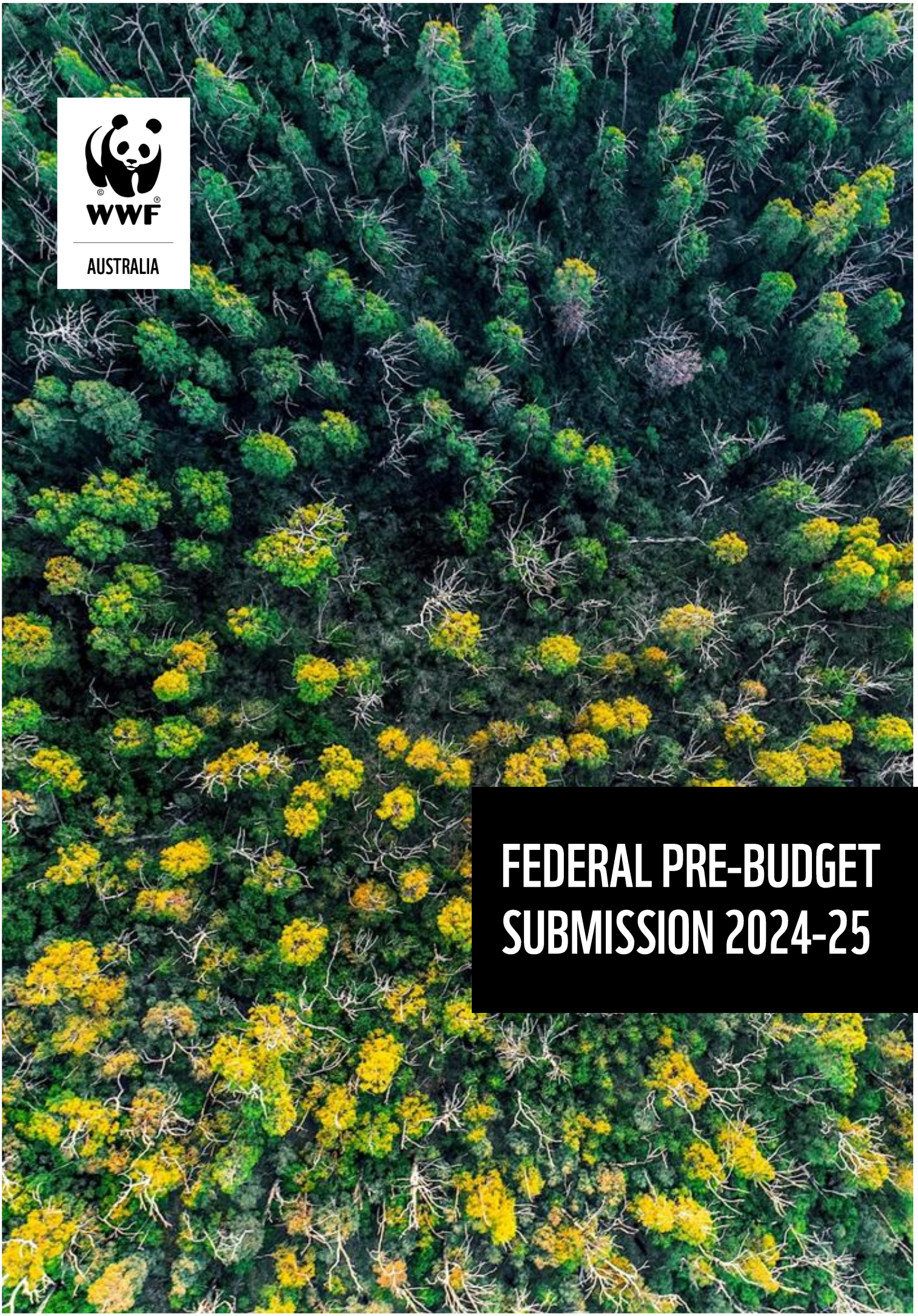

WWF

AUSTRALIA

FEDERAL PRE-BUDGET SUBMISSION 2024-25

Budget Submission 2024-2025

The World Wide Fund for Nature-Australia (WWF-Australia) welcomes the opportunity to make a submission for the 2024-2025 Federal Budget. WWF-Australia's submission presents practical recommendations, focusing on three priority investment areas, that will aid in Australia's transition to a sustainable and low-carbon economy, for the benefit of people and nature.

About WWF-Australia

WWF is one of the world's largest and most experienced independent conservation organisations, with over 30 million supporters and a global network active in more than 100 countries. WWF-Australia is part of the WWF International Network and is one of Australia's most trusted conservation organisations. At WWF, we work to protect threatened species and habitats, meet the challenge of climate change, and build a world where people live in harmony with nature.

State of the Environment

The science is clear. Nature is in crisis, and "the Earth is now well outside of the safe operating space for humanity".[1] WWF's *Living Planet Report 2022* showed that global wildlife populations have plummeted nearly 70 per cent since 1970.[2] The Government's own *State of the Environment Report 2021* revealed that more mammal species have become extinct in Australia than any other continent, and Australia continues to have one of the highest rates of species decline in the developed world, with 7.7 million hectares of habitat for terrestrial threatened species cleared or substantially degraded between 2000 and 2017.[3] Australia's marine environment is also threatened by warming waters, ocean acidification, pollution, and destructive fishing practices. Multiple years of coral bleaching in the Great Barrier Reef (GBR) have resulted in widespread coral losses within and beyond the GBR.

Our planet has already warmed by 1.1 ^{o}C and is on course to hit 1.5 ^{o}C or higher by the 2030s, which will have catastrophic consequences for people and nature.[4] Australia is among the most vulnerable countries in the world to the impacts of climate change, which include increasingly frequent and severe flooding, droughts and bushfires. For example, nearly three billion animals were killed or displaced during the 2019-2020 bushfires.[5] It was also estimated to have cost $4 billion-$5 billion in damages to the farming sector alone, plus another $3 billion-$7 billion in damages from greenhouse gas emissions by burning vegetation.[6]

We welcome the Government's many nature and climate commitments, including preventing new extinctions, protecting 30 per cent of land and marine areas by 2030 and transitioning to a renewable nation. However, if we are to halt the decline and regenerate nature, significant funding is required. Compared to countries of comparable wealth, Australia underspends on biodiversity conservation.[7] Research demonstrates that the more a country spends on conservation, the fewer species it loses.

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[1] Katherine Richardson et al. (2023), Earth beyond six of nine planetary boundaries. *Science Advances* Vol 9, Issue 37. DOI:10.1126/sciadv.adh2458

[2] WWF (2022). Living Planet Report 2022 – Building a nature-positive society. Almond, R.E.A., Grooten, M., Juffe Bignoli, D. & Petersen, T. (Eds). WWF, Gland, Switzerland. https://assets.wwf.org.au/image/upload/f_pdf/file_living_planet_report_2022_final?_a=ATO2Ba20

[3] Ward, MS, Simmonds, JS, Reside, AE, et al. (2019). Lots of loss with little scrutiny: The attrition of habitat critical for threatened species in Australia. *Conservation Science and Practice*. Vol 1, Issue 11. https://doi.org/10.1111/csp2.117

[4] IPCC Sixth Assessment Report (2022). https://www.ipcc.ch/report/ar6/wg2/

[5] WWF (2020). The impact of the unprecedented 2019-20 bushfires on Australian Animals. https://assets.wwf.org.au/image/upload/v1/website-media/resources/WWF_Impacts-of-the-unprecedented-2019-2020-bushfires-on-Australian-animals

[6] Bishop et al. (2021). Fire on the Farm: Assessing the impacts of the 2019-2020 bushfires on food and agriculture in Australia. WWF-Australia. https://assets.wwf.org.au/image/upload/v1/website-media/resources/WWF_Report-Fire_on_the_Farm_converted?_a=ATO2Ba20

[7] Wintle BA et al. (2019), Spending to save: What will it cost to halt Australia's extinction crisis? *Research Institute for Environment and Livelihoods*. https://researchers.cdu.edu.au/en/publications/spending-to-save-what-will-it-cost-to-halt-australias-extinction-

The United States provides a strong example of how fewer species are lost when spending on conservation increases.

The scale of funding required is illustrated by:

- The global biodiversity finance need is estimated at US$722 billion-$967 billion per year, including the cost of reforming environmentally harmful subsidies. This represents a five-to-six-fold increase in global funding for biodiversity from 2019 levels.[8]
- To reach net zero emissions by 2050, annual clean energy investment worldwide needs to reach US$4 trillion by 2030, from an estimated US$1.7 trillion in 2023.[9]
- Funding to protect 30 per cent of our oceans (US$9 billion-$12 billion per year) is estimated at nine to 12 times greater than current spending on marine protected areas.[10] Additional funding is required to transition to sustainable fisheries management and to reduce the adverse environmental impacts of marine industries (e.g., ocean transport, renewable energy infrastructure, aquaculture etc).

This decade must be a turning point, where we recognise the value of nature and invest the resources required to place nature and our climate firmly on the path to recovery. Instead of using natural resources faster than the earth can replenish, we need an economy that accelerates the regeneration of nature. This goes beyond a circular model of production and consumption. We must build a truly regenerative economy that renews and restores what has been lost, while also reducing social inequality so people and the planet can live in harmony.

Areas for Investment

The climate and nature crises are the greatest challenges humankind has ever faced. They demand a dramatic transformation of how we produce, consume, and live our lives. This requires substantial public funding, which can leverage even greater private investment and job creation. The following section of this submission presents three key strategic areas for investment:

1. Wildlife protection and habitat regeneration
2. Climate action and renewables transition
3. Safeguarding our oceans and coastal communities

These key strategic areas for investment are in line with the Government's priorities to:

- Protect, manage and restore Australia's threatened species and important natural places
- Create jobs, reduce pressure on energy bills and reduce emissions by boosting renewable energy
- Develop a Sustainable Ocean Plan, to ensure our ocean remains healthy and productive.

These investments are essential to help secure a healthy planet for people and nature, and to safeguard Australia's economy.

1. Wildlife Protection and Habitat Regeneration

Investment: $5.8 billion/year (a minimum investment for species conservation only)
Outcome: Australia becomes a world leader in habitat protection, management and restoration,

[8] Deutz et al. (2020). Financing Nature: Closing the Global Biodiversity Gap. *The Nature Conservancy*. https://www.nature.org/en-us/what-we-do/our-insights/reports/financing-nature-biodiversity-report/
[9] International Energy Agency (2021). Net Zero by 2050: A roadmap for the Global Energy Sector. https://iea.blob.core.windows.net/assets/deebef5d-0c34-4539-9d0c-10b13d840027/NetZeroby2050-ARoadmapfortheGlobalEnergySector_CORR.pdf
[10] UNEP (2022). MPA Finance: Status and Future Directions. https://wedocs.unep.org/20.500.11822/40275

working with First Nations peoples and communities to regenerate landscapes, halt species extinctions, and recover biodiversity.
Example Projects:

- National Vegetation Monitoring and Mapping
- Right-Way Fire: A Nature-Based Solution for Climate
- Indigenous Women Rangers Environmental Network
- Greater Glider Conservation

Currently, Earth is undergoing its sixth major extinction event.[11] This phase is marked by an unprecedented species extinction rate, estimated to be 100 to 1000 times higher than what is considered normal.[12] Major causes of this decline include habitat destruction, invasive species and disease, altered fire and water regimes, and over-exploitation. Among all nations, Australia is particularly notable for its biodiversity challenges and therefore can play a crucial role in addressing global species extinction. Over the past 300 years, Australia has seen the loss of more than 100 unique species, including 34 species of mammals.[13] Additionally, it has one of the longest lists of threatened species, with nearly 2,000 species at risk of extinction,[14] placing it at the forefront of the global extinction crisis. To address this biodiversity crisis, the Australian Government identified 110 priority species for conservation action.

- **Prioritising 110 Species**
  WWF-Australia, utilising a recent threat management cost assessment,[15] presents the first cost estimate for effectively managing these 110 priority species to delay species extinction, ensuring no species slip below Critically Endangered. Using the Federal Government's Species of National Environmental Significance dataset, we extracted the 110 priority species maps. Using Ward et al. (2021), we extracted all threatening processes impacting each of the 110 priority species[16]. Every species habitat map was clipped to each corresponding spatial action map. To meet the objective to delaying species extinction, we used the IUCN Red List threat level criteria to holding all species at Critically Endangered levels, then used Marxan planning software to prioritize areas. The activities would include critical sites access management, disease management (general and *Phytophthora*), ecological fire regime management, forestry management, grazing management, habitat restoration, hydrology management, invasive fish management, invasive herbivore management, invasive predator management, invasive weed management, invasive/problematic bird management, and mapping and protecting climate refugia. Some species required additional actions, including captive breeding programs and/or translocations, to meet the objective, which is included in the overall cost.

  While the above investment figure would benefit the 110 priority species and any overlapping wildlife and landscapes that require similar protections, it falls short of the comprehensive action needed to protect and restore all of the nation's threatened landscapes and species.

[11] Barnosky, A., Matzke, N., Tomiya, S. et al. (2011). Has the Earth's sixth mass extinction already arrived?. *Nature* 471, 51–57. https://doi.org/10.1038/nature09678; Ceballos G, Ehrlich PR, Dirzo R. Biological annihilation via the ongoing sixth mass extinction signalled by vertebrate population losses and declines. *Proc Natl Acad Sci U S A*. 2017 Jul 25;114(30):E6089-E6096. https://doi.org/10.1073/pnas.1704949114
[12] Gerardo Ceballos *et al.* (2015). Accelerated modern human–induced species losses: Entering the sixth mass extinction. *Sci. Adv.***1**,e1400253(2015). DOI:10.1126/sciadv.1400253
[13] EPBC Act List of Threatened Fauna, Commonwealth of Australia, (2023). https://www.environment.gov.au/cgi-bin/sprat/public/publicthreatenedlist.pl?wanted=fauna; Woinarski JC, Burbidge AA, Harrison PL. Ongoing unravelling of a continental fauna: decline and extinction of Australian mammals since European settlement. Proc Natl Acad Sci U S A. (2015) Apr 14;112(15):4531-40. https://doi.org/10.1073/pnas.1417301112; Woinarski, J.C.Z., Braby, M.F., Burbidge, A.A., Coates, D., Garnett, S.T., Fensham, R.J., Legge, S.M., McKenzie, N.L., Silcock, J.L., and Murphy, B.P. (2019). Reading the black book: the number, timing, distribution and causes of listed extinctions in Australia. Biological Conservation. Vol. 239, 108261. https://doi.org/10.1016/j.biocon.2019.108261
[14] IUCN (2020). https://www.iucnredlist.org/resources/summary-statistics
[15] Yong et al. (2023). The costs of managing key threats to Australia's biodiversity. Journal of Applied Ecology. Vol.60 No.5, May 2023. Pages 898-910. s://doi.org/10.1111/1365-2664.14377
[16] Ward, M., Carwardine, J., Yong,CJ., Watson, J., Silcock, J., Taylor, G., Lintermans, M., Gillespie, G., Garnett,, S, Woinarski, J., Tingley, R., Fensham, R., Hoskin, C., Hines, H., Roberts, JD., Kennard, M., Harvey, M., Chapple, D., Reside, A. (2021) A national-scale dataset for threats impacting Australia's imperiled flora and fauna. *Ecology and Evolution*. https://doi.org/10.1002/ece3.7920

For instance, the endangered southern greater glider, facing rapid decline due to native forest logging, desperately requires a dedicated recovery plan and recovery team. Thus, we have included a separate project overview - see Project Four - that outlines the costs associated with this work.

In the final section of our submission, we have included some project examples that contribute to the total investment figure above ($5.8-6.8 b/yr). This isn't an exhaustive list of projects but illustrates where funds could be directed to start delivering on the protection and recovery needed. The project examples provided have been chosen based on the value they yield, and because we have the detail and action plans to provide clear budget requirements.

2. Climate Action and Renewables Transition

Investment: $14.27 billion in FY2024-25
Outcome: Australia invests in a zero-carbon future and steps up as a regional climate leader.
Example Projects:

- Materials and Embodied Carbon Leaders' Alliance (MECLA)
- Climate Resilient by Nature Phase 2

Climate change is the greatest threat facing the health, security and prosperity of our nation and our region. The Australian Government says it's "back at the international table"[17] on climate and that "we will stand shoulder to shoulder with our Pacific family in response"[18] to the crisis of climate change. These commitments have been reflected in the enthusiasm with which Australia has pursued the opportunity to host COP31 in 2026, and in new funding to support some of Australia's neighbours who are among the world's most vulnerable to climate change. These are welcome commitments, but Australia needs to do much more to rise from its long-held position of climate laggard to climate leader.

- **Investing in the Renewable Transition**
  As the world drives down greenhouse gas emissions, there is an unprecedented opportunity to create millions of new jobs and to connect decarbonised supply chains across the world in new ways. Countries around the world, including the United States, European Union members, Canada, and Korea, are making enormous investments to create jobs, onshore critical supply chains, and meet their commitments under the Paris Agreement. The expansion of the Capacity Investment Scheme, and Australia joining with 117 other countries at COP28 to pledge to triple global renewable energy capacity and double the annual rate of energy efficiency improvements by 2030 are welcome developments but are insufficient to meet the scale of the climate crisis or the scale of the economic opportunity that the renewable transition presents. WWF-Australia has joined with other environmental groups, trade unions, and industry to call for an ambitious response: a $100 billion (over 10 years) Australian Renewable Industry Package that invests in Australian jobs and prosperity for decades to come, builds a resilient and diversified renewable economy, and reduces domestic emissions while helping the world decarbonise. A recent Accenture report, commissioned by WWF-Australia and other partners, demonstrates how a $38 billion investment of public funds into a selection of priority clean export industries over the next 10 years could achieve a $314 billion opportunity return on investment.[19] This public investment

[17] The Hon Chris Bowen MP, Minister for Climate Change and Energy, Press conference, Smithfield, Sydney, NSW, 5 November 2022, https://minister.dcceew.gov.au/bowen/transcripts/press-conference-smithfield-sydney-nsw.
[18] Senator the Hon Penny Wong, Minister for Foreign Affairs, Speech to the Pacific Islands Forum Secretariat, 26 May 2022, https://www.foreignminister.gov.au/minister/penny-wong/speech/speech-pacific-islands-forum-secretariat.
[19] Accenture (2023). Sunshot: Achieving global leadership in clean exports. https://assets.wwf.org.au/image/upload/Sunshot_-_Achieving_Global_Leadership_in_Clean_Exports_Final_Report?_a=ATO2Ba20

should not just be limited to hard infrastructure development, but also include targeted investment to improve government and industry capacity and connectivity (see, for example, the proposed investment in MECLA) and to ensure a just and ecologically sound transition.

Achieving the urgent scale-up of renewable energy should not be seen at odds with the similarly urgent need to protect Australia's biodiversity. These priorities can be balanced by Government investment in ensuring timely and robust assessment of proposed projects against strong environmental standards. For example, the Department of Climate Change, Energy, the Environment and Water (DCCEEW) could be resourced to set up a "Renewables and Transmission Projects Regulatory Review Prioritisation Service" (RTPRRP Service) so that the timelines for reviewing priority decarbonisation projects to help Australia reach net zero sooner are prioritised and supported through the Federal environmental regulatory review process. When Minister Plibersek released the Nature Positive Plan on 8th December 2022, it was noted that there was a 640-day wait for federal approval for renewable energy projects and a 733-day wait for transmission approvals. A RTPRRP Service could ensure that all renewable energy and transmission projects are still subjected to the same criteria and level of review as any other project but prioritised and supported to align with the currently proposed 60 days for projects that need full assessment, and 20 days for projects that do not require assessment.

This rapid scale-up of renewable energy infrastructure must also be done in ways that protect and respect the rights of First Nations people. Within the proposed $100 billion investment, WWF-Australia urges the Government to set a new, ambitious standard for Indigenous participation and ownership, drawing on the work of organisations like the First Nations Clean Energy Network, which WWF-Australia is proud to support.

- **Stepping Up to Support Australia's Neighbours**
  We applaud the recent resolution of the ALP National Conference to commit to "a plan and pathway" to achieve the target of 0.5 per cent GNI for Official Development Assistance (ODA) and remind the Government that climate finance should be new and additional to ODA.[20]

  While it is not practical for Australia to increase both ODA and climate finance to meet its fair share in one financial year, we urge the Government to develop a plan and pathway to both achieve 0.5 per cent GNI for ODA (requiring an additional $1.27 billion in FY2024-2025) as well as commit to a separate but complementary pathway to grow international climate finance (as new and additional funds to the aid program). This would mean a commitment to $3 billion per year over 2020-2025 and to achieving our international fair share[21] of $4 billion annually by 2025.

  Climate finance should be "new and additional", not diverted from other international development program priority sectors. However, within those priority sectors, we also need to address the fundamental ways climate change hampers sustainable development.

  The New International Development Policy's climate target and the introduction of a nature-positive indicator in the new performance and delivery framework are steps in the right direction. Nature-based solutions can be a cost-effective way to translate those policy commitments into action and can support climate mitigation while helping communities adapt to the unavoidable impacts of climate change.

  Healthy mangroves, for example, sequester carbon, protect from storm surges, and are spawning grounds for economically and nutritionally important fish. When designed with

[20] Australian Council for International Development (2023). Aid sector welcomes ALP Conference resolution on aid budget, https://acfid.asn.au/aid-sector-welcomes-alp-conference-resolution-on-aid-budget/
[21] ODI (2023). A fair share of climate finance? The adaption edition. https://odi.org/en/publications/a-fair-share-of-climate-finance-the-adaptation-edition/

sustainable and inclusive development aspirations, traditional knowledge, and cultural authority of communities at the centre, the benefits of nature-based solutions can be even more wide-reaching. A recent analysis[22] found that lands managed by Indigenous People and Local Communities can sequester more than two times the amount of carbon than other lands.

Since 2021, WWF-Australia has been working with the Department of Foreign Affairs and Trade (DFAT) to help approximately 20,000 people across the Pacific and Southeast Asia build their social and ecological resilience to climate change through nature-based solutions. Climate Resilient by Nature ($14.55 million over four years), which is due to conclude its first phase in September 2025, is also supporting some of Australia's leading international development NGOs to use the power of nature-based solutions to integrate climate action into their programming.

As part of rebuilding the aid program and growing Australian climate finance, we encourage the Government to commit at least $100 million per year to initiatives that have the primary objective of achieving development outcomes in the Pacific and Asia through the protection and restoration of nature and climate-critical ecosystems. Within that, we are proposing $8 million per year over 10 years for a second, scaled-up phase of the Climate Resilient by Nature program.

In the final section of our submission, we have included some project examples that contribute to the total investment figure above ($14.27b in FY24-25). This isn't an exhaustive list of projects but illustrates where funds could be directed to deliver on climate action and the renewables transition. The project examples provided have been chosen based on the value they yield, and because we have the detail and action plans to provide clear budget requirements.

3. Safeguarding our Oceans and Coastal Communities

Investment: $270 million/year
Outcome: Australia works with regional neighbours to safeguard oceans, creating safe passages for marine wildlife, improving fisheries management and supporting coastal communities.
Example Projects:

- Transparency and Traceability: Complementary Pillars of Sustainable Pacific Tuna Fisheries

Australia's oceans, comprising the world's third largest marine territory, are home to some of the Earth's richest and most diverse marine life. Such global significance brings global responsibility. And despite often being regarded as a leader in marine conservation, Australia is not immune to the devastating trends facing our oceans, reefs and marine life.

Recent strides taken by the Australian Government, like expanding Macquarie Island Marine Park and supporting the permanent phase-out of commercial gillnetting in the Great Barrier Reef Marine Park, demonstrate the extent to which Australia's ocean leadership is starting to be matched by action. Yet, escalating threats from climate change, pollution, overfishing and coastal development continue to endanger our marine ecosystems.

There are world-leading opportunities to be seized both in Australia's oceans and working with our neighbours throughout the Southern Hemisphere to help regenerate and safeguard the future health

[22] Forest Declarations Assessment (2022). Sink or swim: How Indigenous and community lands can make or break nationally determined contributions. https://forestdeclaration.org/wp-content/uploads/2022/03/Sink-or-swim-IPLC-lands-and-NDCs.pdf

of our oceans whilst also sustaining local communities, livelihoods and security. Key opportunities include:

- **Strengthening and Expanding Australia's Marine Park Area (MPA) network:** The protection provided to Australia's oceans by our Marine Park network was significantly downgraded in 2018. Strategic investment into MPAs will not only reverse these setbacks but also have the opportunity to enhance ocean protection.

- **Supporting 30x30 Goals in the Southern Hemisphere:** With the right leadership and investment, Australia can work with other countries within the region in a high-ambition coalition to drive effective implementation of the protection of 30 per cent of oceans by 2030.

- **Protecting Migration Corridors of Whales and Dolphins by Establishing Blue Superhighways:** Growing evidence shows whales and dolphins' vital role in ocean health and climate balance. However, much remains unknown about their habitats and movement patterns. Investment in this area will help identify new ways of conserving these magnificent animals and the communities that rely on them.

- **Establishing Transparent Sourcing Pathways in Pacific Tuna Fisheries:** There are growing calls internationally for greater transparency of fishing activity and demand for stricter traceability. To meet these international trade obligations, and to protect the fishing industry's future and our oceans' health, greater investment is required to deliver more transparent and better-manged fisheries. For further details about this work, see Project 7.

Project Examples

In the following section of the submission, we have included detailed project examples for each of the three priority investment areas. These projects contribute to the total investment figures. However, they are not exhaustive but instead illustrate where funds could be directed to help achieve the Government's priorities in Australia's transition to a sustainable and low-carbon economy, for the benefit of people and nature.

Each project example has been drafted by experts, grounded by good science, and prioritised due to the value they yield for people, nature and the economy.

The table below summarises the project examples, the relevant department and the total funding commitment over the forward estimates.

No.	Proposal	Department/Agency	Funding
Investment Area 1: Wildlife Protection and Habitat Regeneration			
1	National Vegetation Monitoring and Mapping	Department of Climate Change, Energy, the Environment and Water	$100m over 4 years
2	Right-Way Fire: A Nature-Based Solution for Climate	Department of Climate Change, Energy, the Environment and Water	$5.4m over 4 years
3	Indigenous Women Rangers Environmental Network	National Indigenous Australians Agency	$8.5m over 4 years

4	Greater Glider Conservation	Department of Climate Change, Energy, the Environment and Water	$7.9m over 4 years
Investment Area 2: Climate Action and Renewables Transition			
5	Materials and Embodied Carbon Leaders' Alliance	Department of Climate Change, Energy, the Environment and Water	$1.69m over 4 years
6	Climate Resilient by Nature (Phase 2)	Department of Foreign Affairs and Trade Department of Climate Change, Energy, the Environment and Water	$32m over 4 years
Investment Area 3: Safeguarding our Oceans and Coastal Communities			
7	Transparency and Traceability: The Complementary Pillars of Sustainable Pacific Tuna Fisheries	Department of Foreign Affairs and Trade Australian Fisheries Management Authority (Department of Agriculture, Fisheries and Forestry)	$10m over 4 years

Project 1

Project Title: National Vegetation Monitoring and Mapping Program

Affected Agencies: Department of Climate Change, Energy, the Environment and Water

Financial Implications: $100 million over four years

Cost of Project:

Activity	FY24-25	FY25-26	FY26-27	FY27-28	Total
Support a nationally consistent vegetation monitoring and mapping program	$25m	$25m	$25m	$25m	**$100m**

Project Outline and Rationale:
This project aims to develop a highly accurate national vegetation monitoring and mapping program. The project proposes the establishment of Australia's first national-scale native vegetation mapping and monitoring system to produce a timely and transparent national account of native vegetation, including vegetation extent, loss, gain, condition, and attribution of that loss or gain to assist the Australian Government in its decision-making. This mapping project will allow the Australian Government to monitor progress against its national and international commitments (e.g., Glasgow Leaders' Declaration on Forests and Land Use, Convention on Biological Diversity, Leader's Pledge for Nature and EPBC Act) to stopping deforestation and degradation and ensuring restoration, as well as enabling the Government to support Australian beef producers to maintain market access to a growing deforestation-free market.

The National Carbon Accounting System (NCAS) currently monitors and reports on native vegetation loss and regrowth at a national scale. In comparison, the Statewide Landcover and Tree Study (SLATS)[23] programs monitor this at a state level. Because each system or program was developed for a different purpose, there are wide discrepancies between the two. This leaves a major gap in our understanding of the extent and location of native vegetation change in the landscape.

As reported by the *State of Environment Report 2021,* habitat loss and clearing are the second most significant causes of extinction of Australian species since colonisation (62 species). The NCAS mapping does not reflect how land use is modifying native vegetation habitat, and there is a lack of clarity about the extent of clearing and why it is being cleared, and the extent and drivers of regrowth. The report concludes that the lack of national vegetation management results in different approaches to monitoring and defining native vegetation by the states and territories.

Eastern Australia is a global front for deforestation and forest degradation, with approximately 500,000 hectares of deforestation and land clearing and 40,000-60,000 hectares of public native forest logging per year. There is an urgent need for a national system that accurately and transparently monitors and reports on native vegetation loss, regrowth, and attribution of loss, as well as the integrity of the vegetation in a timely and consistent way. This is essential for many reasons, including:

[23] Department of Environment and Science, Queensland Government (2023). Statewide Landcover and Trees Study (SLATS). https://www.qld.gov.au/environment/land/management/mapping/statewide-monitoring/slats; Department of Planning and Environment, NSW Government (2023). 2020 landcover change reporting. https://www.environment.nsw.gov.au/topics/animals-and-plants/native-vegetation/landcover-science/2020-landcover-change-reporting

- Measuring progress towards national goals and international targets.
- A nationally consistent framework for identifying and informing carbon accounting and markets, bushfire recovery and biodiversity protection and recovery.
- Accurate reporting on the impact of land clearing and degradation on Australia's emissions and biodiversity.
- Supporting Australian farmers to verify in a nationally consistent way that their produce does not originate from deforested or degraded land, and in doing so, enables greater access to the European Union and other markets.
- Recognising the world-class environmental protection outcomes that many farmers and pastoralists are already implementing on their own lands. Improving spatial data accuracy would help promote and reward these responsible actions as good business decisions.
- Driving private sector market investment (i.e. biodiversity markets).

We need regular, transparent and rapid monitoring of vegetation changes to ensure accurate information for reporting progress towards national and international commitments. States and territories that publish the information do so on an *ad-hoc* basis, sometimes years after the change has occurred. A national approach could support the states and territories in developing a consistent, coordinated approach while reducing the duplication of effort. In collaboration with the Wentworth Group of Concerned Scientists, WWF-Australia has begun exploring a national standard required for mapping vegetation loss, gain, and attribution, and is exploring a methodology for national-scale mapping.

Outcomes:
The project will deliver a fit-for-purpose national deforestation, reforestation and condition monitoring and mapping capacity. This will allow the Australian Government to confidently report and monitor progress towards international and national commitments relating to deforestation.

This project would also enable the Australian Government to support Australian producers to continue accessing a growing demand for deforestation-free products in domestic and international markets. For example, the European Union Deforestation Regulation (EUDR) was introduced in 2023 and prevents companies from placing commodities, such as beef, linked with deforestation onto the EU market.[24] Additionally, over 6,000 companies have signed up to the Science Based Targets initiative (SBTi), which includes mandatory target setting for deforestation-free products. As such, monitoring and reporting on vegetation change is more important than ever.

Brief Strategic Policy Alignment:
The Nature Positive Plan includes the Government's commitment to "improve the availability, interoperability, management and quality of national environmental data, and address key data and capability gaps".[25]

The project would also assist in achieving the commitment in the Australian Labor Party's Platform 2023 to "work with the States and Territories on national vegetation mapping and monitoring programs".[26]

[24] Currently, only a small proportion of Australian beef is exported to the EU Market. However, this is largely due to Australia's access being limited by a system of tariff-rate quotas, with out-of-quota tariffs constraining trade above the quota volumes. The EU-Australia Free Trade Agreement (FTA) is currently under negotiation and is expected to deliver greater access for red meat exports to the EU.
[25] Department of Climate Change, Energy, the Environment and Water (2022). *Nature Positive Plan: better for the environment, better for business*, DCCEEW, Canberra, December. https://www.dcceew.gov.au/sites/default/files/documents/nature-positive-plan.pdf pg29
[26] 29th National Conference (2023). *Australian Labor Party National Platform.* https://www.alp.org.au/media/3569/2023-alp-national-platform.pdf pg. 52-53

Activities and Implementation:
The project would consist of three key components:

1. **Mapping:** Review and establish best practice remote sensing mapping tools and methods to monitor national vegetation coverage and type changes. Purchase necessary datasets and implement best practice methods.

2. **Governance:** Review and identify governance arrangements to meet the above requirements. This may involve support for establishing a collaborative expert group to provide ongoing oversight, and coordination of data infrastructure and capability to ensure its long-term success.

3. **Access:** Establish an online platform that will allow producers and suppliers to verify source and landscape impact.

WWF-Australia understands the combined cost of the Statewide Landcover and Tree Study (SLATS) programs in Queensland and NSW (the two states which together account for more than 80 per cent of land clearing nationally) is approximately $7 million per annum. It is believed that the states and territories will continue to fund vegetation change mapping, there will be economies of scale in developing mapping for the entire country, cost efficiencies, as well as improvements in technology and methods and potential co-funding arrangements with states and territories.

Project 2

Project Title: Right-Way Fire: A Nature-Based Solution for Climate

Affected Agencies: Department of Climate Change, Energy, the Environment and Water

Financial Implications: $5.4 million over four years

Cost of Project:

Activity	FY24-25	FY25-26	FY26-27	FY27-28	Total
Program costs	$725,000	$675,000	$625,000	$625,000	**$2.65m**
Personnel costs	$436,000	$497,000	$560,000	$622,000	**$2.115m**
Administration costs	$160,000	$160,000	$160,000	$160,000	**$640,000**
Total	**$1.321m**	**$1.332m**	**$1.345m**	**$1.407m**	**$5.405m**

Project Outline and Rationale:
An Indigenous-led program of work, this project aims to take fire management in northern Australian savannas beyond the successes of carbon abatement to focus on a comprehensive Healthy Country approach.[27]

The challenges of sustainable development, biodiversity loss, and climate change are interlinked, as are their solutions. Leveraging Indigenous and Western science, the project addresses the key challenges of climate change and biodiversity loss, through Indigenous nature positive leadership and Nature-based Solutions for Climate (NbS4C) with socio-economic outcomes.

Northern Australian Right-Way Fire management[28] is a NbS4C. It combines Indigenous ecological knowledge with cutting-edge fire science to burn landscapes in a way that protects wildlife, reduces greenhouse gas emissions, increases carbon sequestration, and has substantial and numerous cultural and socio-economic benefits.

The project aims to engage stakeholders in collectively developing and refining a groundbreaking NbS4C approach that is high integrity, innovative, efficient, and cost-effective. The approach assesses biodiversity outcomes from fire management to avoid tipping points beyond which ecosystems cannot recover. The proposed NbS4C project will advance this approach under Traditional Owner leadership to apply it to the unique environment of the Kimberley in Western Australia. By incorporating aspects of biocultural conservation, this innovative climate adaptation approach can improve bushfire management to ensure a sustainable, climate-appropriate strategy.

WWF-Australia has fostered long-term relationships with Traditional Owners, Healthy Country teams and rangers in the Kimberley over the past twenty years. This project builds on foundational work in the North Kimberley bioregion funded by WWF-Australia and Lotterywest investment, where tools were developed to map fire and habitats at a fine scale over the largest area of landscape in the world. Commencing in the Kimberley, the next phase of the project will support the development of

[27] Wunambal Gaambera Aboriginal Corporation (2010). *Wunambal Gaambera Healthy Country Plan – Looking after Wunambal Gaambera Country 2010 – 2020*. https://wunambalgaambera.org.au/healthy-country/healthy-country-plan/
[28] Russell-Smith, J., Cook, G.D., Cooke, P.M., Edwards, A.C., Lendrum, M., Meyer, C. and Whitehead, P.J. (2013). Managing fire regimes in north Australian savannas: applying Aboriginal approaches to contemporary global problems. *Frontiers in Ecology and the Environment*, 11: 55-63. https://doi.org/10.1890/120251

nature-positive methods and mechanisms to heal Country and strengthen sustainable Indigenous-led Country management through Right-Way Fire. In this way, Kimberley Traditional Owners lead the way forward, catalysing systems change in world-leading bushfire management through sustained cultural practice.

Outcomes:
The proposed program will result in measurable benefits for people, nature, and climate under the leadership of Traditional Owners and a resulting focus on biocultural (biological and cultural) restoration, including:

- An Indigenous-led groundbreaking NbS4C approach to assess fire impacts on savanna biodiversity.
- Fire management in northern Australian savannas will be taken beyond the crucial stage of interrupting the wildfire cycle that has devastated the region for many decades, to focus on a comprehensive Healthy Country approach where biodiversity thrives.
- Enhancing Right-Way Fire management for Healthy Country will reinforce the link between fire management practices and Traditional Owner priorities for Country, sustaining cultural connection and authority.
- Through Traditional Owner guidance, Right-Way Fire management will contribute to the recovery of many priority iconic plant and animal species in the Kimberley. Local capacity and capability will be built. Rangers and land managers will develop their skills, and Healthy Country teams will benefit from improved capabilities and capacity in biodiversity monitoring techniques and nature-based markets. This will also further enhance socioeconomic outcomes for Indigenous communities.
- Two-way learning and knowledge co-creation opportunities will be fostered. Key biocultural metrics will be developed to establish a holistic approach to healing Country with Right-Way Fire.
- Transparency in reporting will be strengthened including through the development of assessment methods, adaptive management frameworks and reporting dashboards.
- Collective actions and investments of all stakeholders will create shared responsibility and ambition.

Brief Strategic Policy Alignment:
The proposed program aligns with a number of Australian Government strategic policies and priorities, including:

- **Nature Repair Market** – facilitate Indigenous-led development of nature-based market mechanisms that respect and preserve biocultural diversity and deliver measurable benefits at scale for people, nature, and climate.
- **Carbon and biodiversity markets in Australia** – influence markets and policies based on Indigenous aspirations and perspectives and contribute to the alignment of carbon and biodiversity markets in Australia.
- **Advancing the use of nature-based solutions** – high quality, high integrity example of nature-based solutions for climate producing measurable benefits for climate, nature, and people.
- **Australia's commitment to the Paris Climate Agreement** – carbon mitigation and sequestration through improved savanna fire management.
- **The Global Biodiversity Framework and Taskforce for Nature-related Financial Disclosure** – provide inputs to support governments and companies to support activities focused on reducing and/or improving their impacts on nature and biodiversity.

This project will provide a platform for a multi-tenure, multi-organisational approach to leveraging funding and optimising project outcomes, as a result of substantial existing interest from various

actors including the State Government, pastoralists, and other NGOs working in the Kimberley and across northern Australia. There is further intent to partner with world-renowned ecological economists, Indigenous Peoples and Local Communities (IPLC's) from the Asia-Pacific region and diverse funding partners, including private donors, philanthropists and corporate entities.

Furthermore, the proposed project has significant potential to form the evidence base for influencing carbon and biodiversity markets policy, particularly around premium pricing for Australian Carbon Credit Units (ACCU's) with cultural and biodiversity co-benefits as well as the potential Nature Repair Market.

Finally, the project has the potential to become a highlight at the COP29 and COP30 in 2024 and 2025 respectively, enhancing knowledge-sharing with Brazilian Indigenous communities who are managing forest fires and the savannas of the Cerrado.

Activities and Implementation:
The proposed program will focus on delivering activities to develop and refine an innovative method to assess biodiversity outcomes from fire management.

The pilot phase of this project produced high-resolution tools required to apply Ecological Thresholds analysis across all north Kimberley carbon project areas, including the largest extent, highest resolution fire mapping of any landscape in the world. The proposed project would build on this approach by:

- Trialling it in new environments (i.e., the North Kimberley bioregion) and across various land tenures (i.e., Indigenous estate, pastoral properties, conservation reserve) to increase its relevance and applicability across northern Australia
- Improving the accuracy of the approach through extensive on-ground verification
- Providing further refinement by determining how thresholds are affected by key contextual underpinnings like rainfall, cattle stocking rates, fuel types, scale etc.
- Developing an online dashboard for stakeholders (modelled after Savanna Monitoring & Evaluation Reporting Framework (SMERF)[29] developed by project partners at Charles Darwin University and North Australian Fire Information (NAFI)[30] for fire metrics reporting) to enable transparency.

Accurately determining biodiversity outcomes associated with savanna fire management currently requires continuous and extensive on-ground monitoring. Such methods are incredibly costly and inefficient, as they typically require the use of helicopters to reach remote survey locations, and image processing can take months and is often outsourced to contractors. In contrast, this project would aim to enhance and enable accurate biodiversity estimates through satellite-derived remotely sensed data. The replacement of ongoing monitoring with occasional verification through on-ground surveys will significantly increase cost-effectiveness, particularly in vast and remote regions common across northern Australia, and principally support resource-strapped and time-poor Indigenous ranger groups.

Activities will include reviewing fire response groups to ensure they adequately capture the greatest regional conservation and cultural values; refinement of the spatial range and habitat over which threshold metrics are applied; and on-ground testing of metric levels to determine whether biodiversity response aligns with thresholds of potential concern. The review will be undertaken by a committee of Traditional Owners in the region. Refinement and on-ground testing will be undertaken by Indigenous rangers in collaboration with trusted scientists.

[29] Savanna Monitoring & Evaluation Reporting Framework - SMERF. https://smerf.net.au/
[30] North Australian Fire Information - NAFI. https://firenorth.org.au/

Project 3

Project Title: Indigenous Women Rangers Environmental Network (WREN)

Affected Agencies: National Indigenous Australians Agency

Financial Implications: $8.5 million over four years

Cost of Project:

Activity	FY24-25	FY25-26	FY26-27	FY27-28	Total
State coordinators	$600,000	$900,000	$850,000	$825,000	**$3.175m**
State forums	$430,000	$580,000	$525,000	$490,000	**$2.025m**
National exchanges	$520,000	$570,000	$525,000	$490,000	**$2.105m**
National forum	$400,000	-	$400,000	-	**$800,000**
National coordination (handover to Indigenous PBC)	-	-	$350,000	-	**$350,000**
Total	**$1.950m**	**$2.050**	**$2.650**	**$1.850m**	**$8.5m**

Project Outline and Rationale:
WWF-Australia is proposing the Australian Government commit $8.5 million over four years to sustain and expand the Indigenous Women Environmental Rangers Network (WREN) and in turn, support the Government's commitment to achieve gender equity in the program by 2030. The expansion of the women's ranger program would resource new opportunities for professional development, capacity building, knowledge exchange and develop "one strong voice for women" for the social, economic and environmental benefits of all Australians.

The Women Rangers Environmental Network brings together Indigenous women from different ranger teams across the Northern Territory, Queensland and Western Australia and provides a forum to share their experiences and knowledge, combine their voices to improve their work for the environment and develop new career pathways for the benefit of both people and Country. Indigenous women, in general, have substantially lower rates of workforce participation (51.5 per cent) than Indigenous men (65 per cent) and non-Indigenous women (59.2 per cent).[31] Furthermore, women rangers make up less than 25% of the Indigenous workforce[32], which means aspects of their role in caring for Country cannot be fulfilled, with IPAs making up 50% of Australia's natural reserve system[33]. This ongoing systemic failure will remain a hurdle for Indigenous women unless proactive policy settings are developed in partnership through community-led processes. The WREN program has been a success and continues to prove that connection, sharing and supporting each other delivers real, transformational outcomes for women, their families and communities across Australia.

Today, WREN links almost 500 Indigenous women, primarily in the north of Australia, through women's regional coordinators, state and territory forums, leadership and mentoring training, national

[31] Australian Bureau of Statistics (2015). National Aboriginal and Torres Strait Islander Social Survey, 2014-15. Cat. no. 4714.0. https://www.abs.gov.au/ausstats/abs@.nsf/mf/4714.0
[32] Janke T, Cumpston Z, Hill R, Woodward E, Harkness P, von Gavel S, Morrison J (2021). *Indigenous: Enablers of caring for Country*. In: Australia State of the environment 2021, Australian Government Department of Agriculture, Water and the Environment, Canberra, https://soe.dcceew.gov.au/indigenous/management/enablers-caring-country, DOI: 10.26194/3JDV-NH67
[33] National Indigenous Australians Agency (2024). https://www.niaa.gov.au/indigenous-affairs/environment/indigenous-protected-areas-ipas

exchange programs and global advocacy and networking opportunities. Nationally, the WREN Knowledge Exchange program and Professional Development Program supports new and emerging women rangers, the intergenerational transfer of knowledge and experience, career development and emerging leaders in conservation. WREN has supported travel to international ranger forums, with the delegation in 2019 being the first time Indigenous rangers from Australia attended the World Ranger Congress in Nepal. In October 2023, four women from across the network and Country travelled to the Solomon Islands to share their knowledge and pioneer the Indigenous Women's Conservation Knowledge Exchange in partnership with Australian Volunteers International. In partnership with the University of Queensland and the Strong Women for Healthy Country Network (hosts of the NT WREN 'hub') the network has also begun a major research project that seeks to understand and amplify Indigenous women's leadership, fields of power which impact them, and further the many priorities of the network.

With limited resources, WREN has continued to expand and adapt, reflective of the varying needs, goals and resources of Indigenous women who care for Country. While some funding is available from philanthropists and other donors, this funding is insufficient to offer the level of resources to adequately support women rangers to care for Country.

Outcomes:
Aboriginal and Torres Strait Islander women rangers working in South-Eastern Australia face similar and unique challenges to those working elsewhere across the country. Some women work in small remnant ecosystems, protecting the last strongholds of endangered and vulnerable species. Others may work across vast protected areas managing and balancing both tourist and cultural spaces. All women rangers in Australia work on conserving Culture, Indigenous land management techniques, and the threat of pests and weeds. All have crucial roles within both conservation and their communities. Unlike most rangers working in Northern Australia on large IPA's (Indigenous Protected Areas), rangers in NSW and Victoria often work on a mix of land tenures and fall into different categories by Western definition, with titles such as 'field officers' or 'bush regenerators'. However, like the North, most women work for Local Aboriginal Land Councils and other Indigenous organisations, yet have often been excluded from or had reduced support and resources for their programs. NSW faces ongoing threats of fires, floods and species extinction, and a devastating number of invasive species have spread from and since colonisation in the area. There is incredible value in exchanging knowledge on the management of such threats as they spread, from a practical environmental viewpoint, as well as in the management of support, partners and bureaucracy that often impedes the ability of rangers to carry out their work. As demonstrated through WREN events, networks, exchanges and forums so far, the support for women leaders to connect, share, teach and learn elevates women's voice, authority and capacity to care for Country.

There are many socioeconomic, cultural and environmental benefits provided by Indigenous rangers to all Australians, with IPAs making up approximately half of the country's national reserve. Indigenous rangers bring a depth of cultural attachment and unique land management skills to the nationally and internationally important task of 'Caring for Country'. Supporting the expansion and long-term Indigenous leadership of a national network to support and encourage Indigenous women working on Country will help to extend these social, environmental and economic benefits to more communities and more ecosystems across Australia and represents excellent value for money for the Federal Government.

Brief Strategic Policy Alignment:
WWF-Australia has strongly welcomed the Government's commitment to double the number of Indigenous rangers and applauds the Government for acknowledging the need to achieve gender equality within the Indigenous Ranger Program. While dedicated funding for women ranger positions will be necessary to achieve this goal, it will not be sufficient to address the unique structural and individual barriers to women's full participation in the ranger program. A national network for

Indigenous women rangers is a strategic initiative to mainstream the important role that Indigenous women play in caring for Country. It is a critical and proven solution that can develop professional pathways for Indigenous women rangers.

The Australian Government leads the Indigenous Ranger Program which, in addition to being a job-creation strategy, plays a vital role in the protection and sustainable management of Australia's precious biodiversity. The Indigenous Ranger Program is also a critical link in the continuation of the world's oldest living culture, enabling people to live and work on their ancestral lands, often in areas where few other employment opportunities exist.

2,100 (equivalent to 895 full-time) Indigenous ranger positions are currently funded under the program predominantly distributed across Northern Australia and Central Australia. The Indigenous Ranger Program has been an unqualified success and provides significant social and community benefits in remote and isolated communities.

In many remote areas, ranger roles are a major source of employment for Indigenous populations. However, because of structural barriers further enhancing gender inequities, Indigenous women are often socioeconomically marginalised and unable to access equal opportunities. As identified above, many traditional practices in caring for Country are associated with women only. Exclusive knowledge and practices are passed down from one woman to another over different generations, which further necessitates gender-specific programs of work to maintain and expand the potential of Indigenous women rangers and their traditional roles.

A national WREN program also aligns with the prioritisation of Indigenous-led conservation highlighted in the *State of the Environment Report 2021,*[34] the *2022-2032 Threatened Species Action Plan*,[35] and the *Environment Ministers Meeting Communique* of 21 October 2022.[36]

Activities and Implementation:

State Coordinators ($3.175 million over four years)
Female coordinators based in state-level network hubs would ensure specific local needs are met. These coordinators would be hosted by local Indigenous Land Management organisations and would develop yearly work plans for the goals and priorities as identified by the women in their network. Ongoing progress reports using the developed work plans, reporting templates and case studies would enable effective monitoring and evaluation against short and long–term targets both regionally and nationally.

Annual State Forums ($2.025 million over four years)
Annual state forums (and some bi-annual forums) provide rare opportunities for women rangers to gather in large numbers, connect on common priorities, action outcomes and plan activities, and structure events for the network. For many, they also provide a rare opportunity to meet other women caring for Country and support each other in their struggles and inspirations.

WREN Knowledge Exchange Program ($2.105 million over four years)
The WREN exchange program seeks to address key training and capacity-building needs across the network. Support to attend WREN events and training opportunities is crucial to the entire program and is the most advocated by both the women rangers and coordinators. Currently, the WREN exchange program facilitates Indigenous women who care for Country across Australia to meet up on

[34] Cresswell ID, Janke T & Johnston EL (2021). *Australia state of the environment 2021: overview*, independent report to the Australian Government Minister for the Environment, Commonwealth of Australia, Canberra. DOI: 10.26194/f1rh-7r05. https://soe.dcceew.gov.au/.
[35] Department of Climate Change, Energy, the Environment and Water (2022). *Threatened Species Strategy Action Plan 2022–2032*, DCCEEW, Canberra, September. CC BY 4.0 https://www.dcceew.gov.au/environment/biodiversity/threatened/action-plan.
[36] Department of Climate Change, Energy, the Environment and Water (2022). *Environment Ministers Meeting - Agreed Communique*, 21 October, 2022. https://www.dcceew.gov.au/sites/default/files/documents/emm-communique-21-oct-2022.pdf.

Country, exchange knowledge and skills, and engage with and build a national WREN to develop "one strong voice for women" to influence conservation programs and bring Indigenous women's perspectives to decision-making on their Country. WWF-Australia is currently working with the Government's Australian Volunteers Program to further Indigenous women ranger exchange with community partners in the Pacific. This can be expanded on and leveraged via a national WREN exchange program to further facilitate domestic and international knowledge exchange.

National Forum ($800,000 over four years)
The National Forum is being co-designed with Indigenous women to discuss and find solutions to the needs of women rangers and the causes of gender imbalance. The WREN National Forum Working Group is being formed through consultation with the Women Rangers Network, partners at Mimal Land Management, the Message Sticks Group, the Strong Women for Healthy Country and the University of Queensland, who are supporting this research to ensure alignment with diverse priorities and long-term, scalable solutions. Together the groups will decide the timeline of key activities, delegation of responsibilities and the location for the Forum. They will meet with Traditional Owners, consult, and plan the program and agenda for the event, including speakers and facilitators. The National Forum will maximise this momentum among Indigenous women rangers to design their future, by building a community of practice and knowledge exchange with better personal and collective leadership skills, supported by structure, systems, goals, and programs that they design and manage. It also aims to develop an understanding of the ways in which Indigenous women influence and lead both within their communities and across the broader Australian community (Indigenous and non-Indigenous) for the benefit of all people and nature.

National Coordination (transitioning management to Indigenous Prescribed Body Corporate) ($350,000 over four years)
The long-term vision for WREN is a sustainable, Indigenous-led, national network that supports Indigenous women caring for Country to address the structural and agential obstacles to their participation and empowerment through raising "one strong voice for women". While WWF-Australia can, and should, continue playing an important role in supporting and learning from WREN, it is important that the management and leadership of the Network be transitioned to a nationally focused Indigenous organisation.

Value for Money:
There are many socioeconomic, cultural and environmental benefits provided by Indigenous rangers to all Australians with Indigenous Protected Areas (IPAs) making up approximately half of the country's national reserve. Indigenous rangers bring a depth of cultural attachment and unique land management skills to the nationally and internationally important task of 'Caring for Country'. Indigenous ranger programs provide real jobs for Indigenous people to be proud of and are one of the few Indigenous programs to have shown significant measurable improvements in the health and well-being of participating Indigenous communities. A review conducted by Social Ventures Australia for the Department of Prime Minister and Cabinet published in 2016 reported a social return on investment of up to $3.40 for every dollar spent in Indigenous Protected Areas, with those areas employing Indigenous rangers demonstrating higher returns. A review by Allens Consulting found the true costs of the Working on Country program were at least 17-23 per cent less than book costs when increased taxation revenue and decreased welfare payments were taken into account.[37] In the 2014–15 National Aboriginal and Torres Strait Islander Social Survey (ABS 2017a), 55 per cent of Indigenous women cited 'no jobs in local area or line of work' or 'no jobs at all' as a barrier to finding employment. In remote areas, this figure was 66 per cent.[38] Indigenous ranger jobs address this barrier with real jobs that people are proud to do. Supporting the expansion and long-term Indigenous

[37] Indigenous Protected Areas and Indigenous Rangers: Protecting nature, creating jobs, transforming lives. *The Pew Charitable Trusts 2019 Budget Submission.*
[38] Department of Agriculture, Water and the Environment (2021), *State of the Environment Report,* https://soe.dcceew.gov.au/.

leadership of a national network to support and encourage Indigenous women working on Country will help to extend these social, environmental and economic benefits to more communities and more ecosystems across Australia and represents excellent value for money for the Federal Government.

Project 4

Project Title: Greater Glider Conservation

Affected Agencies: Department of Climate Change, Energy, the Environment and Water

Financial Implications: $7.95 million over four years

Cost of Project:

Activity	FY24-25	FY25-26	FY26-27	FY27-28	Total
Establishment and operation of recovery team	$250,000	$100,000	$50,000	$50,000	**$450,000**
Development of recovery plan	$2m	$500,000	-	-	**$2.5m**
Implementation of recovery plan	-	-	$2.5m	$2.5m	**$5m**
Total	**$2.25m**	**$600,000**	**$2.55m**	**$2.55m**	**$7.95m**

Project Outline and Rationale:

The greater glider (*Petauroides volans*) is just one of many unique native species in Australia at risk of extinction. The greater glider occurs in eastern Australia, where it has a broad distribution from around Proserpine in Queensland, south through New South Wales and the ACT, to Wombat State Forest in central Victoria. Once relatively common throughout the forests of eastern Australia, populations have crashed by as much as 80 per cent in the last twenty years due to habitat destruction, including land-clearing and logging, as well as bushfires fuelled by a rapidly changing climate.[39]

The greater glider is a species with quite specific habitat requirements. They are an arboreal, hollow dependent, folivorous, nocturnal marsupial, with relatively long generations, limiting their ability to recover from disturbances. Largely restricted to eucalypt forests and woodlands of eastern Australia, they are an important forest flagship species with a distribution that overlaps with over 800 EPBC Act-listed threatened species. The greater glider's conservation and habitat requirements closely align with the broader needs of hundreds of federally listed threatened species and several threatened ecological communities. These shared conservation needs include healthy mature forests with access to hollow bearing trees, sufficient habitat free from invasive species, ongoing community involvement in management efforts, and population monitoring. On their current trajectory of decline, it is likely that the greater glider will become extinct in the future, due to known and avoidable key threats.

The demise of this species would be catastrophic not just for this species, but for the hundreds of threatened species that overlap in distribution and have similar conservation needs. Without a collaborative effort, bringing together a range of experts to inform required steps and conservation actions, it is highly likely that the few remaining strongholds of this species will be destroyed or

[39] Lindenmayer D.B et al. (2011). How to make a common species rare: A case against conservation complacency. https://www.sciencedirect.com/science/article/abs/pii/S0006320711000838

degraded one after the other by either logging or fire and at some point, in that chain of events the species will become functionally extinct, with no opportunity for recovery. The choices currently being made will either knowingly push the greater glider closer to extinction, or, if appropriate action is taken, there is a real opportunity to demonstrate what a successful recovery effort for an endangered species can look like.

To quote a Wurundjeri Traditional Owner, “All native animals on Country are our totems, spirit protectors, including the greater glider. They hold significant roles in the balance of Country and our spiritual connections.” Efforts are currently underway to connect with Traditional Owners in Victoria to ascertain the cultural significance of this species and the level of interest in these communities in being involved in conservation actions.

Conservation action to save the greater glider from extinction is urgently required, but currently, there is no recovery team or recovery plan in place to guide recovery actions. Recovery teams are a collaboration of partners brought together with the common objective of coordinating the implementation of a conservation plan for a threatened species. Accordingly, a greater glider recovery team would consist of glider experts, land management practitioners, members of non-government organisations, State/Territory and Commonwealth government officers, Traditional Owners and local community members. This recovery team would lead the development and implementation of the greater glider recovery plan, which would aim to maximise the long-term persistence and recovery of greater gliders in the wild. Without this clear direction, recovery efforts may be misguided, lack coordination, and have reduced effectiveness. Recovery plans should state what must be done to protect and restore important populations of threatened species and habitats, as well as how to manage and reduce threatening processes.

The recovery team would be tasked with developing the recovery plan, which would advise on priority recovery actions for the greater glider which may include: protecting and maintaining sufficient areas of suitable habitat, especially in the aftermath of disturbances such as wildfires and logging; revising prescribed burning practices; protecting hollow-bearing trees on private property and in roadside reserves; and considering the use of supplementary habitats such as nest boxes and artificial hollows that may assist in the species persistence and recovery.

Stopping decline and supporting the recovery of the greater glider is complex due to the vast variety of threats, many of which may still be unidentified. Addressing these needs and complexities is a pressing requirement for a high-level plan to mitigate threats, gauge the extent of support required from key stakeholders, the need for prioritisation and a highly adaptive management process. Existing mechanisms are not adequate to address these needs, thereby underlining the need for a recovery plan developed by and implemented through a recovery team.

Outcomes:
As highlighted above, the proposed project would contribute to achieving the following outcomes:

- Establish a greater glider recovery team comprised of glider experts, land management practitioners, members of NGOs, State/Territory and Commonwealth government officers, Traditional Owners and local community members
- Develop and implement a recovery plan to maximise the long-term survival of greater gliders in the wild
- Suggest and implement improved recovery actions, including protection and maintenance of critical habitat following disturbances (e.g. bushfire and logging) in both public and private lands, installation of nestboxes and artificial hollows and improvements to prescribed burning practices.

Additionally, the greater glider is proposed as one of at least 10 species of cultural significance that WWF-Australia will work on, in collaboration with Traditional Owners, over the next four years. This species has already been an icon of WWF-Australia's post-bushfire recovery works on the East Coast. In addition, the greater glider has been a key figure in WWF-Australia's campaign to end native forest logging and was particularly prominent in the efforts to highlight logging in glider habitat within the greater glider stronghold, Tallaganda State Forest.

Brief Strategic Policy Alignment:
The Threatened Species Scientific Committee recommends that there should be a greater glider recovery plan in place.[40] The Australian Government's *Threatened Species Action Plan 2022-2032* maps a pathway to protect, manage and restore Australia's threatened species and important natural places. The Plan includes a list of 110 threatened species that are at imminent risk of extinction. Despite their rapid trajectory of decline and the urgency of actions needed to arrest that decline, the greater glider has not been included in the Plan. However, the Priority Places outlined in the Action Plan for the 110 priority species include critical habitat for greater gliders, such as the Greater Blue Mountains and the Southeast Coastal Ranges. These Priority Places have been identified to receive actions for improving the condition of the place for threatened species and threatened ecological communities.

Activities and Implementation:
The following activities are proposed for implementation to achieve the recovery and persistence of greater gliders in the wild:

- Development of a recovery team and recovery plan to guide and coordinate conservation and recovery actions for the species.

- Restoration of degraded forest habitats with a key focus on climate-ready restoration in important glider habitats.

- Piloting and developing methods, standards, and metrics to model opportunities to financially sustain and scale restoration work (including options for future application of biodiversity and carbon credits).

- Exploration of opportunities with First Nations groups for financially self-sustaining restoration methods that provide ongoing and sustainable possibilities for people to work on Country. As management of some former state forests may return to Indigenous groups, it will be critical to demonstrate viable and sustainable methodologies, with proven positive outcomes for biodiversity for working on Country. Such projects would contribute to increasing climate change resilience and on-ground restoration of areas of forest putting flagship and culturally important species on a path of recovery in the face of an increasingly unstable climate.

[40] Department of Climate Change, Energy, the Environment and Water (2022). *Conservation Advice for* Petauroides volans *(greater glider (southern and central))*. Canberra: Department of Climate Change, Energy, the Environment and Water. http://www.environment.gov.au/biodiversity/threatened/species/pubs/254-conservation-advice-05072022.pdf

Project 5

Project Title: Materials and Embodied Carbon Leaders' Alliance (MECLA)

Affected Agencies: Department of Climate Change, Energy, the Environment and Water / Department of Infrastructure, Transport, Regional Development, Communications and the Arts

Financial Implications: $1.692 million over four years

Cost of Project: The total funding required is $3.384 million, with half the total expected contribution to come from the Federal Government, and the other half from state and industry contributions, as follows:

Activity	FY24-25	FY25-26	FY26-27	FY27-28	Total
Continuation of the Secretariat for MECLA	$423,000	$423,000	$423,000	$423,000	**$1.692m**

Project Outline and Rationale:
MECLA is an industry-led alliance of 150+ private companies, research institutions and government agencies acting as a catalyst to accelerate the decarbonisation of construction materials through deep engagement, collaboration and problem-solving, with seed funding from the New South Wales and South Australian Governments and the private sector. This four-year funding proposal will help support MECLA's ongoing work engaging industry and governments across all jurisdictions. The power of MECLA lies in bringing together both the demand and supply sides of the construction sector. MECLA aims to accelerate this progress, foster the market for low-emission building materials, build capacity, and inform government policy. Funding will also be sought from other jurisdictions, research entities and the private sector.

In Australia, the built environment is responsible for a quarter of Australia's carbon emissions.[41] At present, over 80 per cent of these emissions are associated with operational carbon – the kind of carbon emitted during processes such as lighting and heating buildings. The other 16 per cent comes from embodied carbon – the emissions from building materials, and the processes needed to create, demolish and re-use buildings. While operational emissions will decline with the decarbonisation of the Australian energy grid, embodied carbon will increase to an estimated 85 per cent of the built environment by 2050[42] if adequate action is not taken in a timely manner.

Embodied carbon comes from the manufacturing, transport and construction of our buildings and infrastructure. Construction materials currently account for 5-10 per cent of Australia's total emissions.[43] To reach Net Zero, Australia must contend with embodied carbon as part of whole-of-life considerations. There are many challenges and interventions required to achieve decarbonisation in the built environment, and these will require 'radical collaboration' across supply chains, competitors,

[41] Van der Heijden, J. (2017). From leaders to majority: a frontrunner paradox in built-environment climate governance experimentation, *Journal of Environmental Planning and Management 61*(1):1-19.DOI:10.1080/09640568.2017.1350147
[42] Thinkstep-anz (2021). *Report on embodied carbon and embodied energy in Australia's buildings.* https://www.thinkstep-anz.com/resrc/reports/embodied-carbon-and-embodied-energy-in-australias-buildings-gbca/
[43] Infrastructure Sustainability Council (2022). *IS Impact Notes: Low Embodied Carbon Materials*, p.2. http://iscouncil.wpenginepowered.com/wp-content/uploads/2022/07/IS-Impact-Notes-Low-embodied-materials.pdf

governments, and industry to successfully make the change. This challenge led to the establishment of the Materials and Embodied Carbon Leaders' Alliance (MECLA).[44]

The urgency required to address the climate crisis, coupled with the complexity within the construction ecosystem, with many different players and moving parts, renders the sector's transition a challenging task for individual organisations to manage on their own. MECLA brings together stakeholders from all parts of the ecosystem to disrupt business as usual. Together, government, industry and research organisations collaborate through MECLA to reduce emissions in the construction sector and move forward in lockstep and at speed. MECLA brings together all stakeholders along the supply chain to work collaboratively across different Working Groups. MECLA refers to itself as a 'do-tank' that actively engages in a variety of practical tasks, such as organising educational events, sharing knowledge, and involving its members in various Working Groups focused on areas like demand-side initiatives, measurement and evaluation, guidance and knowledge sharing, as well as materials development. Additionally, other than the Secretariat, all industry participation across MECLA is voluntary.

Collaboration under the MECLA initiative has demonstrated that industry leaders are ready to act to help the Government decarbonise the construction sector. Many industry actors have set ambitious science-based targets and are ahead of governments in being able to deliver on the decarbonisation pathway. Through MECLA, we have shared industry learnings and perspectives with government agencies. Achieving ambitious targets requires an appropriate regulatory framework and government procurement practices that can help to unlock new market opportunities for lower carbon materials and collaborative contractor methods.[45] Investment from the Federal Government, matched with other jurisdictions, and the private sector can help accelerate the pace of change.

Outcomes:
Through early engagement with the industry, governments can effectively road test their policy ideas, procurement practices and methodologies. For example, after early engagement with the industry in NSW, Transport for NSW and Infrastructure NSW released their policy framework for climate change, establishing themselves as the leading agencies supporting the Government's decarbonisation targets. MECLA hopes to undertake similar early engagement and capacity building across different state jurisdictions with a key focus on transport and infrastructure and procurement policies and practices.

Government procurement practices and National Partnership Agreements with local councils and state jurisdictions should clearly articulate their requirements and support for lower carbon building materials. MECLA's Demand Side Working Group developed the concept for a Pledge Prerequisite, which has been introduced to various government agencies, whereby government contracts would require head contractors to submit a pledge outlining minimum embodied carbon targets before they are eligible to tender for government contracts. South Australia will be the first jurisdiction to adopt this policy from mid-2024. The NSW Government now requires all new public infrastructure proposals to report on their embodied carbon emissions and analyse options for reducing embodied carbon in design and construction stages, as well as prioritising the use of low carbon and recycled or remanufactured materials.[46] The approach aims for more ambitious policies and engagement across all jurisdictions, evolving and refining their policies by involving industries early, as done by MECLA, with the aspiration to involve member organisations in various jurisdictions.

[44] MECLA Website: www.mecla.org.au
[45] Worsley, H., Richter, M. & Nassar, A. (2022). *Best Practice Policy Development International Review of Policies and Programs for Low Emissions Building Materials*. https://mecla.org.au/international-review-of-policies-and-programs-for-low-emissions-building-materials/
[46] NSW Government (2023). *Government Gazette of the State of New South Wales,* Number 97–Environment,, 24 February 2023. https://gazette.legislation.nsw.gov.au/so/download.w3p?id=Gazette_2023_2023-97.pdf

Further investment is necessary to bolster the adoption of innovative, circular, and lower carbon materials, and by building a network of suppliers dealing in low carbon materials and supporting demand side off-takers, our goal is to accelerate the uptake of these innovative materials.

MECLA aims to be a national initiative over the next two years supporting ambitious approaches to reducing construction-embodied carbon and harnessing opportunities for industries prepared for a decarbonised economy. To transition towards Net Zero and to overcome the challenges of embodied carbon emissions, we need expertise across the supply chain working collaboratively.

Brief Strategic Policy Alignment:
The Government's commitment to meeting the Paris Agreement targets and its ambitions associated with creating a circular Australia by 2030 aligns with MECLA's purpose. Equally significant is the aim to generate new job opportunities within a transitioning, decarbonising economy, fostering innovation and progress for the nation.

Activities and Implementation:

1. **Standards, Policy and Regulation**: Continue to engage agencies across jurisdictions to promote business cases, policies and practices that support early industry engagement and build confidence in standardising low carbon materials in tendering and contracting. Examples include the development of the Industry Readiness Index.

2. **Procurement**: Early engagement for collaborative contracting through case studies as well as the development of a MECLA Guideline for procurement across each stage of the tendering and contracting process. Support Tier 2/3 contractors to upskill to facilitate their ability to respond to government expectations, in collaboration with organisations such as Engineers Australia.

3. **Manufacturing**: While we have seen some early progress in the aluminium and concrete sectors, there is much more to do to support manufacturers to retool through the development of more detailed definitions and guidelines for low carbon materials and seeking early offtake agreements and support for their innovation investment efforts across the major materials sectors.

4. **Skills, Training and Behaviour Change**: Ongoing events including Spotlight events, deep dive industry field trips and MECLA's new offering to support the industry with their problem-solving skills.

5. **Improved Data:** Measurement and access to accurate data are key to effectively engaging at the early design stages during the development and use of embodied carbon materials. Several programs have kickstarted, including one with NABERS (National Australian Built Environment Rating System) because of the MECLA initiative. We will continue engaging and collaborating through these programs into 2024 and beyond.

6. **Ongoing focus on outputs from our Working Groups:** MECLA has 10 working groups including Demand Side, Measurement, Guidance, Residential and Materials working groups (including steel, concrete, aluminium, other materials such as glass, bricks & masonry, asphalt, piping, circular and recycled materials).

This funding would provide for a small secretariat of 2 - 2.5 FTE staff and some funding towards events such as Spotlight events and deep dive industry field trips. This would enable early industry input and feedback into government policy and engagement with industry associations and researchers, including the Australian Sustainable Built Environment Council and the Researcher Network for Decarbonising the Building Industry.

Value for Money:
MECLA is a readily available industry engagement platform offering the Australian Government an opportunity to collaborate in their journey towards solving deep decarbonisation challenges. In the absence of initiatives such as MECLA, the Australian Government would need to tailor solutions from scratch in each jurisdiction. MECLA is a lean do-tank with considerable 'volunteer' time from self-identified industry leaders poised for impact at a large scale, offering significant potential to help Australia achieve a low-carbon future.

Project 6

Project Title: Climate Resilient by Nature (Phase 2)

Affected Agencies: Department of Foreign Affairs and Trade (Official Development Assistance budget) / Department of Climate Change, Energy, the Environment & Water (Climate Finance commitments)

Financial Implications: $80 million over 10 years (5+5 years)

Cost of Project: $32 million over 4 years (indicative breakdown)

Activity	FY24-25	FY25-26	FY26-27	FY27-28	Total
C1a: Phase 2 Design, incl. technical reviews and systematic identification of projects for continuation / expansion	$500,000	-	-	-	**$500,000**
C1b: Bridging funding to continue Pacific and Mekong project implementation during design phase	$5m	-	-	-	**$5m**
C2: Expansion: Scale-up projects (Mekong & Pacific)	-	$5m	$6m	$5.5m	**$16.5m**
C3: Challenge: Pilot, mainstreaming & graduation projects (Mekong & Pacific)	-	$2m	$2m	$1m	**$5m**
C4: Knowledge Hub: MEL, public diplomacy, research & learning	$300,000	$500,000	$500,000	$500,000	**$1.8m**
Program Management	$800,000	$800,000	$800,00	$800,000	**$3.2m**
TOTAL	**$6.6m**	**$8.3m**	**$9.3m**	**$7.8m**	**$32m**

Project Outline and Rationale:
Climate Resilient by Nature is a partnership between the Australian Government and WWF-Australia, advancing high-integrity, equitable nature-based solutions to climate change in the Indo-Pacific.

Nature-based Solutions (NbS) offer opportunities for climate change mitigation, adaptation, and resilience, and help communities that are the most vulnerable to climate change while protecting the ecosystem services upon which they and their countries' economies depend.

NbS is a different approach to delivering international development assistance which, when centred on the sustainable development aspirations of local communities, can achieve mutually reinforcing benefits for people, nature, and climate.

Launched at the November 2021 United Nations Framework Convention on Climate Change Conference of the Parties (COP) in Glasgow, Climate Resilient by Nature (CRxN) was originally conceived as a $9.5 million DFAT investment, and focused on supporting a portfolio of community-based NbS projects in the Pacific and the development of a central knowledge hub to facilitate learning and collaboration across the projects, as well as a broader community of practice. It has subsequently received additional funding from DFAT, growing to a $14.55m four-year program, supporting community-focused and high-integrity NbS projects in the Pacific and Southeast Asia (10 projects in 10 countries).

CRxN is managed by WWF-Australia with implementation by WWF offices in the Pacific and Southeast Asia, as well as other Australian international development NGOs and their local partners. While each project focuses on different ecosystems and seeks to address different climate challenges, they all support the development and climate resilience aspirations of local communities and contribute to a shared, growing understanding of nature-based solutions to climate change.

To date, more than 3,600 women and 1,100 participants from other potentially marginalised groups (youth, people with disabilities) have been directly involved in CRxN-supported NbS projects, which will collectively support the climate resilience of more than 20,000 community members across 10 countries. All projects include targeted strategies to support the development of sustainable livelihoods that enable ecosystem protection and sustainable management, with 40 per cent of project funding directed to projects engaging with and/or scoping engagement with high-integrity carbon market activities. Local community and government stakeholders are engaging in the program, including through research, analysis and roundtables supported by the Climate Resilient by Nature Indo-Pacific Knowledge Hub.

Since its launch in late 2021, CRxN has yielded valuable lessons about the challenges and opportunities to achieve climate and development objectives through nature-based solutions.

CRxN (Phase 2) will build on the successes, early impact, and learning from the first phase. It will include both ‘expansion’ and ‘challenge’ components, like Phase 1, to scale up and trial effective NbS approaches. It will support organisations, partners, and communities to develop and deepen their understanding and action in NbS. This will foster good practice NbS program interventions and mainstreaming of NbS in the program and beyond. Additionally, alongside the engagements facilitated by the Knowledge Hub, it will also support research, learning, and influencing to ensure NbS is recognised as a mainstream approach to support climate resilience in international development, with sustainable outcomes for both people and nature.

Outcomes:
The overarching goal of CRxN Phase 2 is to support communities in the Pacific and Southeast Asia to build long-term social and ecological resilience to climate change through NbS. One of the ways to achieve this is through the systematic integration of NbS into NGO and local partner programming. Success will be demonstrated by evidence of partners improving social and ecological outcomes in locations where they work, incorporating NbS into their programming outside of CRxN, and/or incorporating NbS in their organisational strategies.

CRxN Phase 2 will support a selection of exceptional Phase 1 projects to build on successes to date and support longer-term social and ecological resilience outcomes for communities across the Pacific and Southeast Asia. Evidence from these projects and the knowledge hub will inform partner government policy outcomes and support new grantees through the Phase 2 challenge fund.

Brief Strategic Policy Alignment:
Continued investment in CRxN is a pragmatic, impactful and robust way to align with Australia’s New International Development Policy’s climate target and the nature-positive indicators under the new Aid

Performance Framework. Climate change is identified in the policy as the greatest shared threat to all countries. CRxN is a flagship program designed to address this systemic challenge supporting both mitigation and adaptation goals, as well supporting biodiversity and nature-positive development. This is a win-win for people and the planet.

The second phase of the program will also support embedding First Nations Australians' perspectives in development. This could include cultural exchanges, training and other initiatives (for example, women rangers), to support culturally-led NbS.

Activities and Implementation:
CRxN Phase 2 will support a selection of exceptional Phase 1 projects to scale-up and scale-deep. The additional time, money and technical support will allow these projects to systematically monitor ecosystem and social outcomes and will allow these projects to become embedded at the community and local government levels. Evidence from these projects will be used to inform policy outcomes for NbS at provincial and national levels, and knowledge exchange sessions involving these 'first-movers' will support outcomes for new grantees through the Phase 2 challenge fund.

The CRxN Phase 2 Challenge Fund will be launched with an awareness and education campaign about the benefits of NbS drawing on evidence from Phase 1. A variety of NGOs will be awarded grants to pilot their NbS. They will commit to sharing evidence of impact and lessons both within the Fund and through forums in the countries where they operate.

Component 1: Phase 2 design and bridging funds ($5.5 million)
A one-year in-depth design period will ensure that Phase 2 is based on the best evidence and lessons from Phase 1, is competitive, and innovative. This will also support the development of a graduated 'challenge' that brings in new partners to diversify the NbS offering. Bridging funds for Phase 1 projects during this period will ensure continuity of implementation, partner capacity to engage in the design process, and the sustainability of program gains.

Component 2: Expanding Nature-based Solutions in the Pacific and Mekong ($16.5 million)
WWF-Australia will work with a selection of exceptional Phase 1 projects to scale-up and scale-deep their NbS. The additional time, money and technical support will allow these projects to systematically monitor ecosystem and social outcomes and will allow these projects to become embedded at the community and partner government levels. Evidence from these projects will be utilised to inform policy outcomes for NbS at provincial and national levels, and knowledge exchange sessions involving these 'first-movers' will support outcomes for new grantees through the Phase 2 challenge fund.

Component 3: Nature-Based Solutions Challenge in the Pacific and Mekong ($5 million)
Similar to Phase 1, a competitive open grants round that will support Australian international development NGOs and their partners in the Pacific to pilot and expand promising, emerging nature-based solutions is proposed for Phase 2. The Challenge Fund will be launched with an awareness and education campaign about the benefits of NbS drawing on evidence from Phase 1. A variety of NGOs will be awarded grants to pilot their NbS. They will commit to sharing evidence of impact and lessons both within the Fund and through forums in the countries where they operate.

Component 4: Expanded Learning, Innovation and Knowledge Hub ($1.8 million)
Building on Phase 1, the Hub, which sits at the centre of CRxN, will expand its activities beyond MEL, innovation and knowledge within the program, to support and influence the international development and environmental sectors, government, and the private sector to mainstream NbS into their programming, as well as scale-up and deepen gender and disability inclusive NbS practice. This will include fostering links between environment and development sectors, and regional initiatives/fora, as well as Indigenous/First Nations groups.

Value for Money:
The program achieves DFAT's eight Value for Money principles. The total cost of the program is cost conscious, the 'challenge' component encourages competition, and the knowledge hub is designed to foster evidence-based decision making (building on learning from Phase 1). WWF-Australia's organisational systems are proportionate to the capacity and need to manage results in the program and are calibrated to maximise efficiency. This includes the way in which the program manages performance and risk as well as accountability and transparency. As an NGO, WWF-Australia can provide a highly cost-effective management model and will deliver this phase of the program with a lean, efficient team.

The program is results and outcomes-focused, and Phase 2 will be backed by a thorough design process. The 'challenge' component of the program will also include financing to support experimentation and innovation, given NbS will be trialled in new contexts and with organisations who are still learning how to mainstream NbS into their development programs.

The program will support linkages and network development between participating organisations and partners, as well as Australian governments and governments in the Pacific and Southeast Asia regions. This includes drawing on WWF's 100+ offices around the world and a global network of technical experts and partners to support best practice NbS; supporting organisations to develop knowledge and learning products to inform policy development and practice in countries and in regions; and learning events and conferences to share from the program across a range of NbS issues.

Project 7

Project Title: Transparency and Traceability: Complementary Pillars of Sustainable Pacific Tuna Fisheries.

Affected Agencies: Department of Foreign Affairs and Trade / Australian Fisheries Management Authority (Department of Agriculture, Fisheries and Forestry)

Financial Implications: $10 million over 4 years

Cost of Project:

Activity	FY24-25	FY25-26	FY26-27	FY27-28	Total
Research Data-sharing	$250,000	$250,000	-	-	**$500,000**
Building Coalitions	$250,000	$500,000	$750,000	$750,000	**$2.25m**
Development of digital chain of custody solutions	$1m	$1m	$1.5m	$1.75m	**$5.25m**
Program management and technology implementation	$500,000	$500,000	$500,000	$500,000	**$2m**
Total	**$2m**	**$2.25m**	**$2.75m**	**$3m**	**$10m**

Project Outline and Rationale:
Tuna fisheries are one of the most lucrative transboundary fisheries globally. The largest tuna fishery in the world straddles the Western and Central Pacific Ocean (WCPO) and accounts for more than half the world's tuna catch. The total WCPO tuna catch is estimated to be worth more than US$22 billion at final point of sale and contributes between US$5 billion-$7 billion annually to Pacific Island economies.[47]

Transparency in fisheries is most often defined as a goal of delivering improved ocean governance and decision-making accountability. Demand for improved transparency is growing among consumers, NGOs and regulatory agencies in producing and importing countries to remove illegal, unreported and unregulated (IUU) fishing, protect worker rights on board fishing vessels and manage fisheries for environmental and economic sustainability. As part of a broader goal of achieving sustainable, legal and ethical tuna fisheries in the WCPO, an opportunity exists for the Australian Government to recalibrate its emphasis on Pacific tuna fisheries sustainability by recognising and supporting the link between transparency and the growing stable of technology-driven transparency and traceability solutions. By acknowledging a more comprehensive definition of transparency, WWF-Australia is proposing that these interrelated concepts can provide a more robust foundation for seafood sustainability, encompassing:

- **Transparency** that commits to greater accountability in governance, policy and decision-making by management agencies, including Regional Fisheries Management Organizations (RFMOs).[48]

[47] McKinney, R., Gibbon, J., Wozniak, E., and Galland, G. (2020). Netting billions 2020: A global tuna valuation. The PEW Charitable Trusts. https://www.pewtrusts.org/-/media/assets/2020/10/nettingbillions2020.pdf.
[48] Walton, G, Keen, M & Hanich, Q. (2022). Can Greater Transparency improve the Sustainability of Pacific Fisheries? *Marine Policy*, 136(2)

- **Transparency** as a maritime domain awareness tool (i.e., Automated Identification Systems or AIS) that enhances the accountability of key actors (e.g., vessel tracking) in support of governance and sourcing priorities[49], and
- **Transparency** in seafood sourcing and supply chains through end-to-end product **traceability** (e.g., product verification and integrity) to help ensure policy, laws and responsible fishing practices are adhered to.[50]

This project proposes to build closer ties between transparency initiatives and traceability providers to secure market access and meet consumer expectations for sustainable seafood. Several existing transparency initiatives provide the basis for what a joint transparency-traceability project could entail, at national and regional scales, with an initial focus on Fiji's longline tuna industry.

WWF-Pacific has been working with Fiji's longline tuna fishing operations for almost a decade to develop technology-based traceability solutions. In 2020, WWF-Australia and WWF-Pacific began cooperating to adapt a proven supply chain transparency platform, OpenSC[51], to suit Fiji's longline tuna fishery by collaborating with a Fiji-based company, Solander Pacific, on a proof-of-concept project. The next phase of that project, based on securing "confidential" data-sharing arrangements, is being designed to implement this transparency solution across the entire Fijian longline tuna fleet with the support of the Fiji Ministry of Fisheries (MoF). This next phase coincides with the newly launched initiative "Improving Fisheries Transparency in Fiji".[52] Designed to improve transparency and data sharing between key Fiji fisheries stakeholders as part of addressing Illegal, Unreported, and Unregulated (IUU) fishing in Fiji's Exclusive Economic Zone (EEZ). This initiative is being guided by the 10 policy principles of the Coalition for Fisheries Transparency.[53] A cooperative arrangement with this transparency initiative will support three key goals, identified as critical to the industry's long-term sustainability and include i) securing market access, ii) eliminating IUU fishing, and iii) building the MoFs implementation capacity.

The initial focus on Fiji's longline tuna industry is anticipated to be a springboard to scaling this transparency in governance and data-sharing and supply chain traceability initiative to other Pacific Island countries with active longline tuna fleets operating within their EEZs. Successful implementation of a scaled initiative is based on developing stronger relationships with key government and civil society partners.

Pacific tuna fisheries are under increasing pressure from climate change, transnational crime and IUU fishing, with the latter contributing to regional economic losses estimated at more than US$100 million annually.[54] The conservation of WCPO tuna fisheries holds regional environmental, economic and political imperatives, and the future precautionary management of these fisheries will require a combination of modernised management, improved oversight and reporting of fishing activities and effective enforcement incentives. On-the-water transparency and supply chain traceability will be at the core of these priorities.

The Australian Government has a long history as an effective partner in supporting improved governance and combatting IUU fishing in Pacific tuna fisheries (see Policy Alignment section). Australia has likewise demonstrated leadership in sustainable fisheries management and ocean conservation as both an active participant in RFMOs and, more recently, as a global leader in

[49] Orofino, S. McDonald, G. Mayorga, J. et al. (2023). Opportunities and challenges for improving fisheries management through greater transparency in vessel tracking. ICES Journal of Marine Science, 80, p675–684
[50] Virdin, J., Vegh, T., Ratcliff, B., et al. (2022). Combatting illegal fishing through transparency initiatives: Lesson learned from comparative analysis of transparency initiatives in seafood, apparel, extractive, and timber supply chains. *Marine Policy,* 138
[51] OpenSC is a digital platform joint venture between WWF-Australia and BCG Digital Ventures, capable of real-time verification of production claims, tracking products along the supply chain using blockchain technology and sharing product information with retailers and consumers to provide assurance on responsible seafood sourcing.
[52] Oceans5 Project Summary: Improving Fisheries Transparency in Fiji. https://www.oceans5.org/project/improving-fisheries-transparency-in-fiji/
[53] Coalition for Fisheries Transparency Website. https://fisheriestransparency.net/
[54] MRAG Asia Pacific (2021). The Quantification of Illegal, Unreported and Unregulated (IUU) Fishing in the Pacific Islands Region – a 2020 Update.

securing the High Seas Treaty agreement.[55] While Australia must continue its leadership in the Pacific and build on foundational work around governance, monitoring and enforcement, it needs to increase investment in combined transparency and traceability solutions that recognise the role of markets in securing sustainable and equitable fisheries outcomes.[56]

Outcomes:
Transparency and traceability are not the magic bullet for sustainable fisheries management. However, they are important in achieving improved ecosystem and economic outcomes in Pacific tuna fisheries. As market-based fisheries measures (e.g., seafood import policies) become more ubiquitous and international laws (e.g., High Seas Treaty, WTO subsidies agreements) exert greater influence on trade obligations, demand for increased supply chain transparency will resonate more loudly. Such is the case for Pacific tuna fisheries, where calls for improved transparency in regional governance are growing.[57] In parallel, new and emerging technologies are helping identify real on-the-water transparency pathways.

This project will deliberately focus on longline tuna fisheries, which have been identified as a key contributor to the decline of many endangered shark, sea turtle, and seabird species. Longline vessels are widely acknowledged as the least 'transparent', with less than 5 per cent observer coverage across the Pacific fleet and poor transhipment coverage.[58] The goal will be to use the Fiji longline tuna fishery to demonstrate how existing and emerging technologies, including electronic reporting, satellite tracking, cameras on vessels etc., in combination with digital traceability (i.e., blockchain) solutions, can contribute to improved transparency targets. By working at the nexus of policy and markets, this project has the potential to deliver ecological and socio-economic benefits, initially to Fiji's tuna industry and subsequently to longline tuna fisheries across the Pacific through helping:

1. **Secure market access:** Meeting traceability requirements for international import regulations (e.g., SIMP, EU catch certificate) will secure economic benefits through preferential sourcing in export markets.
2. **Eliminate IUU fishing:** Monitoring fisheries to eliminate IUU-caught tuna will ensure Fiji's government is receiving the full economic value from their natural capital.
3. **Implement sustainability policies effectively:** Building capacity and capability to support monitoring and compliance and to facilitate programs such as Fiji's national marine park area expansion as part of its "30 x 30" commitment.

Brief Strategic Policy Alignment:
The Australian Government has a long history as an effective partner in supporting 'transparency' initiatives and combatting IUU fishing in Pacific tuna fisheries. Regionally, Australia promotes sustainable fisheries management and ocean conservation as an active participant in regional fisheries management organisations, while globally, its leadership helped secure the High Seas Treaty agreement, which directly affects Pacific tuna fisheries. Australia's regional leadership in combating IUU fishing has been demonstrated through its support for programs such as FFAs Regional Fisheries Surveillance Centre, the Pacific Maritime Security Program and Indo-Pacific Partnership for Maritime Domain Awareness and the Niue Treaty[59] and its subsidiary agreement to enhance cooperation in fisheries surveillance, law enforcement and data-sharing. Australia is a strong

[55] Asia-Pacific Development, Diplomacy & Defence Dialogue (2023). What does it look like for Australia to be an Effective Partner in Combatting Illegal, Unreported and Unregulated Fishing, Canberra. www.asiapacific4d.com
[56] Guggisberg, S., Jaeckel, A., & Stephens, T. (2022). Transparency in fisheries governance: Achievements to date and challenges ahead. Marine Policy, 136(2)
[57] Cook, B. (2023). The WTO Needs to Impose Transparency Requirements for Fishing Subsidies. *Future Fisheries Management Issue Brief Series*, SSRN. http://dx.doi.org/10.2139/ssrn.4628384 .
[58] Seto, K., Miller, N., et al. (2022). Toward transparent governance of transboundary fisheries: The case of Pacific tuna transshipment. *Marine Policy*. Vol 136(2); https://www.pewtrusts.org/-/media/assets/2016/07/transparencyinthewesternandcentralpacifictunalonglinefishery.pdf
[59] Pacific Islands Forum Fisheries Agency. *Niue Treaty on Cooperation in Fisheries Surveillance and Law Enforcement in the South Pacific Region.* https://www.ffa.int/download/niue-treaty/

partner of the Pacific Island Forum Fisheries Agency and The Pacific Community. Australian Government assistance is guided by a number of regional strategies, including the Regional Roadmap for Sustainable Pacific Fisheries[60] and the Pacific Island Forum 2050 Strategy for the Blue Pacific Continent.[61]

For many Pacific Island countries, economic success depends heavily on the management of fisheries, especially tuna, which accounts for a major share of economic output, government income and export revenue. The sustainable management of offshore fisheries is a strategic priority for the Government of Fiji and other Pacific Island Countries and Territories (PICTs).

There is also positive alignment with existing Fiji Government policy. In particular, the Fiji Ministry of Fisheries *Strategic Development Plan 2019 – 2029* includes the following short-term priorities:

- Develop a sustainable and profitable tuna industry
- Improve service delivery through technology
- Develop 'hook to fork' traceability.

Activities and Implementation:
Transparency and traceability are complementary pursuits, and a holistic approach is needed that links policy and governance transparency to transparency of fishing vessel activities and supply chain traceability capable of meeting market/consumer and trade requirements. The key to strengthening transparency and traceability outcomes in Pacific tuna fisheries will be via partnerships and collaborations with governments, regional management agencies, other NGOs, the private sector and technology providers. While civil society has an important role in advocating for improved transparency, this approach will be grounded in the substantiated view that to scale-up and scale-out, the solutions must be regulator-driven to create systemic change.

Phase 1: Research and Review
- In-depth review of data-sharing challenges and solutions, with the goal of reaching an agreement on information-sharing protocols between government and industry.
- Landscape analysis of international regulatory import standards and requirements.
- Identify opportunities to partner with civil society organisations and the private sector to strengthen and coalesce transparency solutions.

Phase 2: Design and Development
- Utilise the OpenSC platform to develop, configure, or adjust relevant digital chain of custody solutions.
- Define and document required process changes for MoF to support platform and data outputs.
- Design a digital system that aligns with international import standards (i.e., Key Data Elements).

Phase 3: Implementation and Scale
- Training and capacity/capability building with fishing industry crews and Fiji MoF staff across all relevant technology solutions.
- Acquire and install required hardware and run implementation across multiple fishing vessels.
- Utilise implementation findings to adapt and scale-up the plan and adjust the solution as required.

[60] Pacific Islands Forum Fisheries Agency (FFA) and the Secretariat of the Pacific Community (SPC) (2015). A Regional Roadmap for Sustainable Pacific Fisheries. https://www.spc.int/DigitalLibrary/Doc/FAME/Brochures/FFA_SPC_2015_Roadmap.pdf
[61] Pacific Islands Forum Secretariat (2022). 2050 Strategy for the Blue Pacific Continent, Suva, Fiji: Pacific Islands Forum Secretariat. https://www.forumsec.org/wp-content/uploads/2022/08/PIFS-2050-Strategy-Blue-Pacific-Continent-WEB-5Aug2022.pdf

Value for Money:
Partnerships with governments, NGOs and the private sector will be the key to making better use of new and emerging technologies and data analytics to improve transparency and accountability in Pacific tuna fisheries and for building synergies between fishery 'transparency' as a good governance principle and supply chain 'traceability' to verify responsibly and ethically sourced seafood. An active example of this is a new data-sharing agreement between the PNG Fishing Industry Association and Global Fishing Watch, which could be a blueprint for how other Pacific countries can improve transparency in their tuna fisheries. These collaborations have the potential to deliver cost efficiencies associated with shared responsibilities and improved resource utilisation. For WWF-Australia, strategic partnerships will enhance co-funding opportunities but also have the potential to reduce outcome uncertainties and increase conservation impact at scale. Moreover, as governments, financial institutions and markets seek to reduce their risk exposure to detrimental, illegal and unethical fishing practices and satisfy consumers' responsible sourcing expectations, coalitions between NGOs and technology providers will assist in achieving these targets in a cost-effective and timely way.

Whilst the initial focus of this program will be on Fiji, many other Pacific Island nations are facing the same challenges to improve transparency to meet international trade obligations to secure the economic benefits that flow from their longline tuna industries. It is envisaged that this program acts as a 'pilot' for the region's longline fleets and a launchpad to scale transparency and traceability solutions (e.g., OpenSC) across longline fleets in key Pacific countries. All learning will be consolidated as input for future regional programs, minimising implementation times and costs. Minimising costs of development will ensure future funding and focus is on capacity building and implementation at scale across multiple Pacific fishing fleets, enhancing sustainable and transparent management of Pacific tuna longline fisheries

Given the expected climate impacts on tuna migratory patterns, national economies and local livelihoods,[62] improved transparency will contribute to regional stability, highlighting the importance of the Australian Government's investment in transparency in tuna fisheries in the WCPO. This project aims to align strategically with existing tuna transparency initiatives in the WCPO designed to tackle IUU and deliver improved ecological outcomes and economic benefits to Pacific Island countries.

[62] Bell, J.D., Senina, I., Adams, T. et al. (2021). Pathways to sustaining tuna-dependent Pacific Island economies during climate change. *Nat Sustain 4*, p900–910. https://doi.org/10.1038/s41893-021-00745-z