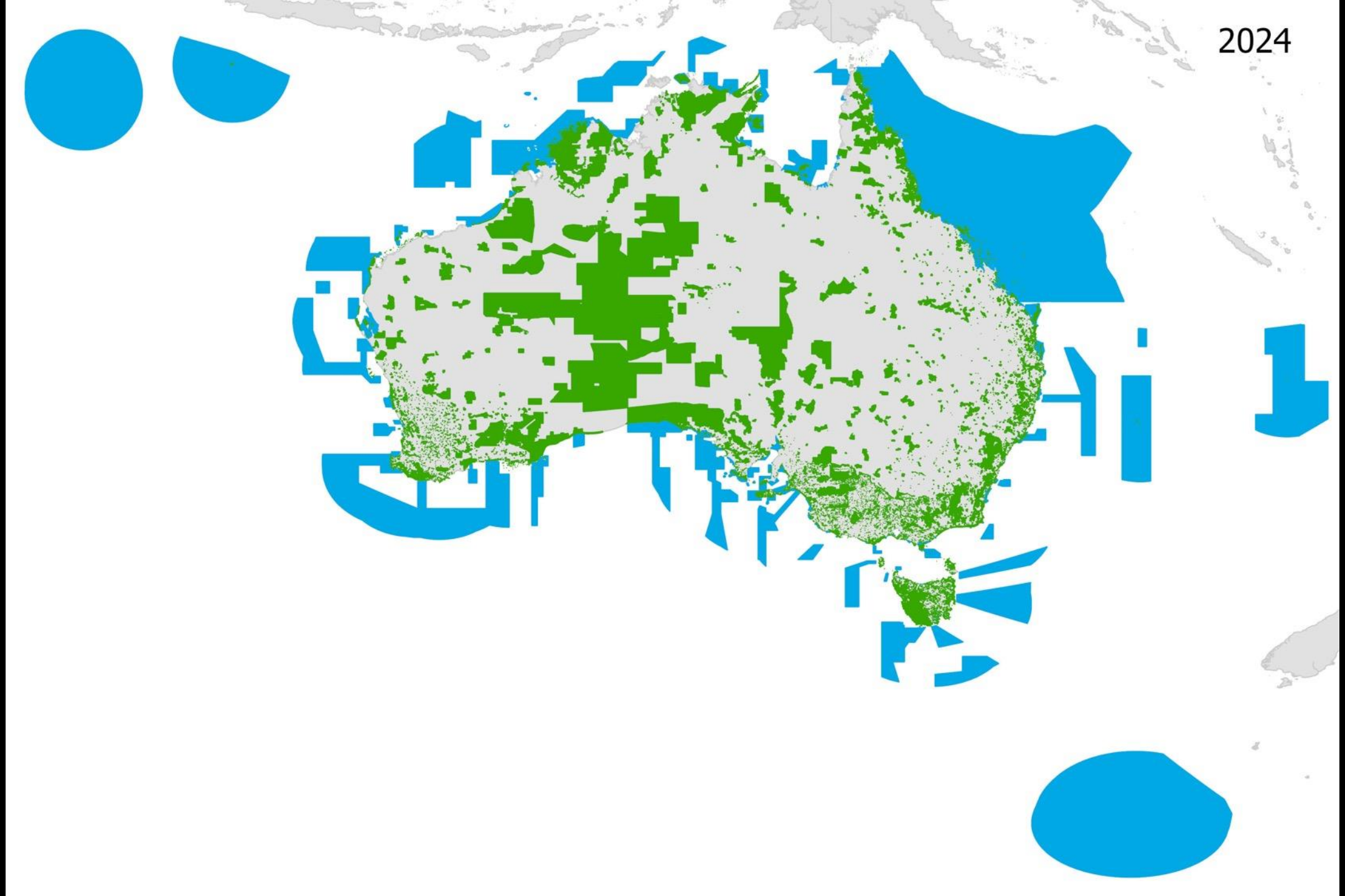
But how can this be happening? There was an almost doubling of the estate and the NRS strategy targeted important biodiversity areas



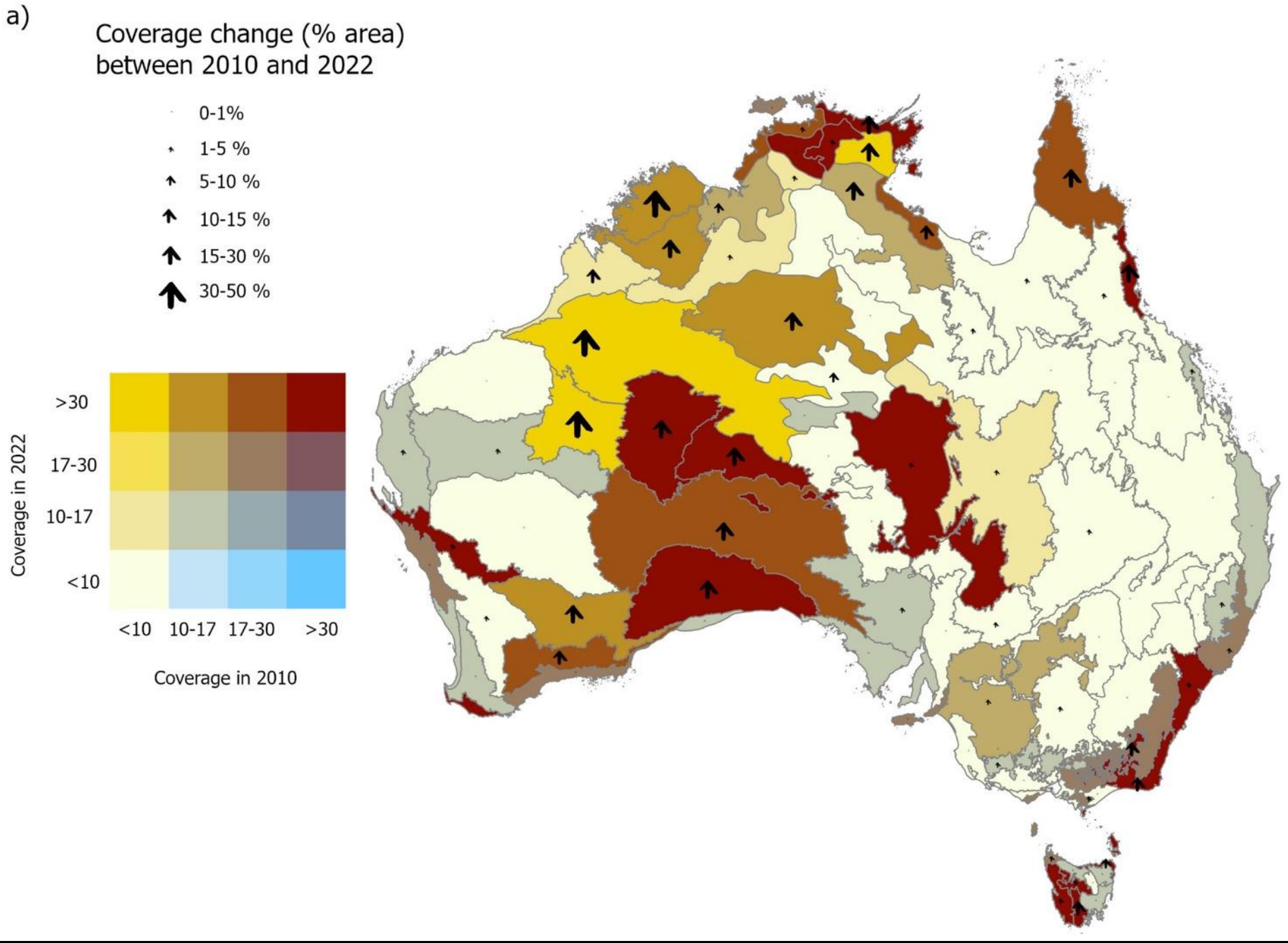


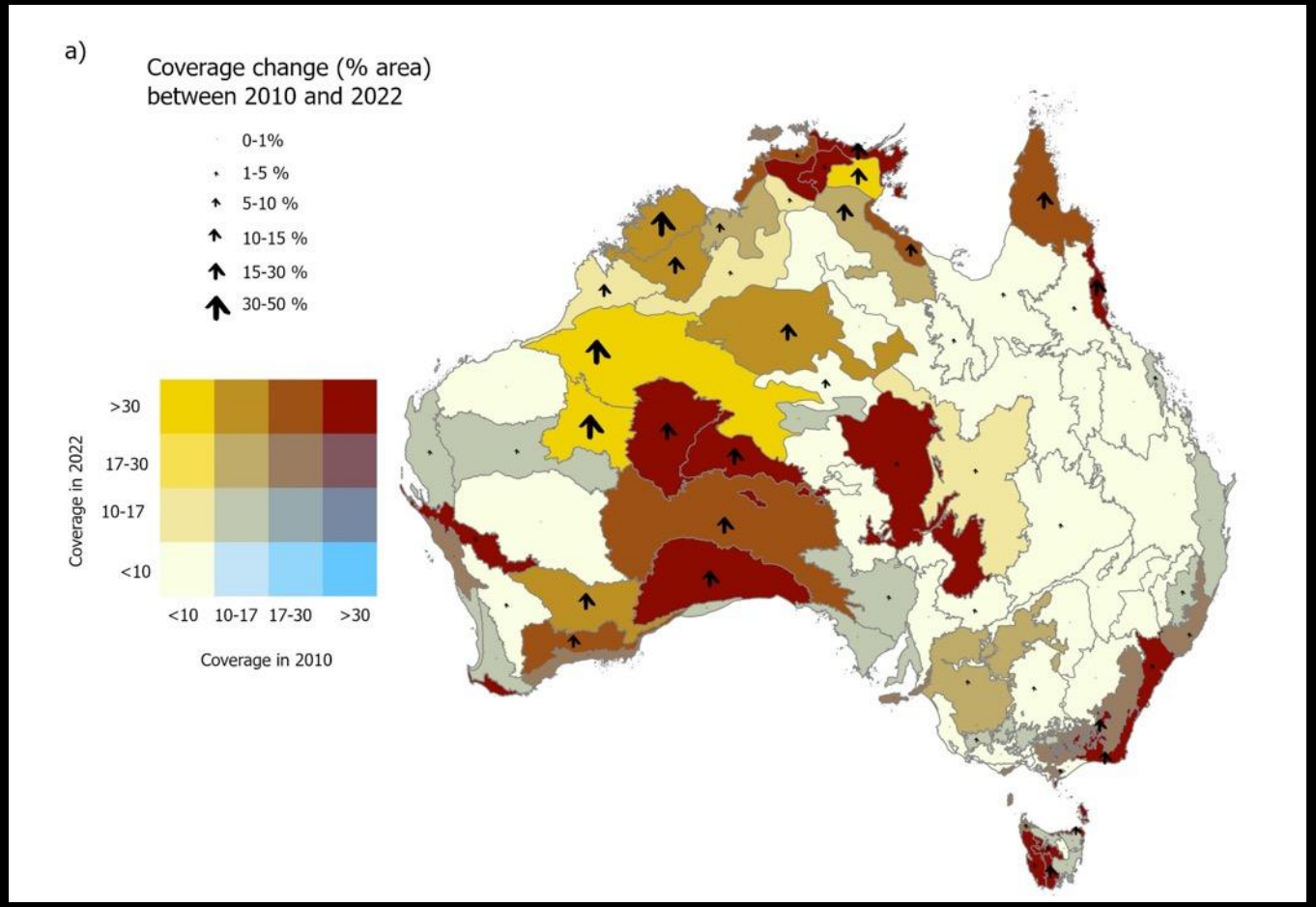


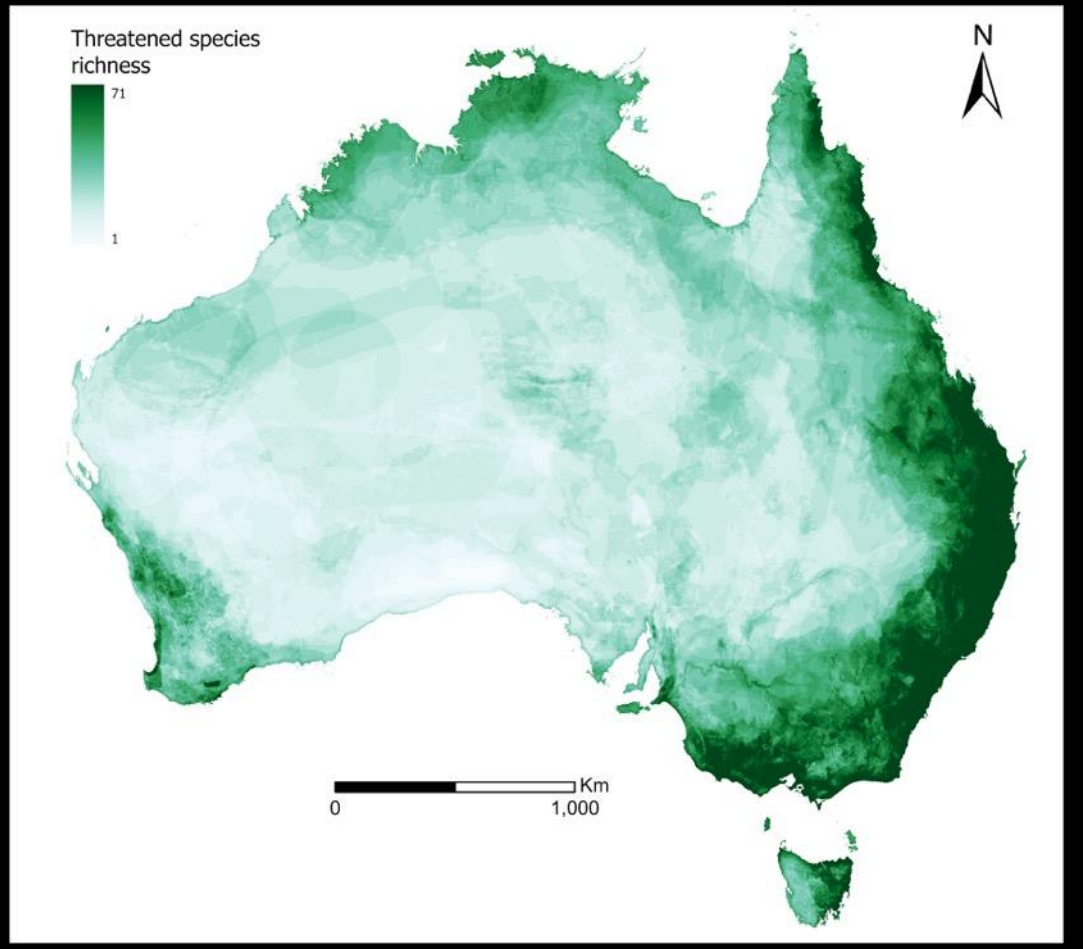

2010


2024

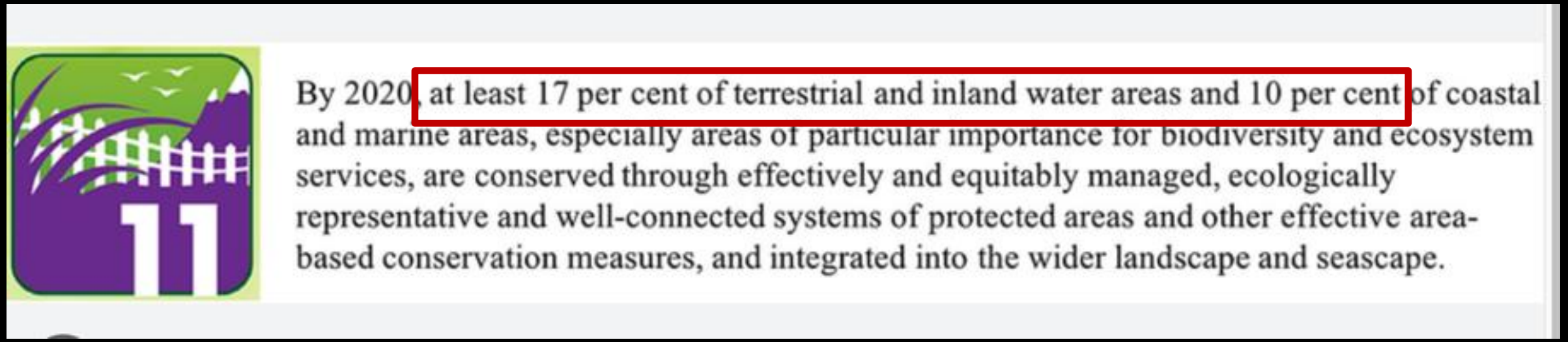
a)


Coverage change (% area)
between 2010 and 2022
0-1%
1-5 %
5-10 %
10-15 %
15-30 %
30-50 %
Coverage in 2022
>30
17-30
10-17
<10
<10
10-17
17-30
>30
Coverage in 2010


a)
Coverage change (% area)
between 2010 and 2022
0-1%
1-5 %
5-10 %
10-15 %
15-30 %
30-50 %
Coverage in 2022
>30
17-30
10-17
<10
<10 10-17 17-30 >30
Coverage in 2010


Threatened species
richness
71
1
N
Km
0
1,000

We have chased quantity….not quality



I can announce tonight for the first time that Australia, with our latest Indigenous Protected Areas, has just achieved the IUCN goal of 17 per cent

Sydney World's Park Congress 2014

CONTRIBUTED PAPER

Conservation Science and Practice
A Journal of the Society for Conservation Biology
WILEY

Beyond area: Evaluating Australia's contribution to Aichi Target 11 and implications for 30 × 30

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[9]Bush Heritage Australia, Melbourne, Victoria, Australia
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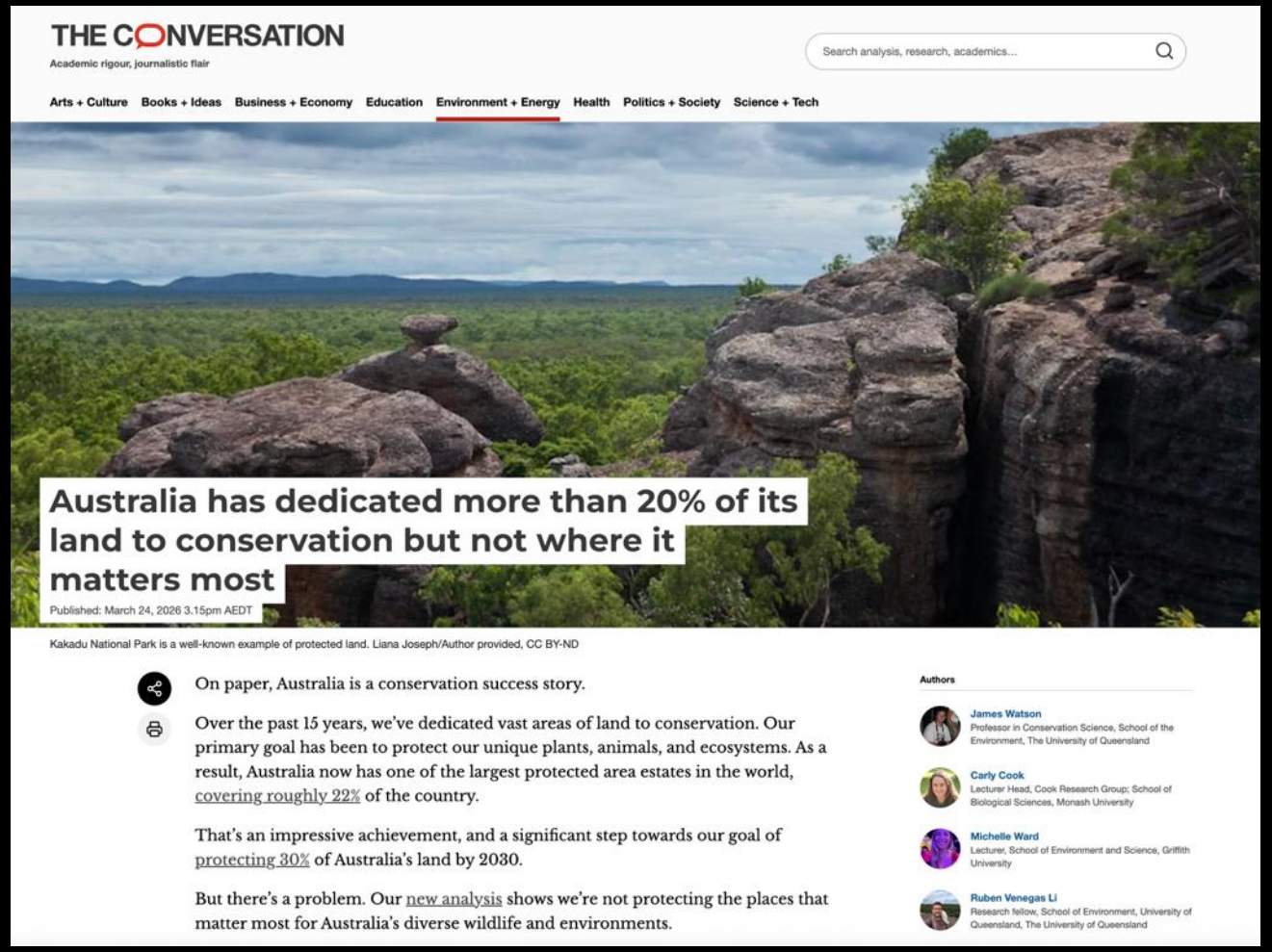
Funding information
Ian Potter Foundation

Abstract

Australia has set commitments to address its biodiversity crisis, with expanding area-based conservation forming a key part of its strategy, aligned with the nation's commitments of "30 × 30" in accordance with the Kunming-Montreal Global Biodiversity Framework (GBF). Moving forward with these goals requires a picture of how far we have come. However, there is limited understanding of how advancements in Australia's National Reserve System (NRS) have contributed to meeting previous global commitments, specifically the 2010–2020 Aichi Targets under the Convention on Biological Diversity. Here, we assess the expansion of Australia's land-based protected area network between 2010 and 2022 and the level of contribution to the biodiversity-focused components of the Aichi protected area target (Target 11) including (i) "areas of particular importance for biodiversity"; (ii) "areas of particular importance for ecosystem services"; (iii) "ecologically representative"; and (iv) "well-connected." We found the total area protected increased substantially during the

https://conbio.onlinelibrary.wiley.com/doi/epdf/10.1111/csp2.70256



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Australia has dedicated more than 20% of its land to conservation but not where it matters most

Published: March 24, 2026 3.15pm AEDT

Kakadu National Park is a well-known example of protected land. Liana Joseph/Author provided, CC BY-ND

On paper, Australia is a conservation success story.

Over the past 15 years, we've dedicated vast areas of land to conservation. Our primary goal has been to protect our unique plants, animals, and ecosystems. As a result, Australia now has one of the largest protected area estates in the world, covering roughly 22% of the country.

That's an impressive achievement, and a significant step towards our goal of protecting 30% of Australia's land by 2030.

But there's a problem. Our new analysis shows we're not protecting the places that matter most for Australia's diverse wildlife and environments.

Authors

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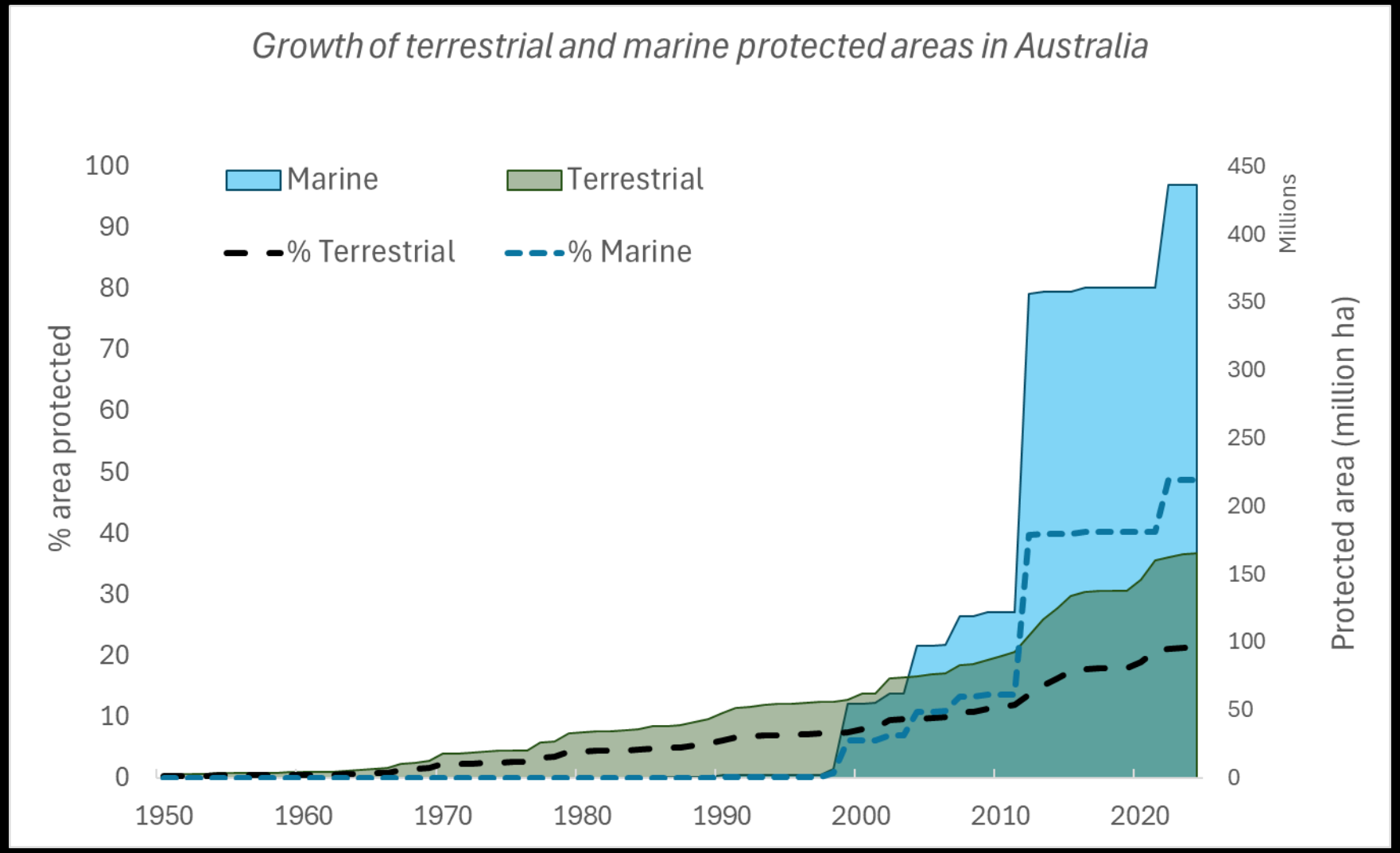
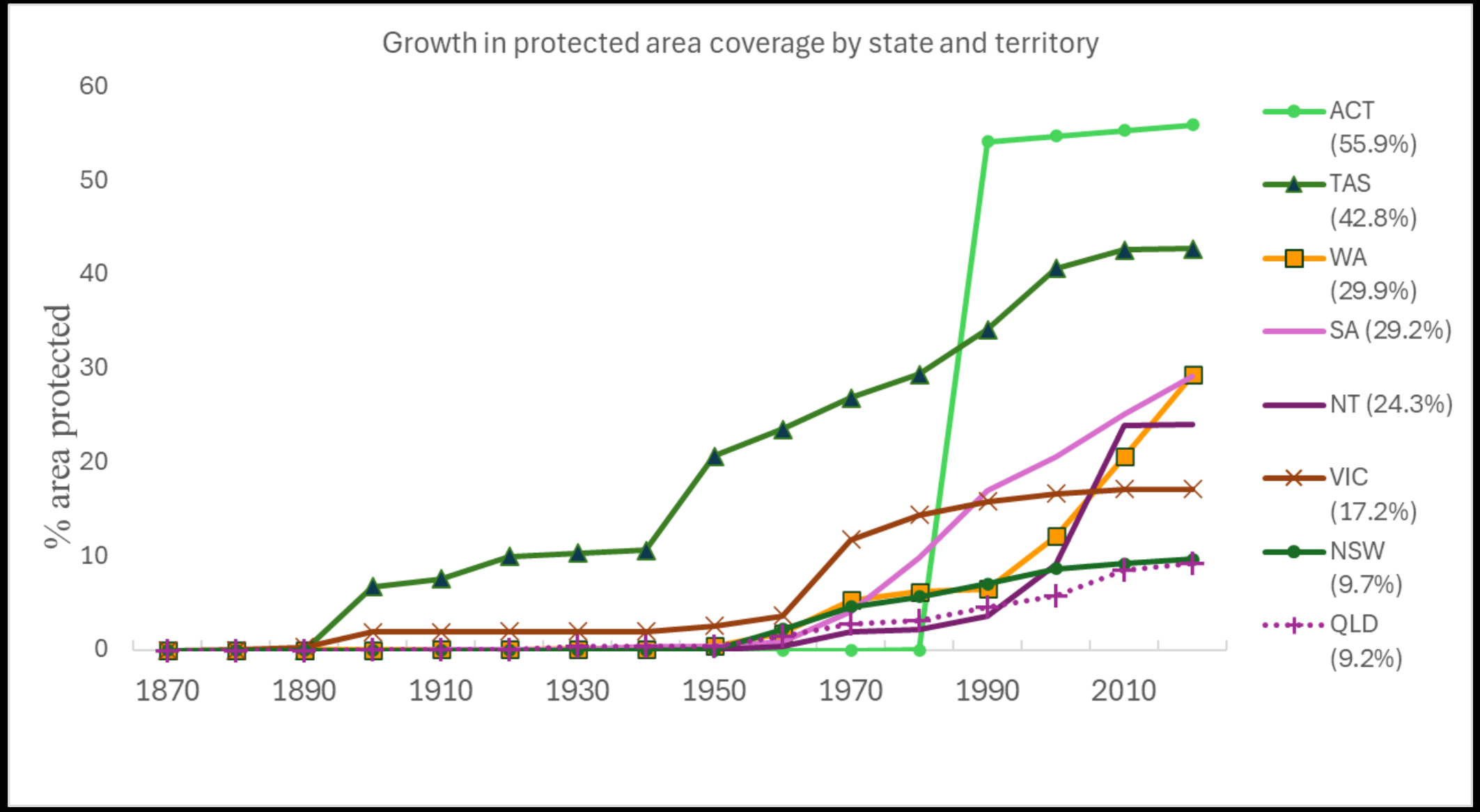
https://theconversation.com/australia-has-dedicated-more-than-20-of-its-land-to-conservation-but-not-where-it-matters-most-278543

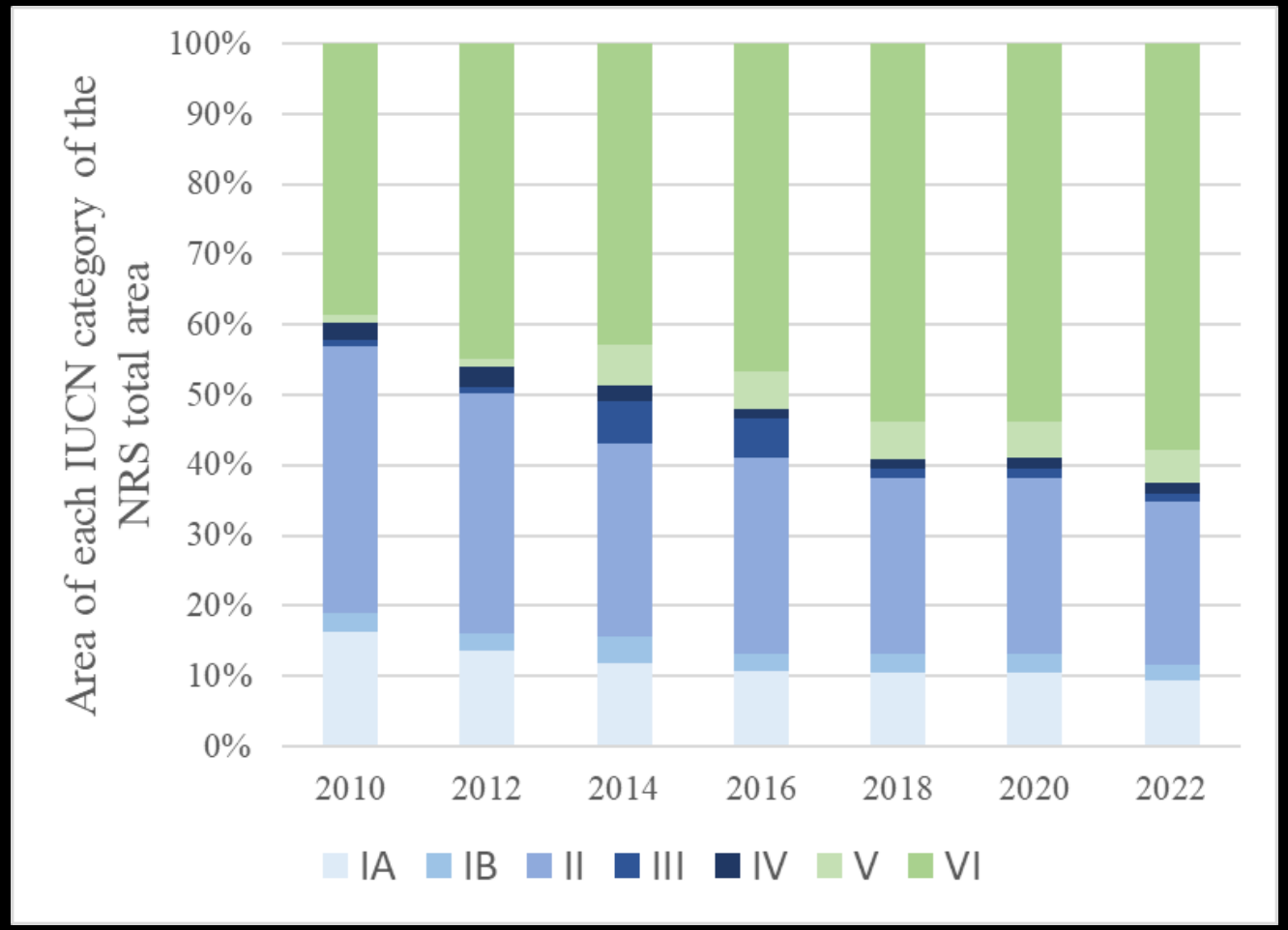
Worry # 1: Growth appears to be plateauing in the terrestrial realm



Worry # 2: Protected area fatigue (or ‘The Tasmania and ACT syndrome’)



Worry # 3: Expansion of protected areas has shifted the overall contribution of less restrictive IUCN protection categories (V and VI) to the NRS from 39.8% in 2010 to 62.5% in 2022.

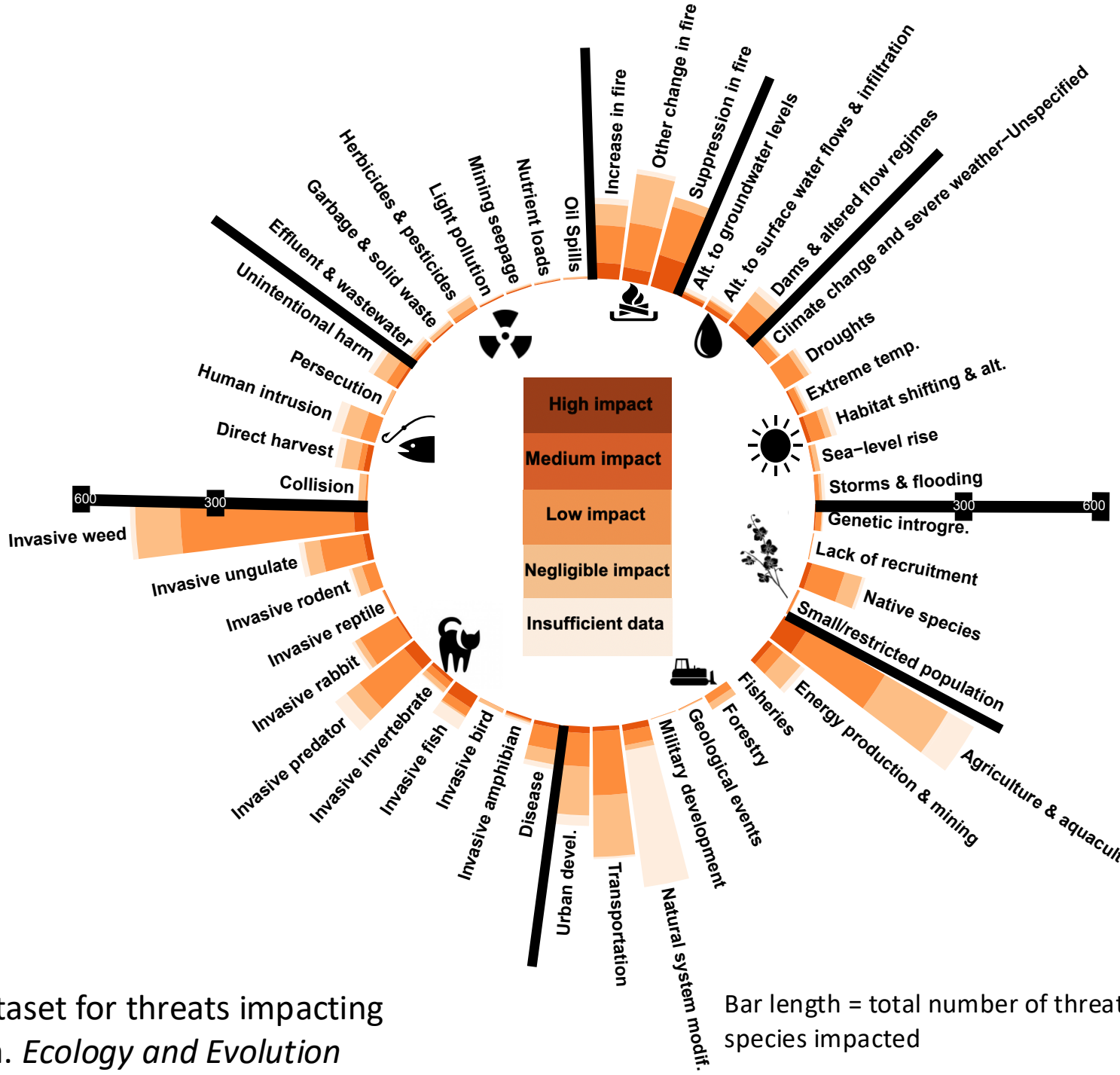


Worry #4 – all threatening processes causing the extinction affecting biodiversity getting worse



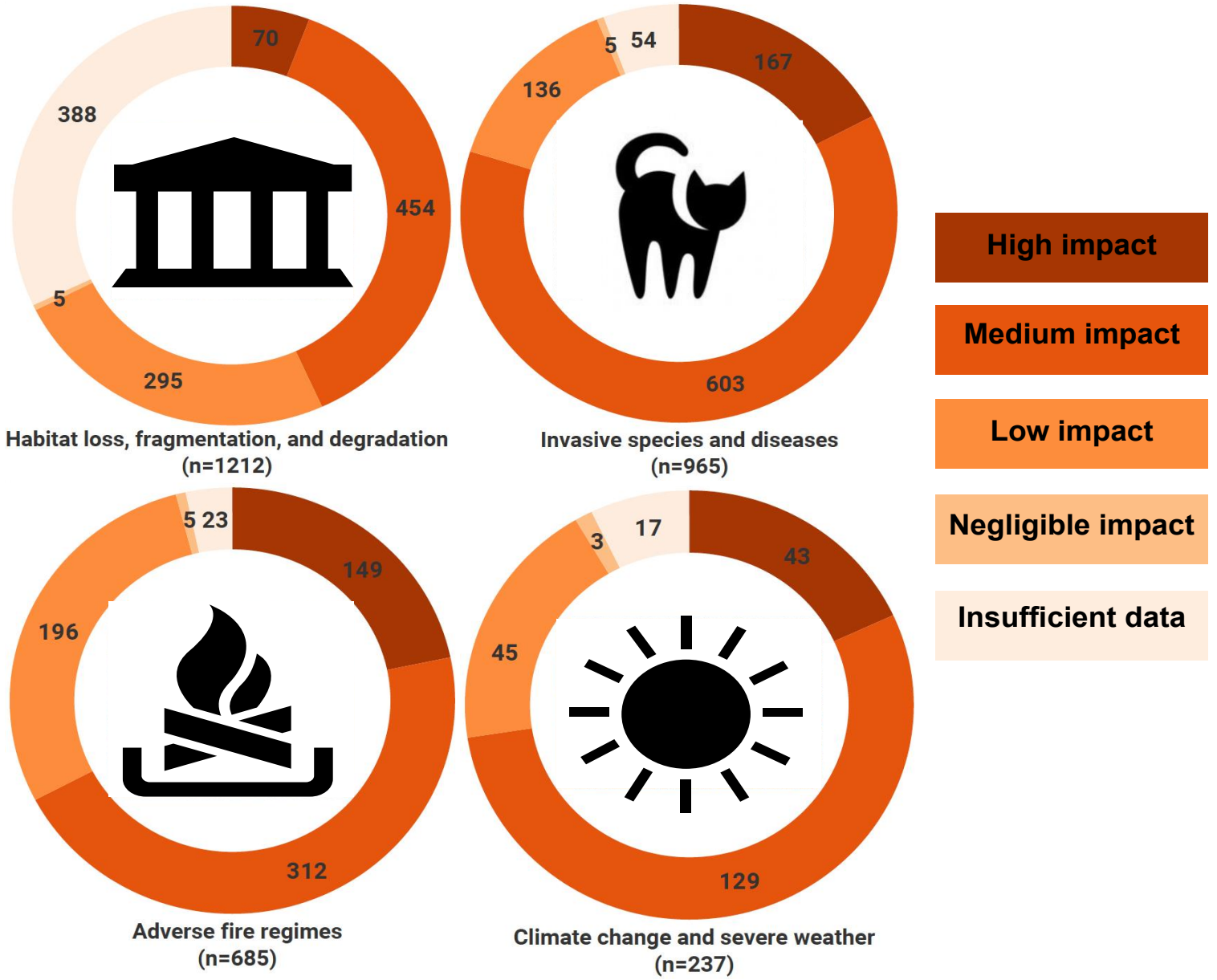



Broad-level threats	Symbol
Adverse fire regimes	
Changed surface and groundwater regimes	
Climate change and severe weather	
Disrupted ecosystem and population processes	
Habitat loss, fragmentation and degradation	
Invasive species and diseases	
Overexploitation and other direct harm from human activities	
Pollution	



Ward et al 2021 A national-scale dataset for threats impacting Australia's imperiled flora and fauna. *Ecology and Evolution*

Bar length = total number of threatened species impacted



Ward et al 2021 A national-scale dataset for threats impacting Australia's imperiled flora and fauna. *Ecology and Evolution*

Deforestation and degradation of habitat is the biggest issue

DEFORESTATION FRONTS

Over 43 million hectares were lost in these deforestation fronts between 2004 and 2017, an area roughly the size of Morocco

LATIN AMERICA

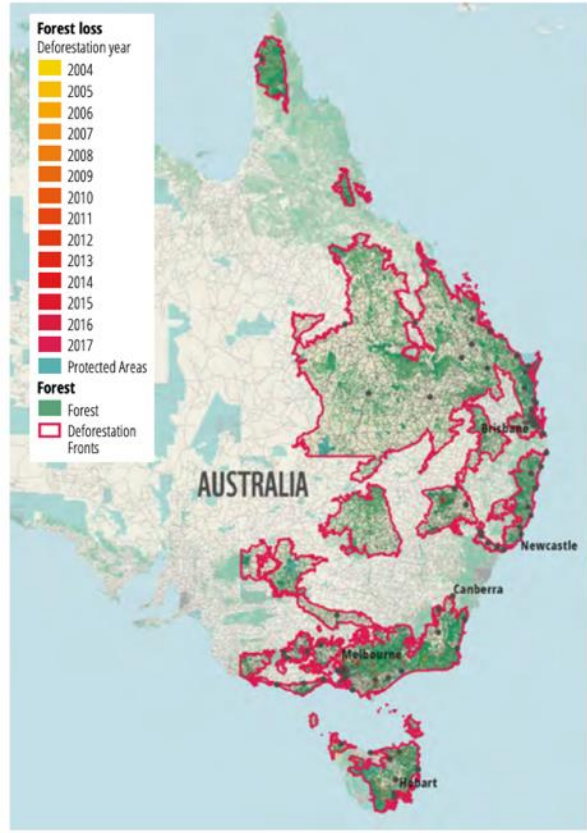
1 Amazon – Brazil
2 Amazon – Colombia
3 Amazon – Peru
4 Amazon – Bolivia
5 Amazon – Venezuela/Guyana
6 Gran Chaco – Paraguay/Argentina
7 Cerrado – Brazil
8 Chocó-Darién – Colombia/Ecuador
9 Maya Forests – Mexico/Guatemala

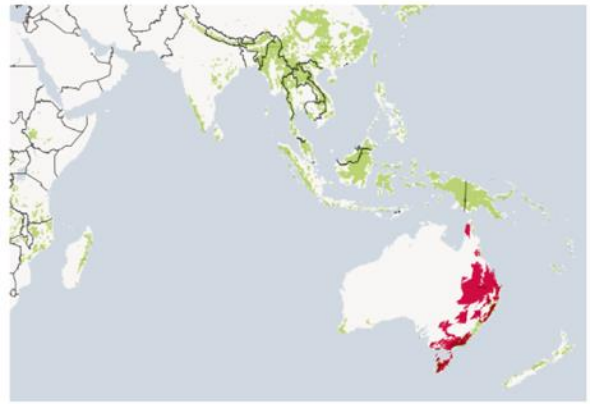
SUB-SAHARAN AFRICA

10 West Africa – Liberia/Ivory Coast/Ghana
11 Central Africa – Cameroon
12 Central Africa – Gabon/Cameroon/ Republic of Congo
13 Central Africa – DRC/CAR
14 Central Africa – Angola
15 East Africa – Zambia
16 East Africa – Mozambique
17 East Africa – Madagascar

SOUTHEAST ASIA AND OCEANIA

18 Mekong – Cambodia
19 Mekong – Laos
20 Mekong – Myanmar
21 Sumatra – Indonesia
22 Borneo – Indonesia/Malaysia
23 New Guinea – Indonesia/PNG
24 Eastern Australia



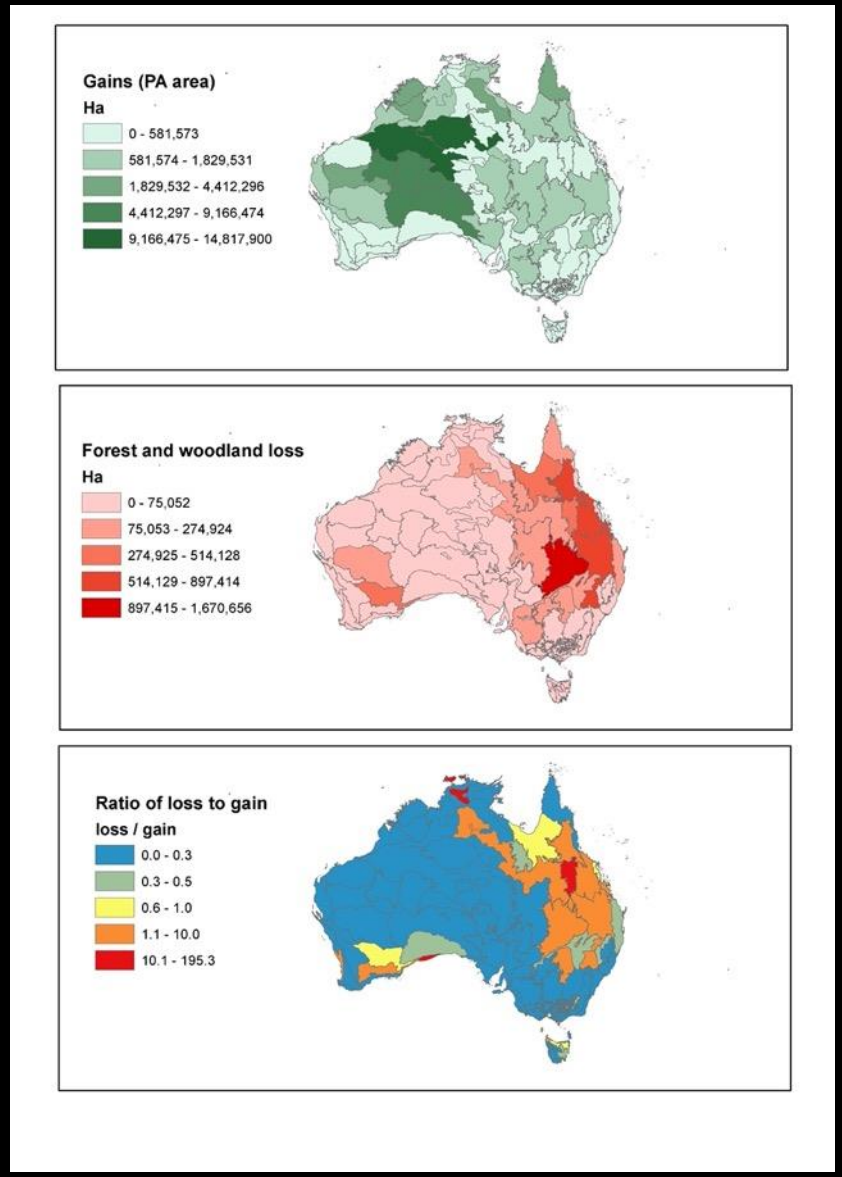


QLD: Between 2021-22, 323,676 hectares of woody vegetation was bulldozed, a very slight reduction from the previous reporting year (349,399ha).

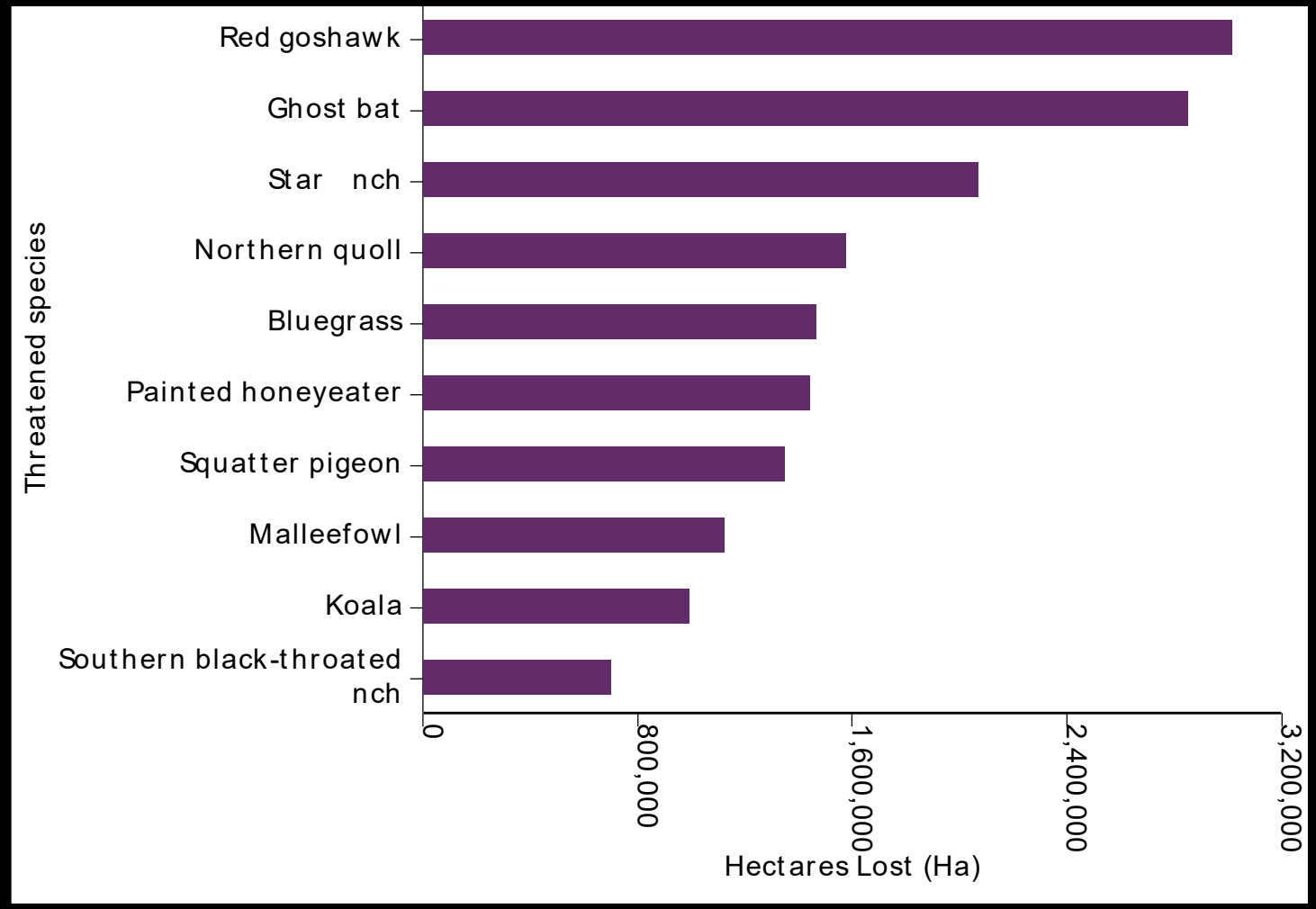
This is 10 times more deforestation than there was in all of Indonesia for palm oil last year (30,000ha)

88% of land clearing activity was for pasture

Comparing where we protect versus where we clear (2000-2017)



In the past twenty years many endangered species have lost a lot of habitat



Ward et al. 2022. Conservation Science and Practice

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Pathway to protecting and conserving more of our precious land by 2030

NEWS | BIODIVERSITY | NATURE POSITIVE AUSTRALIA | ENVIRONMENT

14 October 2024

Minister Plibersek has announced the National Roadmap for protecting and conserving 30% of Australia's land by 2030 (the roadmap).

Australia has set a national target to protect and conserve 30% of our land and marine areas by 2030, referred to as the 30 by 30 target.

Australia's response to the 30 by 30 target for marine areas, including opportunities to strengthen marine protection nationally, is being explored during the development of the Sustainable Ocean Plan.

More than 22% of Australia's land, including inland waters, is protected. An additional 60 million hectares of land needs to be protected or conserved to meet the 30 by 30 land target. The roadmap will help coordinate our efforts towards achieving the 30% land target.

The roadmap:

- explains the role of both protected areas and conserved areas in achieving the 30 by 30 land target
- describes principles to guide efforts towards 30 by 30
- raises awareness of programs that support 30 by 30
- identifies indicators for tracking progress.

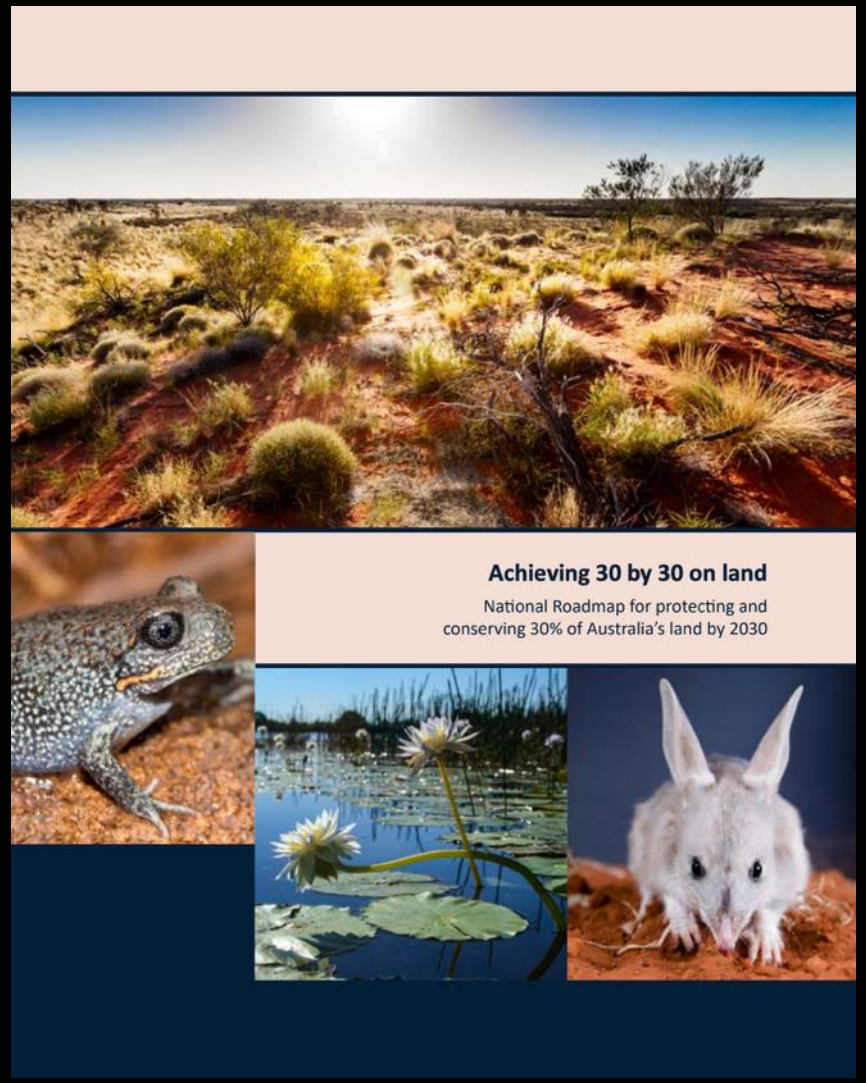
HIGH AMBITION COALITION
FOR NATURE & PEOPLE

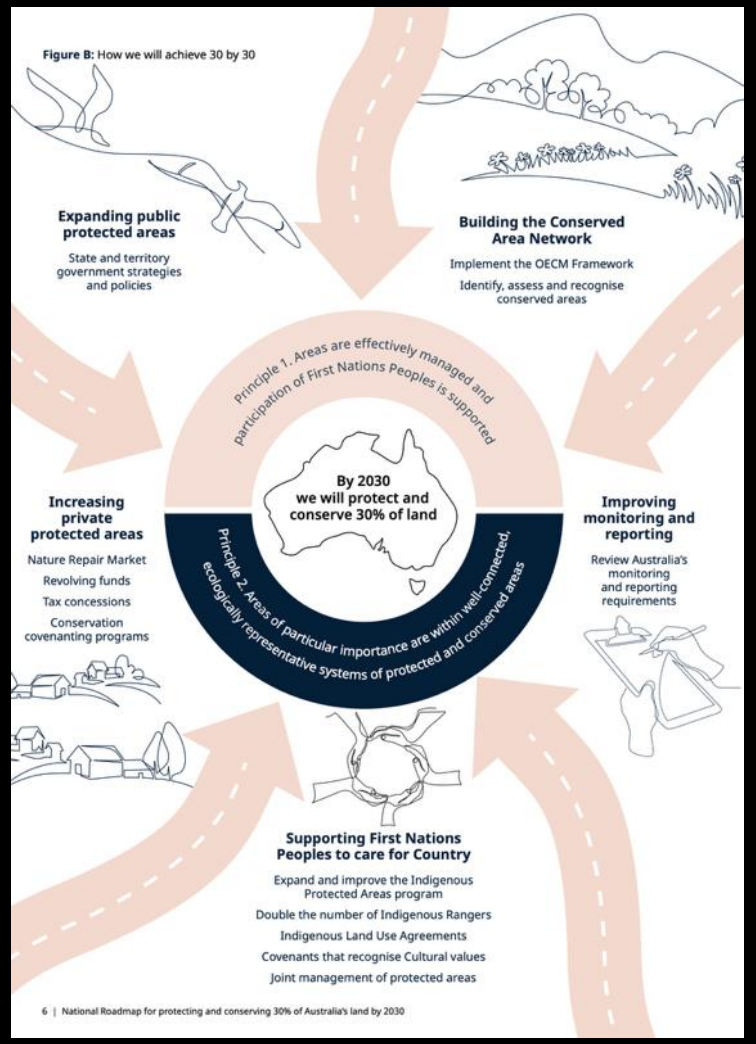
MONTREAL (19th December, 2022) – The High Ambition Coalition for Nature and People (HAC for N&P) celebrated the inclusion of a historic target to protect or conserve at least 30% of the planet's land and ocean by 2030 (30×30) in the United Nations Kunming-Montreal Global Biodiversity Framework approved today at the 15th Conference of the Parties (COP15) to the UN Convention on Biological Diversity (CBD).

They immediately committed to a plan to work together to ensure the implementation of this ambitious global target.

This coalition, which now has 116 countries behind it, held a Ministerial meeting to finalize the modalities of a new mechanism to support delivery of 30×30. The High Ambition Coalition for Nature and People is committing to support countries with concrete actions to establish new protected or conserved areas and improve the management of existing protected or conserved areas, including other effective conservation measures (OECMs).

Co-chairs Mr. Franz Tattenbach, Costa Rican Minister of Environment and Energy, Mr. Christophe Béchu, French Minister of Environment and Ecological Transition and Mrs Bérangère Couillard, French Minister of state in charge of Ecology, Hon. Lord Zac Goldsmith, the UK Minister for Overseas Territories, Commonwealth, Energy, Climate and Environment at the Foreign, Commonwealth and Development Office on behalf of the United Kingdom met with the International Steering Committee members – Australia, Chile, Colombia, Gabon, Japan, Maldives, Nigeria, Norway, Seychelles, United Arab Emirates, the United States of America – to finalize and agree on the governance structures, the developed tools to deliver key activities, and the budget and partnerships arrangements in the implementation phase of the Coalition, known as HAC for N&P 2.0.



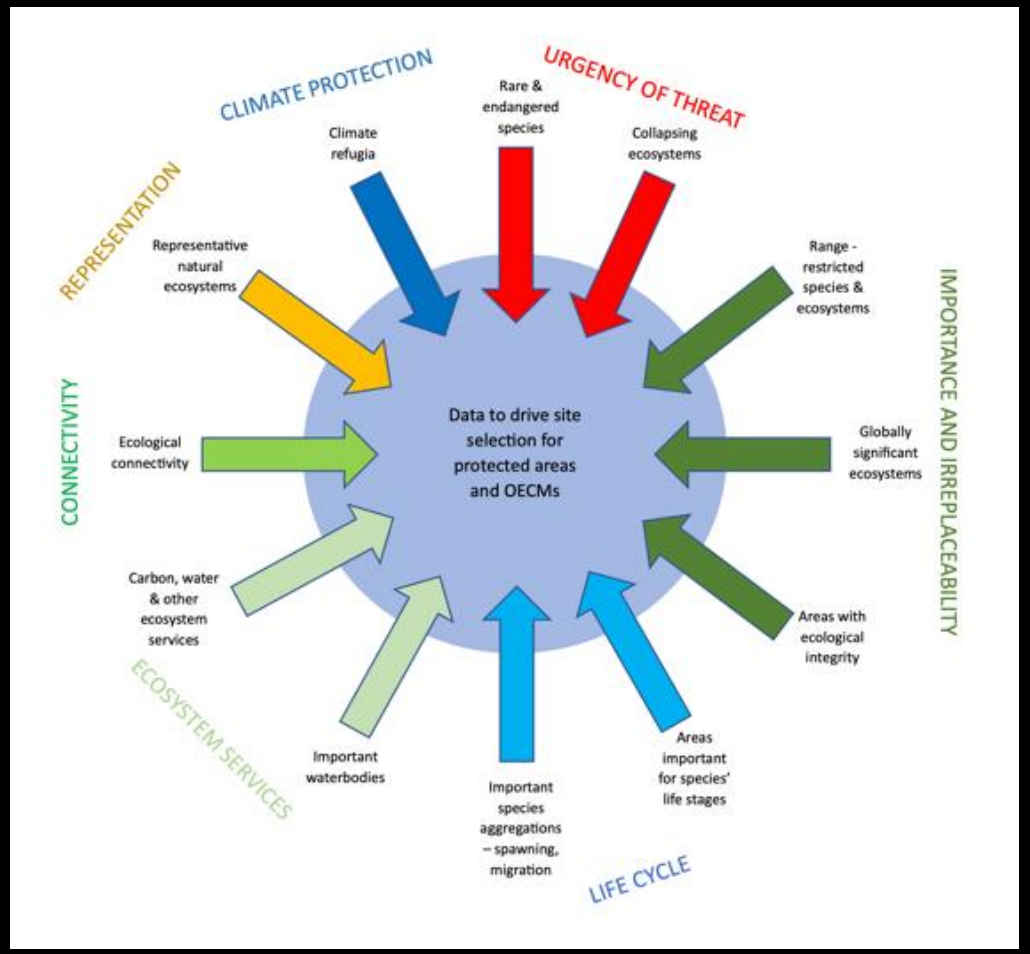


https://www.dcceew.gov.au/sites/default/files/documents/30-by-30-national-roadmap.pdf

‘Effectively managed’

‘areas of particular importance’

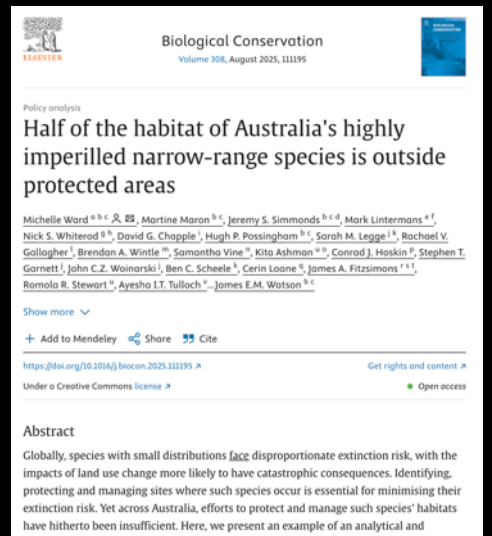
Specifically target areas of particular importance for biodiversity outcomes…..
The good news is we can map and target these areas



Watson et al., 2023. Integrative Conservation

Obvious low hanging fruit

- There are 305 small-ranged critically endangered species across Australia.
- The total size of this habitat is 85,000 square kilometres (about 1% of Australia's land area)
- 50% of habitat is outside the protected area estate.
- 39 species have none of their remaining habitat in the protected area estate
- Approximately 55% of habitat outside of protected areas had at least some agricultural capability.



Biological Conservation
Volume 308, August 2025, 111195

Policy analysis

Half of the habitat of Australia's highly imperilled narrow-range species is outside protected areas

Michelle Ward [a b c], Martine Maron [b c], Jeremy S. Simmonds [b c d], Mark Lintermans [e f], Nick S. Whiterod [g h], David G. Chapple [i], Hugh P. Possingham [b c], Sarah M. Legge [j k], Rachael V. Gallagher [l], Brendan A. Wintle [m], Samantha Vine [n], Kita Ashman [o p], Conrad J. Hoskin [p], Stephen T. Garnett [l], John C.Z. Woinarski [l], Ben C. Scheele [b], Cerin Loane [q], James A. Fitzsimons [r s], Romola R. Stewart [q], Ayesha I.T. Tulloch [r]...James E.M. Watson [b c]

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https://doi.org/10.1016/j.biocon.2025.111195

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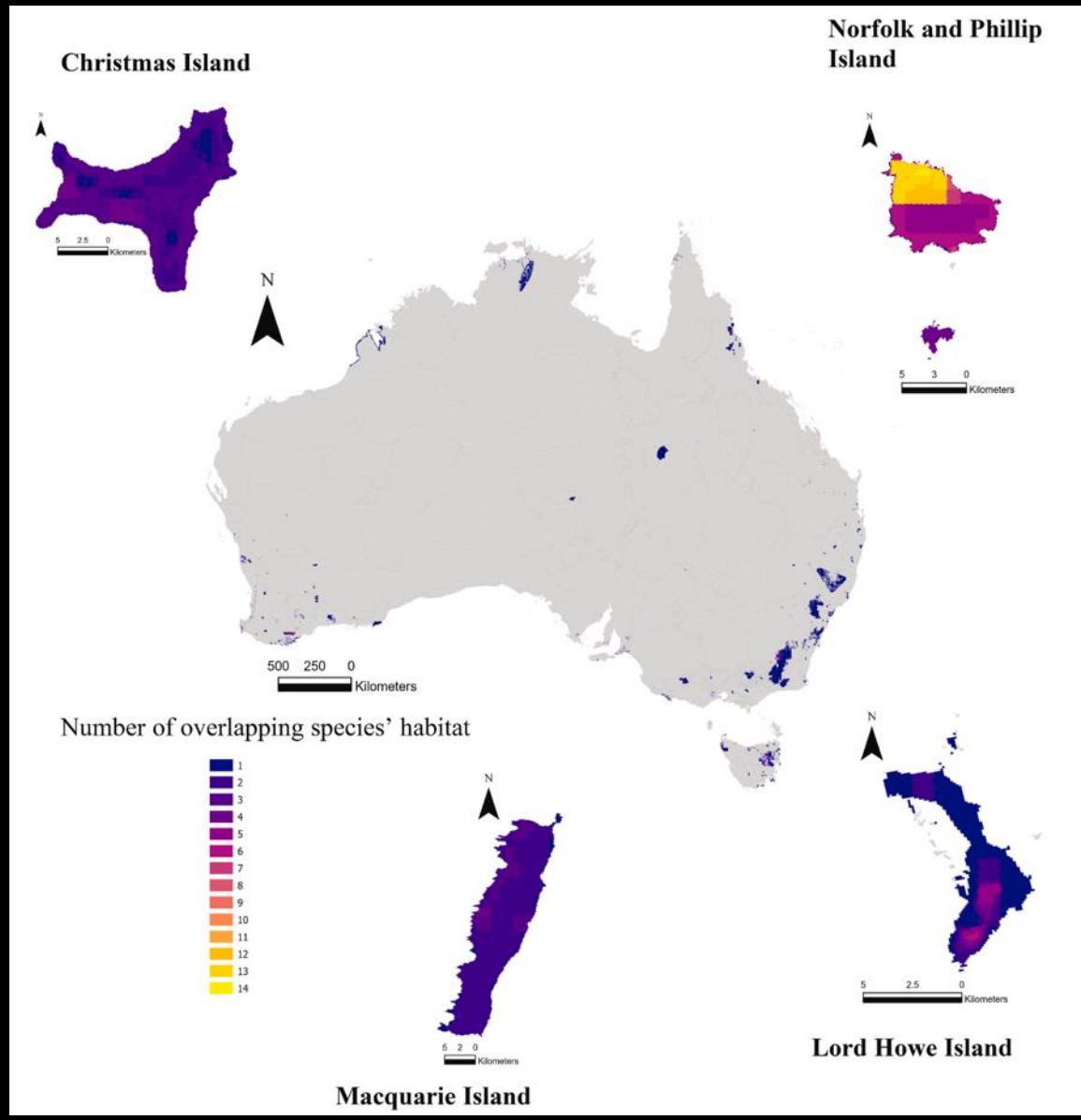
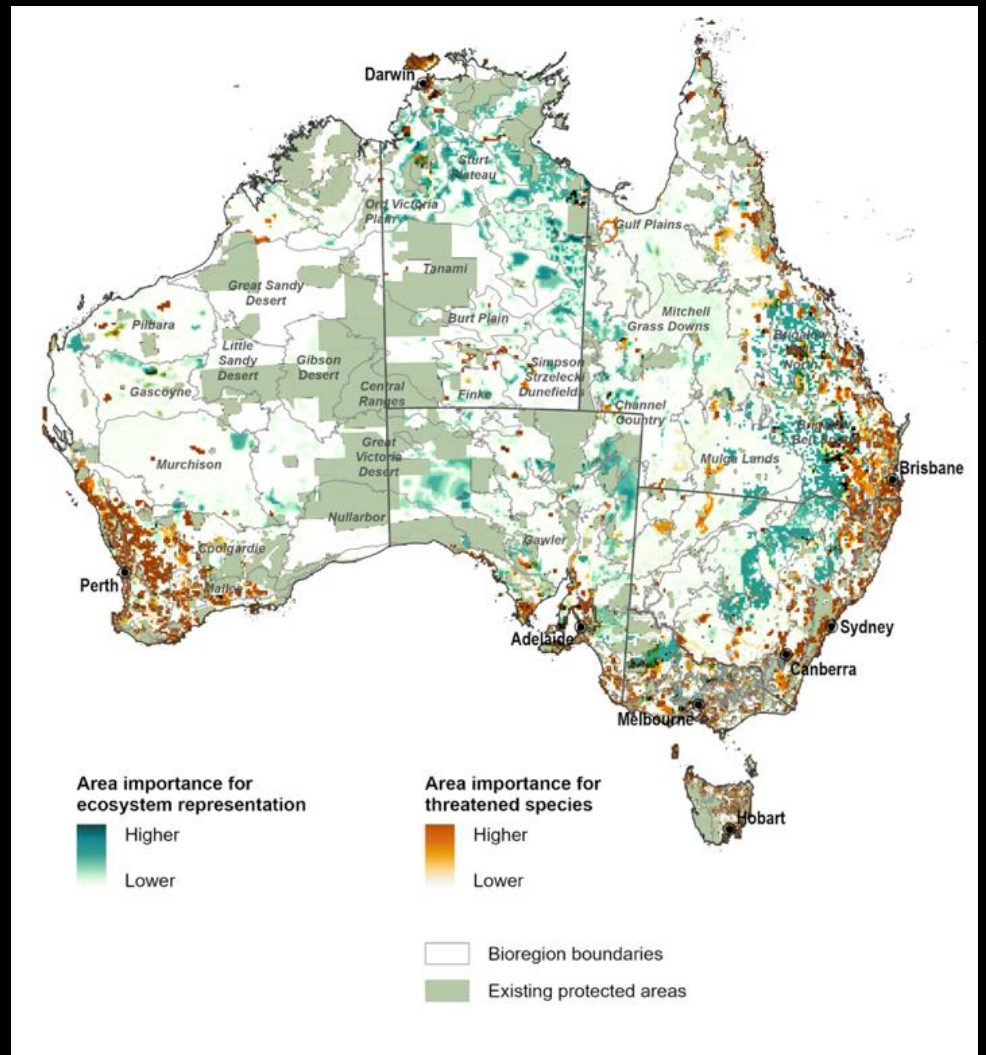
Abstract

Globally, species with small distributions face disproportionate extinction risk, with the impacts of land use change more likely to have catastrophic consequences. Identifying, protecting and managing sites where such species occur is essential for minimising their extinction risk. Yet across Australia, efforts to protect and manage such species' habitats have hitherto been insufficient. Here, we present an example of an analytical and



There are now good assessments out there that target key areas for threatened species and ecosystems – and keep within 30%



Vergemont Station, Western Queensland

In 2024, the Queensland Government purchased Vergemont Station, a 352,589-hectare cattle grazing property.

Tonkoro and Melrose Stations, Western Queensland

In 2024, the Queensland Government purchased the 138,000-hectare Tonkoro Station and 65,000-hectares of Melrose Station

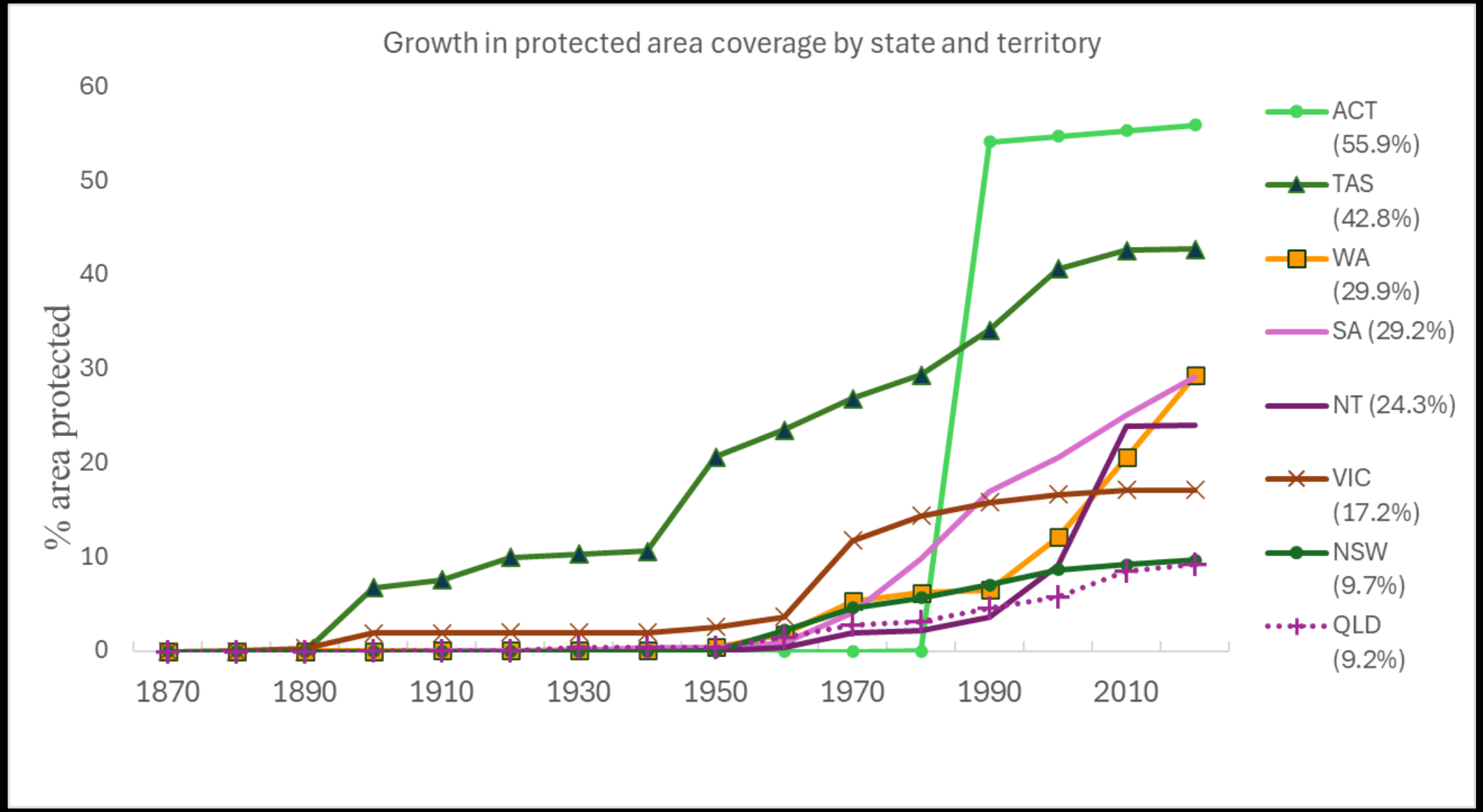
Great Barrier Reef Island Arks

In 2024, the Queensland Government transferred 140 Great Barrier Reef islands or parts thereof totalling 1,390 hectares, to protected area as part of Great Barrier Reef Island Arks project.

Crisafulli Government boosts conservation with declaration of third Special Wildlife Reserve

- The Crisafulli Government has boosted conservation with the declaration of a third Special Wildlife Reserve.
- The 229,000-hectare Pilungah Special Wildlife Reserve southwest of Mt Isa is owned by Bush Heritage Australia and home to a range of plants and animals.
- The Crisafulli Government is delivering a plan for Queensland's future and is committed to partnering with private landholders to better protect the environment.

Queensland is the most biodiverse state….a lot of work to do!



Thanks for listening! Always up for a chat about birds

e: james.watson@uq.edu.au

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