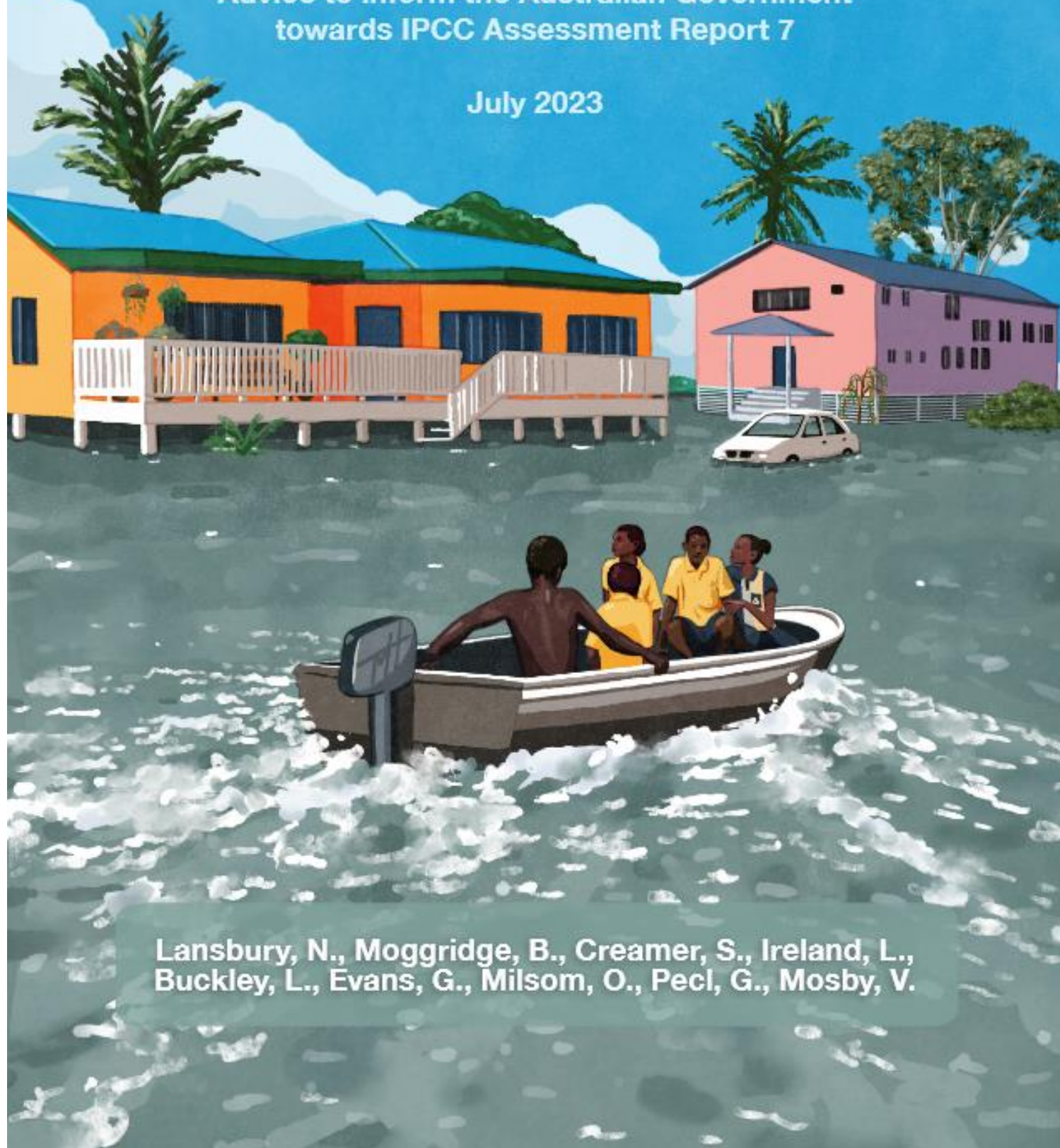


Aboriginal and Torres Strait Islander Peoples' voices and engagement in the Intergovernmental Panel on Climate Change:

Advice to inform the Australian Government
towards IPCC Assessment Report 7

July 2023



Lansbury, N., Moggridge, B., Creamer, S., Ireland, L.,
Buckley, L., Evans, G., Milsom, O., Pecl, G., Mosby, V.

Aboriginal and Torres Strait Islander Peoples' voices and engagement in the Intergovernmental Panel on Climate Change:

Advice to inform the Australian Government towards Assessment Report 7

An independent report to the Australian Government

“There is limited recognition regarding First Nations peoples other than relegating us to 'vulnerable communities' in the context of climate change.

This disregards our over-65,000 years of sustainable practices and customary knowledge of the natural environment and thus our significant contribution to policy.

First Nations need a voice”.

(Aboriginal respondent, IPCC Voices survey, 2023)

**Nina Lansbury, Bradley Moggridge, Sandra Creamer, Lillian Ireland,
Lisa Buckley, Geoff Evans, Olivia Milsom, Gretta Pecl, and Vinnitta Mosby**

July 2023

About this report

This is an independent report to the Australian Government. The information and advice are the views of the report authors.

About the 'IPCC Voices' research team

Adjunct Professor Sandra Creamer AM (Waanyi Kalkadoon, The University of Queensland), Dr Vinnitta Mosby (Meriam Nation, Torres Strait, James Cook University) and Associate Professor Brad Moggridge (Kamilaroi, University of Canberra) are Aboriginal and Torres Strait Islander scholars who bring cultural Knowledges and diverse Country representation to this group.

Dr Nina Lansbury (non-Indigenous, The University of Queensland) and Professor Gretta Pecl (non-Indigenous, University of Tasmania) are AR6 Lead Authors who worked alongside the Aboriginal and Torres Strait Islander Contributing Authors of the Australasia Chapter and brought their academic expertise and working knowledge of IPCC processes to this report.

Lillian Ireland (Melukerdee, scholar with a legal, ethics, justice and environmental background) and Dr Geoff Evans (non-Indigenous, scholar with environmental science and community development specialist with experience in in-community work with and for Aboriginal Peoples in Central Australia) provided research support and project management for this report. Dr Lisa Buckley and Olivia Milsom (both non-Indigenous) from The University of Queensland provided survey guidance and analytical support.

For further details, contact Dr Nina Lansbury at the School of Public Health, The University of Queensland: n.lansbury@uq.edu.au

Acknowledgement

The 'IPCC Voices' research team wishes to thank the goodwill, generosity, and honesty of all respondents who participated in this research. We understand that Traditional Knowledge holders, Indigenous scholars, and non-Indigenous climate change allies, have significant requests of their time, knowledge and wisdom - particularly those who are Aboriginal and Torres Strait Islander Peoples, and this involves an associated cultural load. The author team is committed to maintaining our focus on achieving greater visibility, and helping to ensure there is appropriate focus on the value of Indigenous Knowledges and voices in climate change research and decisions, including through the IPCC processes.

Cover artwork

The cover art for this report was created by Tom Munro-Harrison and depicts an Indigenous family making their way to school, navigating the flooded streets of their community. There is a larger story being told here, of a community that has lived through these floods before and adapted in anticipating more floods to come, of parents dedicated to securing education for their children and to helping them face a future filled with these emergent crises.

This determination speaks of a hopefulness about the future, buoyed by the strength and resilience of Aboriginal and Torres Strait Islander communities, and our abilities to adapt to the challenges of climate change through our cultural connections and relationships with our lands and waters.

Tom is a Wiradjuri activist, writer and artist living on Boon Wurrung County, whose work, focusing on the relationships between cultural practice, connection and identity has featured in publications including *IndigenousX*, *Design with Indigenous Nations*, and *Overland Journal*. He is currently developing a graphic novel exploring these themes.

Cite as: Lansbury, N., Moggridge, B., Creamer, S., Ireland, L., Buckley, L., Evans, G., Milsom, O., Pecl, G., and Mosby, V. (2023), *Aboriginal and Torres Strait Islander Peoples' voices and engagement in the Intergovernmental Panel on Climate Change: Advice to inform the Australian Government towards IPCC Assessment Report 7*, An independent report commissioned by the Australian Government (Department of Climate Change, Energy, the Environment and Water), Canberra.

Executive Summary and Recommendations

Are Aboriginal and Torres Strait Islander voices present in the Intergovernmental Panel on Climate Change reports?

“There is limited recognition regarding First Nation peoples other than relegating us to ‘vulnerable communities’ in the context of climate change. This disregards our over-65,000 years of sustainable practices and customary knowledge of the natural environment and thus our significant contribution to policy. First Nations need a voice” (Aboriginal respondent, IPCC Voices survey, 2023).

Climate change research is not capturing all relevant data. Aboriginal and Torres Strait Islander Peoples have lived in Australia for thousands of generations and through changes in the climate. Knowledges of how to manage Country (traditional estate) to ensure ecosystem health, food sources, and sustainability of Peoples through these changes have been passed down through Traditional methods. Much of these Indigenous Knowledges provide insights on how to adapt to the changes occurring now and projected into the future under the more rapid and human-induced climate change.

The Intergovernmental Panel on Climate Change (IPCC) is a United Nations-established body that seeks to document observed and projected aspects of climate change, through modelling of changes, documentation of vulnerabilities of ecosystems and societies, adaptation opportunities, as well as mitigating the causes of the changes. The Knowledges held by Aboriginal and Torres Strait Islander Peoples have great relevance to the IPCC process in terms of monitoring changes through locally specific indicators, as well as mitigation and adaptation options. Moreover, many communities living on Country are located in areas that are highly exposed to extreme and changing conditions under climate change, including increasingly frequent and severe cyclones, sea level rise, and extended heatwaves.

However, until the most recent IPCC Assessment Report (AR6; IPCC, 2022), minimal inclusion of Indigenous data had occurred, often because these datasets were not widely documented in peer-reviewed academic sources and thus were not located and summarised in Assessment Reports. This ‘invisibility’ in government and Western-focused documentation persists, and it influences governments’ follow-on consideration of priority areas and populations to which climate change policies, funding and monitoring must be tailored - including in Australia.

Why did the Australian Government commission this advice?

“The purpose of the consultancy is to provide advice to the Department of Climate Change, Energy, the Environment and Water, on what the Australian Government can do to enhance Aboriginal and Torres Strait Islander Peoples’ voices in the IPCC” (Commonwealth Contract with the ‘IPCC Voices’ research team, March 2023).

This report was commissioned by the Australian Government ahead of the IPCC Assessment Report 7 planning discussions in August 2023, explicitly in response to increasing calls from Indigenous community, media and academia (including IPCC Lead Authors) for inclusion of Aboriginal and Torres Strait Islander scholars and Knowledge holders in the Lead Authorship, to ensure Aboriginal and Torres Strait Islander Knowledges and perspectives are directly presented by First Nations scholars and Knowledge holders themselves.

Who led this research to ensure culturally appropriate methods, consultation and portrayal of findings?

“Hear from the real and authentic voices. These ‘invisible people’ can be hard to access, and the Government cannot reach them. But trusted Aboriginal people can reach them through their networks... through having Indigenous peoples like us leading this research we are getting the right conversations, concerns, and solutions that the Government would not get otherwise... This is how effective consultation works” (Indigenous member of the IPCC Voices research team, 2023).

To guide the approach to deliver this purpose, a research team was formed comprising Aboriginal and Torres Strait Islander scholars, IPCC Lead Authors, and researchers with skills in cultural competency. Adjunct Professor Sandra Creamer AM (Waanyi Kalkadoon, The University of Queensland), Dr Vinnitta Mosby (Meriam Nation, Torres Strait, James Cook University), Associate Professor Brad Moggridge (Kamilaroi, University of Canberra) and Lillian Ireland (Melukerde, legal scholar) are Aboriginal and Torres Strait Islander scholars who bring cultural Knowledges and diverse Country representation to this group.

Dr Nina Lansbury (non-Indigenous, The University of Queensland) and Professor Gretta Pecl (non-Indigenous, University of Tasmania) are AR6 Lead Authors who worked alongside the Aboriginal and Torres Strait Islander Contributing Authors of the Australasia Chapter and brought their academic expertise and working knowledge of IPCC processes to this report. Dr Geoff Evans, Dr Lisa Buckley and Olivia Milsom (non-Indigenous academics) provided research, management and other contributions.

How was this advice collated?

“They want their voices heard rather than being collected in numbers. They say, ‘we want proper talking; come and see what’s happening to us’” (Indigenous member of the IPCC Voices research team, 2023).

The research team created a survey and an associated extended yarning method that was disseminated widely across Australia, to Aboriginal and Torres Strait Islander communities to engage community members in the research, as well as to Indigenous and non-Indigenous climate change scholars. The process enabled community leaders, Knowledge holders, land managers, and health, housing, municipal, and other service providers to share their experiences, knowledge and concerns regarding climate change impacts, their aspirations for adaptation and mitigation actions, and for understanding the rationale for their voices to be included in IPCC processes, and mechanisms for elevating their engagement so this can happen. A key aspect maintained throughout the data gathering was: Who is speaking? Whose voice is this? Consequently, as much as possible, the direct voices of participants in the surveys and yarns are presented verbatim to retain the veracity of the message shared.

The total sample size was 102 surveys, with 70 surveys comprehensively completed. Of the respondents who identified their cultural background, 74 percent were Aboriginal and Torres Strait Islander Peoples. The Aboriginal and Torres Strait Islander respondents who shared details had cultural connections with 43 Countries and/or language groups from across most states and territories.

What do Indigenous Knowledge Holders and scholars recommend to ensure Aboriginal and Torres Strait Islander Peoples’ Knowledges and voices are included in future IPCC reports and other climate change discussions?

On Indigenous Knowledges as IPCC data: *“Allow Indigenous-led data collection and responses that take in all the relationships between and in Country, rather than a siloed approach of ‘this statistic’ and ‘that research focus’”* (Aboriginal respondent, IPCC Voices survey, 2023) and *“Evidence and data need to be collected on how we are experiencing these [climatic] changes”* (Torres Strait Islander respondent, IPCC Voices survey, 2023).

On Indigenous Peoples in the IPCC & beyond: *“[We want] to be given a platform to speak and to allow us to speak for ourselves on issues that directly impact our lives and wellbeing”* (Torres Strait Islander respondent, IPCC Voices survey, 2023).

On two-way climate change engagement between decision-makers and Indigenous Australians: *“Explain to us what is being shared by the IPCC report and how we might be able to contribute by way of our knowledge and understanding of the impacts of climate change”* (Aboriginal and Torres Strait Islander respondent, IPCC Voices survey, 2023).

The recommendations that result from this research are set out below, in order to respond to the Australian Government’s particular request for advice on actions and processes that the Australian Government can implement to:

- Strengthen Aboriginal and Torres Strait Islander Peoples’ cultural Knowledges and perspectives on climate change impacts and responses in IPCC reports;
- Improve the participation of Aboriginal and Torres Strait Islander scholars and Knowledge Holders in IPCC processes.

Two additional areas of recommendation are placed after these initial responses to (i) describe how to provide climate change information to Aboriginal and Torres Strait Islander Peoples, and (ii) how to achieve climate action at all stages in Aboriginal and Torres Strait Islander communities - from information gathering and monitoring through to the implementation of initiatives.

All recommendations are numbered for ease of location and description in the body of the report. These results and recommendations will be shared with the relevant Australian Government Minister and Australian Government departments, as well as with the research respondents and IPCC participants, and through wider public conversations.

Recommendations

- **Strengthening Aboriginal and Torres Strait Islander Peoples' cultural Knowledges and perspectives on climate change impacts and responses in IPCC reports**

Commit to specific approaches that will ensure inclusion of Aboriginal and Torres Strait Islander Knowledges and perspectives in IPCC reports, including through:

- Aboriginal and Torres Strait Islander-led climate change research
- The Australian Government commit to requesting and strongly supporting the IPCC to include both dedicated chapter/s on Indigenous Peoples as well as incorporating Indigenous Knowledges and considerations throughout all reports
- Respectful inclusion of Indigenous scientific data alongside Western scientific data (Recommendation 25)

Increase information in IPCC reports from Aboriginal and Torres Strait Islander communities that:

- Considers wellbeing in a holistic way that is connected to Country
- Involves historical truth-telling
- Is Indigenous-led
- Values caring for Country (Recommendation 20)

Ensure that IPCC reports provide relevant and applicable information on climate change in terms of the science and the localised impacts, and increase the focus in the reports on Indigenous Knowledges (Recommendation 16)

Create an Indigenous-focussed section of the IPCC Assessment Reports (Recommendation 2). This can occur through:

- The Australian Government can request/insist that in the Australasian Chapter includes an Indigenous-focused section, and then:
- The Australian Government can suggest and lobby for a Indigenous-focused section for the broader IPCC report as a whole.

When seeking this information, seek to:

- Recognise Indigenous knowledge as a system and integrate it equivalently with Western knowledges (Recommendation 8)
- Acknowledge the marginalising impact of IPCC processes (Recommendation 1)
- Focus on a strengths- and rights-based narrative (Recommendation 4)
- Do not categorise Aboriginal and Torres Strait Islander Peoples as "stakeholders" (Recommendation 5)

- **Improving the participation of Aboriginal and Torres Strait Islander scholars and Knowledge Holders in IPCC processes**

Increase and recognise Indigenous contributions, especially as Lead Authors (Recommendation 3).

Achieve this by seeking to:

- Set and engage at least a minimum number of Indigenous IPCC Lead Authors from Australia. Support these Indigenous Lead Authors and all Indigenous authors with adequate and appropriate resources to enable publication of IPCC-relevant publications (Recommendation 26)
- Provide opportunities for Indigenous Peoples to be heard at all levels (Recommendation 6)

Increase Aboriginal and Torres Strait Islander Peoples' participation in IPCC and other climate change processes by:

- Valuing and including Indigenous Knowledges in a similar way to Western knowledges,
- Instating a minimum quota of Aboriginal and Torres Strait Islander authors
- Including/inviting Indigenous Peoples to engage in IPCC and other climate change processes
- Sharing IPCC reports back to community with locally relevant data and in culturally-appropriate ways
- Establishing a Voice to Parliament/Indigenous representation on climate issues
- Ensuring effective and meaningful two-way engagement between decision-makers and Indigenous Australians (Recommendation 17)

Develop and conduct inclusive, consultative, culturally-appropriate approaches with Indigenous Peoples on climate change that respects their contribution of responses, and works in partnership on developing and implementing resulting actions with consideration to the purpose of consultation, methods, respondent representation, and data management (Recommendation 27). Use consultation as the first stage towards meaningful action on climate change (Recommendation 28).

When engaging Indigenous Lead Authors, seek to:

- Implement free, prior and informed consent for Indigenous Peoples' engagement in climate change action and measures (Recommendation 10)
- Create genuine partnerships with reciprocity, power sharing and respect (Recommendation 9)
- Support Indigenous women to empower themselves in climate change leadership (Recommendation 13)
- Increase familiarity and use of the IPCC and its reports for Indigenous Australians with a community and/or professional role of relevance to climate change (Recommendation 15)

- **Providing climate change information for Aboriginal and Torres Strait Islander Peoples**

IPCC reports are not currently a key source of climate change information for Aboriginal and Torres Strait Islander Peoples. To increase climate change information for Indigenous Australians, in particular:

- Direct IPCC and other climate change information through community organisations, dedicated local events, and visits
- Promote accessible and targeted climate change reports
- Ensure climate change information is disseminated through social media
- Seek media coverage of climate change on all news platforms (Recommendation 18)

Improve sharing of information about climate change (including from IPCC reports) through:

- Increased locally based engagement with Aboriginal and Torres Strait Islander Peoples in local community, through dialogue and in culturally-appropriate ways
- Increased engagement with young people through accessible formats that incorporate climate change science and Indigenous Knowledges (Recommendation 19)

Increase dissemination of IPCC Assessment Reports by partnering with a diversity of relevant Indigenous audiences to develop such summaries or fact sheets on specific IPCC topics as identified by, and relevant to, Aboriginal and Torres Strait Islander Peoples (Recommendation 29)

- **Achieving climate action in Aboriginal and Torres Strait Islander communities: Information gathering, monitoring and implementation of initiatives**

Continue to research the impacts of changes on ecosystems and human health (including social, spiritual and emotional wellbeing, as well as physical health) of Aboriginal and Torres Strait Islander communities in all ecosystem types (Recommendation 22).

Seek and support Indigenous guidance to reduce the impacts of climate change (Recommendation 23). Support funding and training of Indigenous community leaders, knowledge holders and ranger groups to monitor climate change impacts on Country and people (Recommendation 21).

Ensure contextual understanding of climate change and Indigenous Peoples by seeking to:

- Acknowledge the interconnected health of Peoples and health of Country (Recommendation 12)
- Recognise the colonial drivers of threats by embedding self-determination and capacity building in all action (Recommendation 11)
- Protect Indigenous Knowledge when using Knowledge (Recommendation 14)

Support local and Indigenous-led climate change initiatives including legal protections (Recommendation 7). Invest in adaptation strategies and actions to protect physical health, emotional and social wellbeing, safety, employment, income and opportunities on traditional Country for all Indigenous communities impacted by climate change and in any community to which people may be forced to relocate (Recommendation 24).

Table of Contents

Executive Summary and Recommendations	4
Indigenous Voices in IPCC reports	12
Purpose of this report	12
The need for this report	13
Key contextual information about IPCC roles and Indigenous contributions	13
Research Approach	15
The research team	15
Ethics approval	15
Data gathering techniques	15
Literature and information review	15
Survey of Indigenous Knowledge holders and Indigenous & non-Indigenous climate scholars	16
Extended yarns	19
Indigenous-led team reflections	19
Results and recommendations	20
Literature and information review results	20
IPCC-specific recommendations	20
In and beyond the IPCC: Listen, respect and elevate Aboriginal and Torres Strait Islander Peoples' Voices	21
In and beyond the IPCC: Holistic incorporation of Indigenous Knowledge	23
In and beyond the IPCC: A rights-based approach	24
Survey and extended yarning results	28
IPCC-specific recommendations from the survey and yarning results	30
• Indigenous Australians' familiarity with the IPCC and IPCC reports	30
• Usefulness of the IPCC and IPCC reports	30
• Strengthening the voice of Aboriginal and Torres Strait Islanders on climate change in the IPCC & beyond	31
• Current sources of climate change information for and from the IPCC	33
• Suggested ways for sharing information about climate change for and from the IPCC	34
• Proposed additional information from Aboriginal and Torres Strait Islander communities to include in IPCC reports	35
In and beyond the IPCC recommendations from the survey and yarning results	37
• Climate change impacts: Seasonal changes have you seen, felt, or think might be happening in your community or Country from climate change	37
• Climate change impacts and vulnerability: Impacts of concern from Indigenous respondents	41
• Climate change mitigation and adaptation: Indigenous guidance to reduce the impacts of climate change	46
• Actions by organisations and individuals to protect Country and community from climate change	51

Indigenous-led team reflection results	54
Intentionally include Aboriginal and Torres Strait Islander Peoples’ cultural Knowledges and perspectives on climate change impacts and responses in IPCC reports	54
Enable participation of Aboriginal and Torres Strait Islander scholars and Knowledge holders in IPCC processes	55
Conduct authentic and appropriate consultation with Aboriginal and Torres Strait Islander Peoples on climate change	55
Pursue real and implementable actions following consultation	57
Ensure that the IPCC reports and processes are accessible and available to Aboriginal and Torres Strait Islander Peoples.....	57
Conclusions and recommendations	58
Appendices	62
A1 Organisations contacted by the research team for survey responses	64
A2: ‘IPCC Voices’ Survey (from Qualtrics platform)	66
A3: Summary for the Peoples: IPCC Assessment Report 6- Australasia	71
References	78

A note on terminology

The First Peoples of Australia refer to each other through a diversity of respectful terms, including by the name of the language group or Country (traditional estate). Where known, this is the preferred terminology. Where Peoples from multiple language groups and/or Countries are collectively referred to, the terms include Aboriginal and Torres Strait Islander Peoples, First Nations Peoples, and Indigenous Australians, among others. The Indigenous authors of this report have their personal preferred and differing terminologies. In this report, no single term is privileged; instead, these terms are used interchangeably throughout.

List of Acronyms

AR4	Fourth Assessment Report (IPCC)
AR5	Fifth Assessment Report (IPCC)
AR6	Sixth Assessment Report (IPCC)
AR7	Seventh Assessment Report (IPCC)
COP28	Conference of the Parties - United Nations Climate Change Conference
DCCEEW	Department of Climate Change, Energy, the Environment and Water
FPIC	Free, Prior Informed Consent
IK and LK	Indigenous Knowledges and Local Knowledges
IPCC	Intergovernmental Panel on Climate Change
NGO	Non-Governmental Organisations
UNFCCC	United Nations Framework Convention on Climate Change
UNDRIP	United Nations Declaration on the Rights of Indigenous Peoples
UQ	The University of Queensland
WG1 or WGI	IPCC Working Group 1
WG2 or WGII	IPCC Working Group 2

Introduction

Indigenous Voices in IPCC reports

The first IPCC report to highlight the value of Indigenous Knowledges was the AR4 in 2007. However, although inclusion of Indigenous Knowledges within IPCC reports has increased over time, a rights-based approach is still not taken and there are no procedures or guidelines for ethical and equitable engagement (van Bavel et al., 2022; Ford et al., 2016; Hernandez et al., 2022)

During IPCC AR6, the Australasian IPCC chapter team did not include any Indigenous Lead Authors. Indigenous scholars were invited into the IPCC drafting and assessment process as Contributing Authors but were not nominated by the Government nor invited by the IPCC Bureau and did not have the same level of access to, or authority over, the whole chapter or report as the Lead Authors.

Throughout the several years long AR6 cycle, many of the Australasian chapter Lead Authors reflected deeply on the level of inclusion of Indigenous Knowledges and perspectives within IPCC processes, and the broader level of recognition and inclusion (or lack thereof) of Indigenous Peoples and their knowledge systems in climate governance. Feedback received by DCCEEW from the Australian Lead Authors post-AR6 emphasised the importance of including and elevating Indigenous voices, perspectives and Knowledges within the IPCC process and associated reports (see Appendices: [Table 1](#)).

Purpose of this report

This report was commissioned by DCCEEW to provide specialised advice to the Department on what the Australian Government can do to recognise and prioritise Aboriginal and Torres Strait Islander Peoples' voices in the IPCC, in their role as Australian IPCC Focal Point – particularly for AR7 (throughout 2023-2029 and beyond).

In particular, the Australian Government was seeking advice on actions and processes that the Australian Government can implement to:

- Strengthen Aboriginal and Torres Strait Islander Peoples' cultural Knowledges and perspectives on climate change impacts and responses in IPCC reports.
- Improve the participation of Aboriginal and Torres Strait Islander scholars and Knowledge Holders in IPCC processes.

In addition, it was acknowledged by DCCEEW that enhancing Aboriginal and Torres Strait Islander Peoples' voices in IPCC processes could:

- Increase information on Aboriginal and Torres Strait Islander Peoples' science, research and Knowledges in IPCC reports to strengthen the assessments.
- Bring a greater diversity of expertise to report writing teams, to provide more balance and depth to the reports.
- Build Aboriginal and Torres Strait Islander scholars' experience in engaging in multinational climate change assessment and response processes.
- Support a deeper understanding of IPCC processes and products amongst a wider network of climate change scholars and policymakers.
- Identify gaps in knowledge and the required Aboriginal and Torres Strait Islander-led research for stronger collective understanding of extreme events, drought resilience, climate adaptation and perspectives on mitigation activities.
- Ensure the Australian Government delivers real, meaningful, and concrete actions that have demonstrable benefits for people living on Country.

The report builds on lessons learned during the IPCC's [AR6](#) work program (2015-2022), including through feedback received from Australian Lead Authors and other experts about identified gaps and opportunities to support Aboriginal and Torres Strait Islander scholarship and Knowledges representation in IPCC reports. This effort supports the Government's current and future priorities to elevate Aboriginal and Torres Strait Islander Peoples' voices, to remove

barriers to full participation of Aboriginal and Torres Strait Islander Peoples in national life, and to advance reconciliation.

The research team has intentionally delivered additional results beyond the contractual remit. This was due to the team's aim to provide sufficient context for the experience, history and implications of climate change on Country, as well as the experience of exclusion of Aboriginal and Torres Strait voices in climate change discussions and documentation. In keeping with the wider delivery beyond the contractual expectations, the author team will also disseminate the results back to the respondents of this research, Indigenous organisations, IPCC participants and to inform a wider public conversation of Indigenous voices and participation in climate change discussions. This is relevant within and beyond Australia.

The need for this report

DCCEEW recognised the significant contribution made by Aboriginal and Torres Strait Islander Peoples climate change researchers as Contributing Authors to the development of the IPCC AR6 *Climate Change 2022 – Impacts, Adaptation and Vulnerability WGII* (IPCC, 2022). A growing body of Aboriginal and Torres Strait Islander Peoples' Knowledges was included in the Report, including in *Chapter 11 – Australasia* (Lawrence et al., 2022), which included evidence of the extent of impacts experienced and priority of Aboriginal and Torres Strait Islander communities under a changed climate. Aboriginal and Torres Strait Islander Peoples' Knowledges and practice stated in adapting to a changing climate were amongst the key messages of the Report. These findings provide a strong evidence base for policymakers to consider when addressing climate change impacts and responses.

Adjunct Professor Sandra Creamer (Waanyi Kalkadoon), Dr Vinnitta Mosby (Meriam Nation, Torres Strait), and Associate Professor Bradley Moggridge (Kamilaroi) co-authored these sections of the report in their roles as Contributing Authors in AR6. Dr Nina Lansbury and Professor Gretta Pecl invited their participation and worked with them in their capacity as Lead Authors.

Following AR6, many Australian IPCC AR6 authors provided feedback in their final report to the Department about the need to address a gap in author representation as no Aboriginal and Torres Strait Islander Peoples experts were selected as chapter Lead Authors, which was considered a weakness in the author group. Some offered ideas for addressing this. Commentary co-authored by IPCC Lead Authors and Contributing Authors highlighted this knowledge gap, including IPCC reports still excluding Indigenous voices (Moggridge et al., 2022) and COP27: On Country, health and Indigenous Knowledges (Lansbury et al., 2022).

Historically in IPCC Assessment Reports, the consideration and inclusion of Indigenous content has been general in scope and limited in length, with very little critical engagement with Indigenous knowledge system (Ford et al. 2016). Formal evaluation of the role of Indigenous Knowledges within IPCC reports over time have determined that culturally relevant and appropriate adaptation policies require more robust, nuanced and appropriate inclusion and framing of Indigenous issues (Ford et al 2016). Content analysis of the IPCC Working Groups I, II and III Reports over time have found a growing number of references to Indigenous Peoples and their knowledge systems. However, this largely applies a reductionist approach to Indigenous Peoples' knowledge and rights which risks promoting harmful stereotypes that increase inequity (Carmona et al, 2023).

The AR7 work program is expected to begin in July 2023 and run for seven years, until 2029. Decisions are yet to be taken about the topics and nature of the reports to be produced and the timing for nominating and selecting expert participants to develop the reports. These decisions will be made by IPCC member government representatives in consultation with the newly elected IPCC scientific governing body, during 2023 – 2024.

Key contextual information about IPCC roles and Indigenous contributions

IPCC Lead Authors, Coordinating Lead Authors and Review Editors are all roles selected by the IPCC Bureau, based on expertise, experience, gender and regional balance. The Bureau invites governments and observer organisations to nominate candidates. These experts are assigned specific responsibilities and they participate in international author meetings to develop the report.

- **Coordinating Lead Authors** are responsible for coordinating work on major sections of a report such as chapters, and for coordination across chapters and larger sections of the report;

- **Review Editors** help identify expert reviewers, ensure that all substantive comments are afforded appropriate consideration, and advise Lead Authors on how to handle contentious or controversial issues;
- **Lead Authors**, together with Coordinating Lead Authors, assess the bulk of the available scientific literature and take carriage of drafting the report. Coordinating Lead Authors and Lead Authors have collective responsibility for the contents of a chapter.

Nina Lansbury and Gretta Pecl were among the experts nominated by the Australian Government to the IPCC Bureau for author selection.

IPCC Contributing Authors are invited by Lead Authors or Coordinating Lead Authors to draft specific sections of the chapters. This work may involve participating in smaller author groups and meetings. Sandra Creamer, Vinnitta Mosby and Bradley Moggridge were invited by the Lead Authors to be AR6 Contributing Authors. Contributing Authors provide specific knowledge or expertise in a given area but are not allowed to see the entire report or chapter they are contributing to (except as part of the official review processes).

The legal context of Aboriginal and Torres Strait Islander participation: Under International law, the Australian Government is obliged to enhance the voices of its Indigenous Peoples in climate change discourse and action, particularly in the rights enshrined in the *United Nations Declaration on the Rights of Indigenous Peoples* (UNDRIP) (UNESCO, 2008) through Articles 19, 25, 26, 28, 29, 31, 32 and 39 as well as in developing and implementing Australia's nationally-determined-contributions and national adaptation plans under the *United Nations Framework Convention on Climate Change* (UNFCCC) and the Paris Agreement (UNFCCC, n.d.)

The rights contained in the UNDRIP provide that Indigenous Peoples have the right to participate in decision making in matters considered to 'affect' them, including matters of fundamental importance to their rights, survival, dignity and well-being as well their rights over lands, territories and resources of traditional ownership.

Despite Australia's signatory to the UNDRIP in 2009, there has been a failure to implement the rights and principles it contains domestically. This failure is demonstrated by the number of complaints Aboriginal and Torres Strait Islander Peoples have made directly to United Nations human rights bodies: most notably, Djuwan Hoosan's (Hoosan, 2021) against Australia's ongoing incarceration and removal of Indigenous children and the successful Torres Strait Islander case (Human Rights Law Centre, 2022) which found Australia has violated their rights in failing to adequately address the impacts of climate change. These rights are increasingly important in a changing climate. As recognised by the United Nations Human Rights Committee in the Torres Strait Islander case, the impacts of climate change disproportionately impact Indigenous Peoples.

Climate change is having, and will continue to have, significant impacts on the Country, culture, and health of Aboriginal and Torres Strait Islander Peoples, and contrastingly the experience of Aboriginal and Torres Strait Islander Peoples of climatic changes over 65,000 years means there is much valuable Knowledge held to contribute. Australia's endorsement of the UNDRIP follows that Indigenous voices should be heard in climate change decisions.

Research Approach

The central purpose of this report was to identify actions and processes for the Australian Government to strengthen Aboriginal and Torres Strait Islander Peoples' cultural Knowledges and perspectives on climate change impacts and responses in IPCC reports, and to improve the participation of Aboriginal and Torres Strait Islander Peoples scholars and Knowledge Holders in IPCC processes.

The report identifies specific, targeted recommendations for enhancing Aboriginal and Torres Strait Islander voices in IPCC reports and processes, which can shape the focus for Australia's engagement and priorities in the AR7 cycle of reports. The report also includes broader recommendations arising from our consultations on related topics or themes.

The research team

To guide the approach to deliver this purpose, a research team was formed comprising IPCC Lead Authors, Aboriginal and Torres Strait Islander scholars, and research assistants with skills in cultural competency. The Aboriginal and Torres Strait Islander members of the team brought scholarship as well as cultural guidance on how to approach, engage and survey our respondents ([Appendix A2](#), both paper form and online), then conducted extended yarns with Elders, Indigenous scholars and community leaders, reviewed the final report for cultural appropriateness and respectful portrayal, and provided in person presentation and discussion of findings to senior Government and political representatives.

Ethics approval

This research, including the survey and yarning circle processes used to gather data, has been approved as part of the University of Queensland Project titled: Living On Country: Aboriginal and Torres Strait Islander Peoples Navigating Their Health In A Global Warming-Affected Future. Project Number:2022/HE002188.

Data gathering techniques

The report authors acknowledge from the outset that there is a difference, and sometimes a tension, between the methods of Western science and academia and Indigenous Knowledges and ways of seeing the world, with implications for how knowledge is gained and shared, and how data is gathered, acknowledged, and interpreted.

In Western science and academic writing, methods strive to segregate the author from the research. For example, the voice of whoever is speaking is often masked to provide an appearance of 'scientific objectivity'. Our methodology acknowledges that research is never unbiased, and that identifying positionality and recognising who is speaking is crucial. This allows for greater transparency, and proper acknowledgement and appreciation of participants' diverse perspectives and appropriate recognition of cultures.

The research approach undertaken involved a four-part method. The first component was a literature and information review (provided at the start of this report), the second was development of a survey (see [Appendix A2](#)), the third was extended yarns, and the final was reflective team discussions led by the Indigenous members.

A key methodological element throughout the entire process of conducting this research, particularly when compiling the review, content, questions and engagement in the surveys and the yarning circles and interviews into the report, involved keeping the following questions at the forefront of mind: *Who* is speaking? *Whose voice* is this? Consequently, as much as possible the direct voices of participants in the surveys and yarns are presented verbatim to retain the veracity of the message shared.

Literature and information review

The purpose of this review was to ensure this report, and the recommendations emerging from survey and yarns, was founded on and supported by existing research and recommendations that have already been voiced.

Due to time limitations, this review was conducted rapidly to broadly assess existing recommendations in order to enhance this research and inform the survey. It should not be taken to be a comprehensive literature review.

Scope of literature and information review

Data on specific recommendations for Indigenous Peoples' involvement in IPCC processes and documents is limited. Therefore, a wide-ranging approach was used to capture as much relevant data as possible.

The scope of material included in the review captured both academic literature and grey literature, such as reports and media articles. The inclusion of sources beyond peer-reviewed articles was an intentional methodology to ensure that this research was not restricted only to Westernised concepts of science, data capturing, communication and knowledge sharing. The same methodology was adopted in a recent scoping review of climate change and Aboriginal and Torres Strait Islander health (HEAL Network & CRE-STRIDE, 2021).

Material included in the review were sources that were related to climate change and met one or more of the following criteria:

- Advocated for the inclusion of voices of Indigenous Peoples on government-driven climate change policy and action: This criterion allowed the review to capture any international material relating to the aspirations of Indigenous Peoples in Australasia and globally for inclusion in IPCC processes. Given the international focus of the IPCC Reports, it was important to assess what other nations or IPCC-specific recommendations have been made.
- Related to the direct impacts of climate change on Aboriginal and Torres Strait Islander Peoples: This criterion captures domestic sources regarding the impact climate change is having directly on Aboriginal and Torres Strait Islander Peoples, particularly on health, culture and Country. Recommendations were extracted from this content as the broader inclusion of Aboriginal and Torres Strait Islander Peoples cannot be achieved without assessing these impacts.
- Incorporated the voices of Aboriginal and Torres Strait Islander Peoples: This criterion reflects an important feature of our research, given this report is aimed to further include Aboriginal and Torres Strait Islander Peoples' voices and authorship in the AR7 and climate change discourse more generally. It was critical that the scope of the review ensured that our research similarly relied on content that is told by or includes these voices directly, for example, had at least one Aboriginal and Torres Strait Islander author or incorporated interviews of Aboriginal and Torres Strait Islander Peoples.

Locating information sources

Relevant literature and information were primarily sourced through expert and survey participant guidance. As the research team was constituted of experts in this field, who have worked and published in this area for a long time (see for example Moggridge et al., 2022), expert engagement was an important foundation for finding sources to be included in the review. In the research survey, respondents were also given the opportunity to recommend any information and literature they thought relevant to our research. Where gaps were identified in reviewing the sources, databases of published literature were hand-sourced to find relevant material. Only material published within the last ten years at the time of report writing was included (i.e., published after June, 2013).

Material found and included was reviewed for any extractable recommendations relevant to this report, namely recommendations on how Governmental action on mitigation and adaptability of climate change relating to Aboriginal and Torres Strait Islander Peoples could be improved. Many consistent themes were identified across different sources and recommendations were clustered into these themes accordingly.

Survey of Indigenous Knowledge holders and Indigenous & non-Indigenous climate scholars

The research team identified a broad range of potential respondent individuals and organisations to be purposively sampled using a survey tool to capture their knowledge of climate change, their involvement in discussions, and the role, value and usage of the IPCC reports.

The research team created a survey that was disseminated widely with Aboriginal and Torres Strait Islander communities to engage community members in the research and to enable community leaders, Knowledge Holders, land managers, and health, housing, municipal, and other service providers to share their experiences, knowledge and

concerns regarding climate change impacts, their aspirations for adaptation and mitigation actions, and for understanding and elevating their engagement in and for their voices to be included in IPCC processes.

The survey was also disseminated to the climate change research and policy community, including both Indigenous and non-Indigenous academic scholars, policy leaders, and Knowledge Holders. The core research team identified potential informants based on our extensive knowledge of practitioners in the field and communities, academia, policy and program delivery and advocacy networks.

Consistent with commitments made in our correspondence with DCCEEW in April 2023, the research team sought input from research scholars (Aboriginal and Torres Strait Islander Peoples and non-Indigenous allies), including Australia's AR6 participants.

Participants intentionally sought to represent a range of relevant respondents including Aboriginal and Torres Strait Islander Knowledge holders, and climate change research scholars (Aboriginal and Torres Strait Islander Peoples and non-Indigenous allies). Respondents were asked if they identified as an Indigenous Australian, and were also asked for their Country or language group affiliation/s. Not all Indigenous respondents included this affiliation, and the Indigenous researchers explained that sharing this information may inadvertently suggest that the respondent was representing their Country and Peoples, which may not always be appropriately viewed by their community. Therefore, this information is not published in the results. A diversity of locations was sought to include respondents from urban, regional, rural and remote locations and this was reflected in the postcode of the location – although again not all respondents included this information.

Respondents were identified through individual contacts from the research team, from key publications sourced for the literature review, and through the 'snowballing' questions in the survey. This purposive sampling approach was undertaken for all survey respondents. Selected respondents were then also asked to participate in a yarn or to join a yarnning circle.

Respondents were asked to engage as individuals, but some were also able to respond on behalf of their organisation. Some of the organisations approached are listed in [Appendix A1](#). Respondents were asked to suggest others to survey in a snowballing approach.

The resulting survey included questions pertaining to the contractual request from the Australian government, namely for advice on actions and processes that the Australian Government can implement to strengthen Aboriginal and Torres Strait Islander Peoples' cultural Knowledges and perspectives on climate change impacts and responses in IPCC reports, and to improve the participation of Aboriginal and Torres Strait Islander scholars and Knowledge Holders in IPCC processes. The research team resolved to expand the data collection to explore additional contextual and observations to document the observations from lived experience, links to Traditional Knowledges and priority concerns regarding climate change.

The survey question schedule, provided in the [Appendix A2](#), was delivered on the Qualtrics survey platform (Qualtrics [Computer software] (2023) Accessed from <https://www.qualtrics.com>). It was able to be answered on iPads and tablets, computers, and via smartphones. The survey and the data gathering tools were piloted in late April. Pilot participants were targeted directly by team members seeking comment and feedback on the draft survey questions. The pilot participants were placed in government agencies and the community. The process was to allow the team to understand if the survey was accessible and understandable at all levels and a way of improving and ensuring the survey was appropriate.

Guidance of the Aboriginal and Torres Strait Islander members of the research team

The survey was developed under the guidance of the Aboriginal and Torres Strait Islander members of the research team with the assistance of Dr Lisa Buckley, a qualified and experienced survey expert based at the University of Queensland School of Public Health.

Our team adapted survey approaches that were known, from personal experience and observation, to be relevant to Indigenous respondents. The survey method was based on place and relationships with respondents. The aim was to maximise rapport-building, clear communication, and trust regarding the use of the data and Knowledge shared. This approach sought to move away from the culturally inappropriate 'tick and flick' survey method (Maar et al., 2011) that

is limited by legitimate financial, resource and logistical constraints, but consequently lacks depth of relationship, and commitment to community conversation, benefit and reciprocity.

Research team members visited communities for in-depth engagement, particularly the Torres Strait Islands and Central Australian communities. This method enabled our survey facilitators to sit with respondents on Country, talk in language and through shared conceptual frameworks, and go house-by-house and street-by-street together with local people (Mosby, 2014). This process uncovered nuances that surround accessing and retrieving information that can otherwise be hidden in remote survey methods.

Integrity and authenticity

The research team is committed to retain the integrity and authenticity of contributions. The data collected through the survey was gathered in a way that seeks to maximise the engagement of a diverse range of Indigenous respondents, and non-Indigenous allies working with communities on climate change -related environment, health, housing and community safety and wellbeing programs, by establishing some baseline sharing of observations and experiences of the impacts of climate change, knowledge, concerns, and aspirations.

The questions have been devised to be open-ended and delivered by Indigenous researchers with cultural competency so that the respondents have understood why these questions have been asked. The research team is committed to reproducing what has been said and contributed by respondents, without adding a framework or interpretation. The research team's purpose for each question, as well as the engagement processes, was to ensure maximise dialogue and perspective-sharing on the topic in a culturally safe and appropriate way.

In summary, the research team's commitment to retain the integrity and authenticity of contributions led to the survey:

- comprising mostly qualitative and open-ended questions, as guided by the Indigenous research team members as being culturally-appropriate, tested with a small pilot group to reduce the potential bias of prompting questions, enabling a storytelling approach, and authentically capturing the respondents' voices.
- being developed and delivered (where possible) by Indigenous researchers with cultural competency so that the respondents have understood why these questions have been asked.
- reproducing what has been said and contributed by respondents, without adding a framework or interpretation.

Respondents had the opportunity to share perspectives on mitigation activities (e.g., land use for mitigation activities) but survey responses from respondents who did address mitigation noted the most powerful mitigation initiatives needed to be taken outside of the control of Indigenous Peoples communities, e.g., ending the burning of fossil fuels and transitioning to renewable energy. Emphasis was more strongly on adaptation given the urgency for climate responses as they are experienced on-ground.

A Torres Strait Islander respondent identified the issue as:

"Lack of attention and promotion of climate change policies by the Australian government ... because energy companies are non-Indigenous owned, Indigenous Peoples are not in the position to influence change and therefore the onus is on the government to do this on our behalf." (Torres Strait Islander respondent, IPCC Voices survey, 2023).

The sentiment that communities need to be empowered to influence the drivers of climate change and healthy futures was echoed by another Torres Strait Islander who said:

"The mental health and overall health and wellbeing impacts on families is becoming obvious. We cannot stop this change but as a region and a people we need to be empowered to feel that we can protect ourselves, our cultural rights and create healthy, sustainable communities." (Torres Strait Islander respondent, IPCC Voices survey, 2023).

Extended yarns

Extended yarns (long form culturally-appropriate interviews with individuals) and semi-structured yarning circles all with Indigenous respondents were conducted between May and June 2023. The yarns were conducted verbally by telephone or in person. The yarning circles provided an environment in which respondents could complete the survey document in a collaborative and supportive environment, in which conversation and sharing of insights occurred, prior to survey completion. The completed surveys were included in the overall number of surveys that were then analysed together but counted as a single submission per completed survey - thus, some survey respondents represented more than one individual but spoke as a collective voice. One group represented an Aboriginal Corporation. Their organisation's process guided their response. It involved understanding more about the survey from the research team, then drafting responses offline, sharing among the Aboriginal Corporation's staff and Board, and securing cultural approval. This internal consultation process was explained as:

"We are still gathering evidence and confirming the multiple layers of [climate change] impacts to Country and people as we delve into the specifics of what change is occurring in our Country" (Yorta Yorta Aboriginal Nation respondents, IPCC Voices survey, 2023).

Yarning is an Indigenous methodology, with similarities to semi-structured interviews (Bessarab and Ng'andu, 2010), that is based on storytelling and recognises the strong oral communication preferences and skills of Indigenous Peoples. Yarning can occur across a range of mediums and in individual or group settings ('yarning circles'). The researcher seeks to build on existing rapport with the respondent and conduct a trust-based conversation while ensuring key question topics are covered.

The yarns and yarning circles used a storytelling approach in which respondents can talk about climatic changes observed and possible responses were valuable to set the scene and develop a shared understanding of a range of perspectives before providing very targeted IPCC questions. This approach enabled detailed information to be gathered that authentically amplified the voices of Indigenous Peoples in a culturally safe manner. Dedicated outreach was undertaken to gather perspectives from those with lived experience and professional experience using the Indigenous methodology of 'yarning', an approach that speaks with, not across. The yarning circles were led by Aboriginal and Torres Strait Islander researchers in particular communities in the Torres Strait Islands and central Australia. This enabled culturally sensitive approaches and engagement with existing networks that built on existing and trusted working and cultural relationships.

The individual yarns were up to 90 minutes to allow rapport-building and enable voices to emerge and be recorded. The response rate and depth were more detailed than the survey response completed online or on paper and individually. However, this request for time and sharing does involve a relational interaction from the interviewer to the respondents, with whom they are already familiar - often through a cultural connection. Therefore, this access enabled through personal and cultural relationship connections needs to be understood as a goodwill exchange with cultural and familial obligations; it becomes a significant request and extends the relationship of reciprocity.

Each response was written up by the Indigenous interviewer or research support person. The interview responses were combined with the survey results, then comprehensively analysed to identify the main themes that emerged. Relevant quotes were selected to illustrate some of the results to provide a clear voice from those involved.

Indigenous-led team reflections

Iterative discussions were conducted among the research team members, led by the Indigenous members, to interrogate the emerging findings in combination with reflections on the data gathering processes and expectations held by many Indigenous respondents regarding the use and impact of their data. This reflexive approach was a key method of the data gathering as it enabled the Indigenous team members to reflect on their many aspects of relevance to this research: their Indigeneity, their experience in climate change research, their data gathering experience for this and other research, and their cumulative experiences of engaging in Indigenous-focused issues with various government jurisdictional levels. These separate and intersecting roles offered a rich set of data of key relevance to both the specific purpose of this research as well as key values beyond this report.

Results and recommendations

Literature and information review results

Aboriginal and Torres Strait Islander Peoples have long held Knowledges relevant to climate change and called for their 'seat at the table' in discussions and decision-making about their futures, health and wellbeing, their rights, and their Country. There is a significant body of sources that documents Indigenous Peoples' knowledge and concerns about the impacts of climate change on their communities. A scoping review of relevant literature and information was conducted to broadly collate these sources.

This section outlines the broad recommendations consistently reiterated across reviewed sources, though often applied in varying specific contexts and issues. These recommendations are split into overarching themes: firstly, and most relevantly, recommendations relating to improving Indigenous engagement and inclusion in IPCC Assessment Reports and processes; secondly, recommendations for governmental adoption of a rights-based approach; thirdly, how to listen, respect and elevate Aboriginal and Torres Strait Islander Peoples' voices; and lastly, recommendations to incorporate Indigenous Knowledge holistically.

IPCC-specific recommendations

Recommendation 1: Acknowledge the marginalising impact of IPCC processes

It must be recognised that the IPCC Reports do not play a "value neutral role" (Ford et al. 2016). Indeed, the process involves significant curatorship, and the final output is influenced by the positionality and disciplinary background of the reviewers (Ford et al., 2016). IPCC processes, like conveying knowledge into the dominant language and through Western scientific qualifications and approaches, have a role in marginalising knowledge systems which are incompatible with these formats (Carmona et al., 2022; Ford et al., 2016). There must be self-reflection of the role of the IPCC in perpetuating inequalities. Possible ways to address this largely relate to broadening the validation process of both peoples and knowledges, such as recognising that there are numerous valid ways to convey knowledge or qualify expertise of knowledge holders.

Recommendation 2: Create an Indigenous-focussed section of the IPCC Assessment Reports

The 2023 Permanent Forum on Indigenous Issues explicitly recommended that the IPCC, in the AR7 cycle, prepare a specific Indigenous report led by Indigenous academics, scientists and Traditional Knowledge holders "to assess the opportunities for and threats against Indigenous Peoples in the areas of adaptation, mitigation, and loss and damage" (Economic and Social Council, 2023).

There is further value in Indigenous Knowledge and scholarship in IPCC Assessment Reports with the connection and lived experience through story (oral traditions) of changes over deep time that has been passed down from generation to generation (Nunn and Reid, 2016). This echoes other scholars who call for a specific Indigenous and Traditional Knowledge chapter in the Assessment Reports (e.g., Ford et al., 2016). This should not lead to reduced incorporation of Indigenous Peoples in other chapters, but rather references to Indigenous Peoples should become more consistent across reports and working topics in addition to a specific Indigenous chapter (Carmona et al., 2023).

This can occur through two interlinked ways through Australia's potential influence. Firstly, the Australian Government can request/insist that in the Australasian Chapter we create an Indigenous focused section. Following this, the Australian Government can suggest and lobby for a Indigenous focused section for the broader IPCC report as a whole.

Recommendation 3: Increase and recognise Indigenous contribution, especially as Lead Authors

To properly incorporate Indigenous Knowledge and perspectives, there must be greater Indigenous authorship, especially as Lead Authors, as well as the establishment of formal mechanisms for more broader participation of Indigenous Peoples (Carmona et al., 2022; Ford et al., 2016; Moggridge et al., 2022). Further, the gap in Indigenous authorship and therefore the extent of the cultural competency of the non-Indigenous authors must be acknowledged. In the AR6, there were no Indigenous Lead Authors in the Australasian chapter, precluding important contributions (Moggridge et al., 2022). Moreover, where authors are Indigenous, this is not recognised in the IPCC report process.

Indigeneity should be acknowledged in addition to the details of where authors live and work (Carmona et al., 2023).

Recommendation 4: Focus on a strengths- and rights-based narrative

A review of the AR5 found that Indigenous inclusion is frequently limited to a broad brush “victim-hero” narrative: Indigenous Peoples are described binarily as one of the most vulnerable groups to climate change impacts but hold important solutions for specific localised problems (Ford et al. 2016). However, the reasons *why* this is the case - namely the historical, political, social and economic processes that have garnered both these vulnerabilities and the underlying epistemology driving climate change - are not critically addressed (Ford et al., 2016).

Deficit narratives should not dominate Indigenous engagement in the IPCC reports as it frames Indigenous Peoples as passive, vulnerable victims, ignoring the power of the environmental connection, knowledge and epistemology Indigenous Peoples hold that is relevant to the aims of the IPCC reports (Hernandez et al., 2022). A strengths-based approach is both an accurate reflection and important to reframe Indigenous Peoples as self-determined solution-holders, rather than Peoples in need of rescuing.

In and beyond the IPCC: Listen, respect and elevate Aboriginal and Torres Strait Islander Peoples’ Voices

Recommendation 5: Do not categorise Aboriginal and Torres Strait Islander Peoples as “stakeholders”

By recognising all climate and environmental discourse and action has an unequivocal impact on the rights of Indigenous Peoples and communities, and that effective discourse and action cannot be achieved without Indigenous Knowledge, Indigenous Peoples cannot be deemed as mere stakeholders (Fischer et al. 2022; Foley et al. 2023). ‘stakeholdership’ misdescribes the connection to, obligation for, and knowledge about Country. It also ignores the demonstrated success of Indigenous Peoples’ knowledge and practices in maintaining a resilient, healthy Country (Costello et al., 2021; Ogar et al., 2020). Instead, referring to Indigenous Peoples as leaders and co-managers better reflects their roles (Fischer et al. 2022).

Indigenous management is universally observed to be superior at preserving and restoring biodiversity, where Indigenous Peoples, making up only 5 percent of global population, care for 80 percent of the world's biodiversity (Ogar et al., 2020; Special Rapporteur on the rights of Indigenous Peoples, 2017). Indeed, evidence of Indigenous Peoples with secured rights to their homelands correlates with lower rates of deforestation and greater carbon sequestration (Hales et al., 2021). The same is reflected in Australia, where Aboriginal and Torres Strait Islander Peoples, constituting 3 percent of the greater Australian population, formally care for over 54 percent of Australia’s landmass and manage almost half of Commonwealth parks and reserves (Foley et al., 2023) (these figures also do not include the ongoing caring and environmental management practised over regions where rights are not recognised).

Aboriginal and Torres Strait Islander Peoples do not merely have a *stake* in the future of the land and waters within their traditional territory. Rather, the *survival* of Peoples, culture, wellbeing, lifestyle and 65,000 years of history is inextricable from this Country and the rights to maintain these are codified in numerous international human rights conventions (Special Rapporteur on the rights of Indigenous Peoples, 2017; Morgan-Bulled et al., 2021; Sultana, 2022)

Recommendation 6: Provide opportunities for Indigenous Peoples to be heard at all levels

Measures should be adopted in law, policy and administration to support Indigenous leadership or provide avenues of input in climate change research, discussion and adaptive and mitigatory measures at all levels, in full recognition of Indigenous rights (Morgan-Bulled et al., 2021; Mustonen et al., 2022; Special Rapporteur on the Rights of Indigenous Peoples, 2017). Supporting leadership must be particularly prioritised, since the majority of Indigenous input is presently limited to data production rather than possessing genuine decision-making capabilities (Department of Health and Aged Care, 2023; Fischer et al., 2022).

The possible avenues for Indigenous input in the international stage is increasing as the wide scale need for Indigenous knowledge and leadership becomes growingly apparent. For instance, a Local Communities and Indigenous Peoples Platform has been developed for Indigenous Peoples to come together and have a more active role in the UNFCCC

process (Woodward et al., 2020). The draft agenda for the COP28 in 2023 includes an item on enhancing the participation of Indigenous Peoples in the UNFCCC process and the Paris Agreement, and how to strengthen their engagement in national climate policy making and climate-related work and processes (Subsidiary Body for Scientific and Technological Advice, 2023). It is recognised that it is a particularly apt time to rectify the previous exclusion or silencing of Indigenous voices as it is the UN General Assembly 2021-2030 Decade of Ecosystem Restoration (Ogar et al., 2020).

Australia has obligations to create avenues for Aboriginal and Torres Strait Islander Peoples input in international discussions, stemming from the UNFCCC, the Paris Agreement, Sustainable Development Goals, United Nations Development Program, the United Nations Convention on Biodiversity and the UNDRIP (Indigenous Peoples Organisation Australia, 2021). A critique of Indigenous inclusion in the AR6 recommended that these national obligations can be aided by establishing systems to monitor and report on effective Indigenous engagement, including Indigenous representatives in national IPCC delegations, and creating culturally-appropriate mechanisms for direct participation in IPCC processes (Carmona et al., 2023).

At a national level, permanent mechanisms could be established to enable full and equal participation of Aboriginal and Torres Strait Islander Peoples in developing climate change planning, policy, negotiations, monitoring, mitigation and adaptation strategies (Australian Human Rights Commission, 2020; Carmona et al., 2023; Special Rapporteur on the rights of Indigenous Peoples, 2017). The *Australia State of the Environment Report 2021* also heavily emphasised that, in order for voices to be heard, there must be reform to remove the barriers faced in exercising the stewardship of Country, through approaches focused on self-determination and Indigenous agency and control over economic, social and cultural matters (Department of Agriculture, Water and the Environment, 2021).

This requires a full commitment to the *Uluru Statement from the Heart*, including the establishment of a Makarrata Commission to negotiate treaty, as well as reform to cultural heritage, native title, environmental legislation and practices to enact the rights that the federal government is obliged to afford Aboriginal and Torres Strait Islander Peoples.

Such rights include the right to consent or reject proposals over their lands, the right to Country, or the right to have significant cultural heritage protected. As demonstrated by breaches of these rights under various legislative schemes, such as the destruction of Juukan Gorge, change is urgently needed to address the deficiencies (Economic and Social Council, 2023). At the 2021 National First Peoples Gathering on Climate Change, there were also calls for a federally funded Indigenous-led climate action hub (Morgan-Bulled et al., 2021).

More locally, opportunities to elevate and empower Aboriginal and Torres Strait Islander Peoples can be achieved through ensuring Indigenous communities are not only engaged with, but adequately supported to build capacity to lead climate initiatives, such as in abatement and renewable energy projects (Carmona et al., 2023; Costello et al., 2021; Indigenous Peoples Organisation Australia, 2021). This can involve creating avenues for Traditional Owners to be partners or otherwise included, having representation in environmental management institutions and creating frameworks for appropriate and collaborative research (Costello et al., 2021).

Recommendation 7: Support local and Indigenous-led climate change initiatives including legal protections

Although climate change is a global issue, the support of local and Indigenous-led initiatives is a key solution. There was a common rhetoric throughout the literature: climate change can only be addressed with the knowledge of the Peoples experiencing its impacts firsthand and who are equipped with the history, experience, knowledge and practice to design and implement solutions (Lowitja Institute, 2023; Mustonen et al., 2022).

All climate change initiatives should hence be culturally appropriate, decided by the local community and exercised by the community's organisations (Lansbury et al., 2022). For example, there should be Indigenous engagement in and benefit from emerging opportunities within emerging renewable economies, carbon farming, climate monitoring, or ranger programs (HEAL Network & CRE-STRIDE, 2021; Indigenous Peoples Organisation Australia, 2021). Support requires building adaptive capacity through genuine power sharing partnerships; respect for both Peoples and their contribution; education; training; and long-term sustainable funding (Costello et al., 2021; James et al., 2021).

There must also be streamlined cohesion between the levels of government and agencies that work with communities and opportunities for intersectional collaborations, otherwise bureaucratic layers preclude meaningful action and the onus rest on Traditional Owners to seek many partnerships to effect change (HEAL Network & CRE-STRIDE, 2021; James et al., 2021). Without proper capacity building and support for communities and local representative organisations, Peoples are left powerless, unable to contribute and forced to be depended on outsourced and less effective services and supports (James et al., 2021).

Place-based and Indigenous-led initiatives have been found to have benefits for the environment, communities and individual wellbeing and local economy (Department of Agriculture, Water and the Environment, 2021). For instance, the Indigenous Carbon Industry Network supports Indigenous-owned projects involved in the carbon credits scheme in Australia, which has been found to bring co-benefits to the local Indigenous and non-Indigenous populations, environment and economy (Indigenous Carbon Industry Network, 2022). Indigenous Ranger Programs have been found to be highly successful in all measures, and is recommended to be extended to all Aboriginal communities with their control (Indigenous Peoples Organisation Australia, 2021). The Aboriginal Carbon Foundation, focused on Indigenous-led fire management in Northern Australia, has resulted in fewer carbon emissions and greater carbon storage, while simultaneously strengthening social, cultural and community wellbeing (Hales et al., 2021). Such opportunities support Peoples on Country and engage in cultural stewardship practices, which heals both Country and its Peoples (Costello et al., 2021; HEAL Network & CRE-STRIDE, 2021; Lansbury et al., 2022).

A very specific place-based response may be the consideration of forced migration due to climate change impacts. The UN Global Compact on Safe, Orderly and Regular Migration (IOM, 2018), describes climate change-related migration across international borders. For example, Objective 2 under ‘Natural disasters, the adverse effects of climate change, and environmental degradation’ describes the need to ‘Develop coherent approaches to address the challenges of migration movements in the context of sudden-onset and slow-onset natural disasters’ (IOM, 2018, Obj.2 (I)). However, internal migration within countries (Cisse et al., 2022) is not covered by international law (Ghaly, 2021), raising questions of options and support for Torres Strait Islanders and other saltwater Country Peoples who are experiencing sea level rise and inundation.

In and beyond the IPCC: Holistic incorporation of Indigenous Knowledge

Recommendation 8: Recognise Indigenous Knowledge as a system and integrate it equivalently with Western knowledges

The acceptance that Indigenous Knowledge is a rich and nuanced system is essential to proper application of this knowledge (Fischer et al., 2022; Ford et al., 2016). Although use of Indigenous Knowledges in mainstream disciplines is increasing, it remains through a Western lens where inclusion in research and plans is complementary, and never directly considered side-by-side with Western knowledge and understandings (Ford et al., 2016; Moggridge et al., 2022; Mustonen et al., 2022). For example, the AR6 recognised the value of Indigenous and local knowledge and was largely included in WGII, but stated that the “challenge” of assessing and integrating this knowledge into the report rendered its exclusion from most WGI chapters (IPCC, 2022).

The inability of the IPCC processes to properly afford Indigenous Knowledge with the same critical engagement, equivalent legitimisation and application as Western science sources has left the report with “severe limitations” (Ford et al., 2016; HEAL Network & CRE-STRIDE, 2021). Further, recognition is limited to local actions such as adaptive techniques or specific events, but the values and worldviews that underpin these are not explored, diminishing the holistic contribution such knowledge can have to climate change understandings and solutions generally (Carmona et al., 2023; Ford et al., 2016; Mustonen et al., 2022).

The isolation of Indigenous Knowledge and practices for use only where it can be slotted into the existing framework appropriates and misapplies this Knowledge, cherry picking one aspect of an entire, nuanced system. This pattern is not limited to the IPCC process but is present in much climate change and environmental research and management. For example, cultural burning practices in Australia have become highly popular inclusion in what is often otherwise non-Indigenous environmental management. As has been reiterated by Indigenous leaders and rangers, cultural

burning cannot be separated from the holistic practice of how to care for Country, and to apply such practices requires acknowledgement of the Indigenous epistemologies as a whole (James et al., 2021).

There is clear guidance on how to prevent tokenistic inclusion (see, for example, Carmona et al., 2023; Fischer et al., 2022; Ford et al., 2016; Ogar et al., 2020): the existing power inequalities that lead to the “inferiorisation” of Indigenous Knowledges must firstly be recognised and addressed; secondly, equivalent respect must be afforded to Indigenous Knowledges, practices and knowledge holders, recognising that these are independently valid without external legitimisation; thirdly, there could be horizontal collaboration to work with the non-Indigenous and Indigenous Knowledge systems to co-produce knowledge and therefore adaptive solutions, with Indigenous Knowledge not on the periphery or subsumed.

Recommendation 9: Create genuine partnerships with reciprocity, power sharing and respect

Although all recommendations collated in this review are interrelated and important, the achievement of all aforementioned recommendations is dependent on strong partnerships of governments, agencies, organisations and non-Indigenous people with Aboriginal and Torres Strait Islander Peoples and communities. This evidently requires the healing of deep relational wounds inflicted over two centuries of wrongs (Lowitja Institute, 2023).

The ongoing process of colonisation can only be healed with truth telling, coupled with the paradigm shift and genuine power sharing that is foundation to partnerships by definition (Fischer et al., 2022). Despite the harms inflicted, Aboriginal and Torres Strait Islander Peoples are willing to forge these partnerships, if done with foundations of fairness, justice and self-determination: “We invite you to walk with us in a movement of the Australian people for a better future” (National Constitutional Convention, 2017). Similarly, the *2021 First Nation Peoples Statement on Climate Change* asks Australia to be respectful allies in asking the nation to “listen to us, work with us and together we can enact a change that will shape our future for all Australians” (Morgan-Bulled et al., 2021).

Building respectful, trusting partnerships across all levels to weave together Aboriginal and Torres Strait Islander and Western knowledge systems is crucial to best innovate mitigation and adaptations to our crises (Department of Health and Aged Care, 2023; HEAL Network & CRE-STRIDE, 2021; Special Rapporteur on the rights of Indigenous Peoples, 2017). CSIRO, working with communities across the continent, has developed best practice guidelines for using Aboriginal and Torres Strait Islander knowledge to look after Country. CSIRO led *Our Knowledge Our Way* (Woodward, et al., 2020) in caring for Country Best Practice Guidelines, gives a voice to Indigenous land and sea managers who have found good ways to strengthen their knowledge and build partnerships for knowledge sharing in caring for Country. Key to this is building strong partnerships through trust, respect, mutual learning and open-mindedness; sharing and weaving knowledge; and building networks to share knowledge (Woodward et al., 2020).

In and beyond the IPCC: A rights-based approach

Recommendation 10: Implement free, prior and informed consent for Indigenous Peoples’ engagement in climate change action and measures

The literature unanimously supports that free, prior and informed consent (FPIC), a right enshrined by articles 27 and 32 of the UNDRIP, must be implemented and complied with to ensure Indigenous Peoples have a meaningful say in all stages of climate change action and measures which may affect their rights or territory (Economic and Social Council, 2023; Special Rapporteur on the rights of Indigenous Peoples, 2017). This particularly arises in measures that require land or resources, like restoration or abatement projects. However, it is widely noted that the FPIC should be the *minimum* standard (Economic and Social Council, 2023; Special Rapporteur on the rights of Indigenous Peoples, 2017).

The WGII of the AR6 states “obtaining free and prior-informed consent is a necessary but not sufficient condition” and that supporting “self-determination in climate change assessment, response and governance is critical” (Mustonen et al., 2022). A review of the AR6 findings relating to Indigenous Peoples recommended that nations must strengthen the direct participation of Indigenous Peoples in the design and implementation of climate action, consistent with FPIC processes and effective empowerment to aid self-determination (Carmona et al., 2022). Asserting FPIC as a minimum reflects that Indigenous Peoples are not merely victims of climate change, but have a vital input in sustainable management (Hernandez et al., 2022; Special Rapporteur on the rights of Indigenous Peoples, 2017).

FPIC is recommended as best practice in Australia, but is not a legal requirement (for example, s 25 of the *Native Title Act 1992* (Cth) instead provides the watered down “right to negotiate”) (Southalan and Fardin, 2019). However, all climate research and action in Australia impacts Aboriginal and Torres Strait Islander Peoples (Hales et al., 2021). The general failure to afford Aboriginal and Torres Strait Islander Peoples the rights contained in the UNDRIP has led to ongoing harm to both Country and Peoples, international criticism and is presently subject to a federal inquiry (Parliament of Australia, n.d.). The Indigenous Peoples Organisation Australia have specifically called for the UNDRIP to be enacted into domestic law, coupled with the establishment of a National Action Plan and monitoring body to support its implementation (Indigenous Peoples Organisation Australia, 2021).

The need to nationally implement FPIC as a minimum in all relevant sectors is increasingly urgent to prevent further violations of Aboriginal and Torres Strait Islander Peoples’ rights. The implementation of a rights-based approach, with FPIC as the starting point, has widespread benefits: it provides a proper relational foundation for the inclusion of Peoples’ voices and Knowledges to inform climate change discourse and action to create more effective solutions and investing in communities has flow on economic, social, cultural and health benefits (Department of Agriculture, Water and the Environment, 2021).

Recommendation 11: Recognise the colonial drivers of threats by embedding self-determination and capacity building in all action

The root causes of climate change must be addressed to take effective action. Climate change and the vulnerability of Indigenous Peoples to such change can both be linked to colonisation (Lowitja Institute, 2023). Indeed, Aboriginal and Torres Strait Islander Peoples have already likened climate change effects to colonial dispossession - seen through the degradation of Country and weather extremes in circumstances where Traditional Owners have limited power to address these impacts. This in turn hinders cultural practices, threatens food and water security and risks forced migration (Australian Human Rights Commission, 2020).

As stated by the International Work Group for Indigenous Affairs, “Indigenous Peoples have been emphatic: The climate crisis will not be solved by the same paradigm that caused it” (Carmona et al., 2023). Therefore, a “climate-resilient” future can only be achieved by addressing the interrelated impact of colonisation and climate change on Indigenous Peoples by protecting their rights (Mustonen et al., 2022; Planetary Health Alliance, 2023). This was highlighted in the AR6: “supporting Indigenous self-determination, recognising Indigenous Peoples’ rights and supporting Indigenous Knowledge-based adaptation are critical to reducing climate change risks and effective adaptation” (IPCC, 2022).

If a right-based approach is adopted, climate change can provide a path of just transition. Alternatively, climate change will perpetuate Indigenous dispossession and disempowerment, resulting in what has been termed “eco-colonisation” or “carbon colonialism” (Foley et al. 2023; Special Rapporteur on the Rights of Indigenous Peoples 2017; Carmona et al. 2023). Indeed, Aboriginal and Torres Strait Islander Peoples have already likened climate change effects to colonial dispossession; seen through the degradation of Country and weather extremes, in circumstances where Traditional Owners have limited power to address these impacts, which in turn hinders cultural practices, threatens food and water security and risks forced migration (Australian Human Rights Commission, 2020).

A transitional, rights-based approach fundamentally rests on the right to self-determination in all levels of climate mitigation, adaptation and environmental management policy development and programs (Indigenous Peoples Organisation Australia, 2021) (Department of Agriculture, Water and the Environment, 2021). This includes providing equitable opportunities and economic benefit to the relevant Peoples, such as investment and employment opportunities of communities in emerging opportunities in renewables (Fischer et al., 2022; Foley et al., 2023; Indigenous Peoples Organisation Australia, 2021).

Self-determination is enshrined in Australia’s commitment to articles 1 of both the *International Covenant on Economic, Social and Cultural Rights* and the *International Covenant on Civil and Political Rights* and article 3 of UNDRIP. Supporting Aboriginal and Torres Strait Islander communities to self-determination is achieved through steps at every level. Firstly, laws, policies and practices need reform for national consistency to support self-determination

and empowerment (Department of Agriculture, Water and the environment, 2021; Special Rapporteur on the rights of Indigenous Peoples, 2017). Secondly, there must be support of local, Indigenous-led initiatives.

Recommendation 12: Acknowledge the interconnected health of Peoples and health of Country

Sources reviewed consistently state that all climate action must involve health-protective responses. There is a growing movement to reconcile that the health of the planet and its peoples are inextricably connected; a concept which has been embedded in Indigenous cultures since time immemorial (Department of Agriculture, Water and the Environment, 2021; Morgan-Bulled et al., 2021).

Recognition of interconnected health is an important foundation to develop adequate action to address the health impacts of climate change in both respects, of which Indigenous Peoples are the most vulnerable (IPCC, 2022). The 2023 session of the United Nations Forum for Indigenous Issues, themed, “Indigenous Peoples, human health, planetary and territorial health and climate change: A rights-based approach”, emphasised that Indigenous holistic understanding of health must be central to planetary health governance (Economic and Social Council, 2023).

A list of Indigenous determinants of health was developed to attempt to decolonise defining conceptions of health, which also recommended “Indigenous global healing traditions are intrinsically valuable and understudied and are a global asset and should be promoted and protected in conjunction with the ecosystems that sustain them” (United Nations Economic and Social Council, 2023). Other bodies have recognised that the “triple planetary crisis” of biodiversity loss, climate change and pollution cannot be solved without an integrated planetary-health governance framework (Planetary Health Alliance, 2023).

This movement is echoed in Australia, as climate change threatens people-Country health more than ever before. In the *Australia State of the Environment Report 2021*, which had an unprecedented designated Indigenous chapter, a key finding was that “the health of Country and people are deeply interconnected” (Department of Agriculture, Water and the Environment, 2021). However, the Report classified the state of Country and this connection as “very poor”, with many signs indicating deteriorating health of Country across the continent and correspondingly that Indigenous Peoples continue to be barred from caring and managing Country (Department of Agriculture, Water and the Environment, 2021). The *HEAL Report*, which comprehensively examined the impacts of climate change on Aboriginal and Torres Strait Islander Peoples’ health and wellbeing, confirmed what is known; sick Country leads to sick Peoples (HEAL Network & CRE-STRIDE, 2021).

The impact of climate change especially threatens Aboriginal and Torres Strait Islander Peoples’ health, compounding pre-existing poor morbidity and mortality rates which stem from historical injustices (Department of Health and Aged Care, 2023; HEAL Network & CRE-STRIDE, 2021). These impacts vary, but largely relate to increasing severity of weather and temperature extremes, sea level rise, worsening food and water security, increased infectious diseases and the amplification of poverty, as well as the deep-felt impact of Country degradation (Lansbury et al., 2022; HEAL Network & CRE-STRIDE, 2021).

Environmental and Indigenous health can be restored with Indigenous-led and governed caring for Country (Department of Agriculture, Water and the Environment, 2021; Lansbury et al., 2022). The federal *National Health and Climate Strategy 2023*, recognising Indigenous Knowledge and practices must inform effective planning, policy and programs to achieve goals such as *Closing the Gap*, is underpinned by the concept of “One Health” - the recognition of the connection that exists between the health of people, animals and the environment (Department of Health and Aged Care, 2023). This requires transforming the principles and practices that guide decision-making by broadening the underlying definition of health, abolishing the false dichotomy of the health and environmental sectors that dominates Western epistemologies and governance (Lowitja Institute, 2023).

Recommendation 13: Support Indigenous women to empower themselves in climate change leadership

There is a particular impact of climate change on Indigenous Peoples, and separately, that climate change has a gendered impact (Special Rapporteur on the Rights of Indigenous Peoples, 2017). Effects such as migration and water scarcity are likely to affect women and girls in particular, making them more vulnerable to discrimination and exploitation, and climate change impacts compound existing issues that women disproportionately face, such as domestic violence (Sorensen et al., 2018). However, as has been highlighted as a failure of the AR6 WGII, how these impacts intersect for Indigenous women is frequently omitted from climate research (Carmona et al., 2022; HEAL Network & CRE-STRIDE, 2021). This omission precludes any subsequent action taken from properly capturing the perspectives and protecting the rights of Indigenous women.

It is important to recognise the intersectional impact of gender and Indigenous identity and the voices of Aboriginal and Torres Strait Islander women, taking particular care to protect their rights in climate change adaptation and mitigation policies and projects (Special Rapporteur on the rights of Indigenous Peoples, 2017). An evolving and impactful term “rematriation” described in depth linking to water in Leonard et al., 2023, which is a term coined to reinvigorate and inspire humanity to fulfil its duty of care for Mother Earth (Gray, 2022; Newcomb, 1995; Rematriation, 2023). This is pertinent to climate change and this research team, with strong women in leadership.

Recommendation 14: Protect Indigenous Knowledge when using Knowledge

As the invaluable contribution of Indigenous Knowledge in a changing climate is increasingly recognised, such knowledge must be adequately protected, with the rights and recognition at all times resting with the proper knowledge holders (Mustonen et al., 2022). The centring of Indigenous Knowledge must go “hand-in-hand” with cultural and intellectual property protection through both legal and non-legal measures (Department of Agriculture, Water and the Environment, 2021; HEAL Network & CRE-STRIDE, 2021; Mustonen et al., 2022).

In Australia, cultural and intellectual property rights to protect Indigenous Knowledge and practices have been identified as inadequate and in urgent need of national reform (Department of Agriculture, Water and the Environment, 2021). As described at the Indigenous Data Sovereignty Summit in 2018, “existing data and data infrastructure does not recognise or privilege our Knowledges and worldviews nor meet our current and future needs” (Department of Agriculture, Water and the Environment, 2021).

The use of Knowledge without protection risks appropriation, harm to Aboriginal and Torres Strait Islander Peoples’ engagement, and misuse of this Knowledge when applied. Enshrining these protections aligns with international standards under the *Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (ABS) to the Convention on Biological Diversity* which requires commitment to work with Indigenous Knowledge holders to preserve and maintain Indigenous Knowledge and practices (Woodward et al., 2020). Such protections need to be reflected at all levels, including in the international sector, where Ford et al. (2016) states IPCC reports should develop special guidelines for accessing and incorporating Indigenous Knowledge systems.

Survey and extended yarning results

This survey sought depth rather than breadth. It was designed to allow for meaningful and rich insights. In particular, the surveys undertaken in person, or on the phone and with people on Country, were generally longer, or included an extended yarning component. This finding provides insights into how the Government could collect further data that might be needed, in a meaningful, data-rich, and respectful way.

The total sample size was 102 surveys, with 70 surveys comprehensively completed. Of the respondents who identified their cultural background, 74 percent were Aboriginal and Torres Strait Islander Peoples (see [Table 2](#)). Fourteen identified as Aboriginal (23.73 percent), 25 identified as Torres Strait Islander (42.37 percent), 5 identified both Aboriginal and Torres Strait Islander (8.47 percent), while 15 were non-Indigenous (25.42 percent). The Aboriginal and Torres Strait Islander respondents who shared details had cultural connections with 43 Countries and/or language groups from across most states and territories.

Table 2: Cultural Background of respondents

Cultural Background	n	%
Aboriginal	14	23.73
Torres Strait Islander	25	42.37
Aboriginal & Torres Strait Islander*	5	8.47
Non-Indigenous	15	25.42
Total	59	

*Participants selected both Aboriginal and Torres Strait Islander backgrounds.

Participants were asked for the place name or postcode of where they currently live (see [Table 3](#)). From those who responded to the question (N = 55), responses came from every state and territory, except South Australia. The majority of responses came from Queensland (n = 35, 63.64 percent). This was likely due to the location and connections of two of the Indigenous research team members based in Queensland who engaged through their trusted contacts and connections directly.

Table 3: States and Territories of respondents

State/Territory	n	%
QLD	35	63.64
NSW	6	10.91
VIC	3	5.45
WA	1	1.82
TAS	3	5.45
NT	3	5.45
ACT	4	7.27
SA	0	0.00
Total	55	

More than half of the participants who provided their age indicated they were between 31-60 years (n = 43, 69.35 percent), see [Table 4](#). The 61+ age category had the second largest number of responses, with 22.58 percent of participants who responded to the question falling into this age category (n = 14). The 18-30 age category had the lowest percentage of participants who responded to the question, 8.06 percent (n = 5).

Table 4: Age

Age (years)	n	%
18-30	5	8.06
31-60	43	69.35
61+	14	22.58
Total	62	

The survey had a higher proportion of male participants (n = 34, 54.84 percent), than female (n = 26, 41.94 percent), with 2 participants (3.23 percent) selecting "*prefer not to say*".

The participants presented a broad array of roles and jobs relevant to the environment, which were identified as community and professional roles. Some participants had both a community and professional role and these are both reflected in the numbers below. 56 people responded to the question, with 5 responding as not working, and 51 responding with a role. From the 51 participants who responded with a role, 14 responded with a community role, and 45 responded with a professional role. 35 of the 51 responses with a role or job were Indigenous. Of the Indigenous respondents, there were 12 participants with a community role, and 29 with a professional role. Of those who identified as non-Indigenous, 2 had community roles, and 14 had professional roles.

Examples of community roles included "*Traditional Owner*", "*Knowledge Keeper*", "*Elder*", "*Cultural Custodian*", Prescribed Body Corporate member, and family member. Relevant professional roles were diverse, with roles in academia, advocacy, land and sea management, legal, council and more. Examples included "*Land and Sea Management officer*", "*environmental scientist*", "*ranger*", and "*lawyer*".

IPCC-specific recommendations from the survey and yarning results

The survey and yarning results are presented in this and the following sections to separate the IPCC-specific results and associated recommendations from the broader climate change recommendations with relevance to and beyond the IPCC.

- **Indigenous Australians' familiarity with the IPCC and IPCC reports**

Recommendation 15: Increase familiarity and use of the IPCC and its reports for Indigenous Australians with a community and/or professional role of relevance to climate change.

Of the total respondents to this question (N=65), 51.56 percent (n=33) had heard of the IPCC and the IPCC reports, followed by 32.81 percent (n=21) who had never heard of either, 17.19 percent (n=11) who were not sure. It is noted that this is a mixed sample of professionals working on climate change (both Indigenous and non-Indigenous) and Indigenous Knowledge holders who were not necessarily working in a professional role related to climate change. Therefore, it is more meaningful to explore the cohorts within this wider sample.

Of those who identified as Indigenous (n=44), 33 percent (n=15) had heard of the IPCC and its reports. The responses from Indigenous Australians were further grouped for analysis by their self-disclosed role in terms of relevance to environmental issues (including climate change): community, professional or none. Twenty seven percent (n=12) of Indigenous respondents were in community roles (including as Elders in their community and Knowledge holders) and only 1 of this group had heard of the IPCC and its reports; 55 percent (n=24) had professional environmental roles and of this group half (n=12) had heard of the IPCC and its reports. However, it is noted that non-Indigenous respondents were approached if their professional work focused on climate change, so this was a strongly 'IPCC-aware' sample. Of those respondents who were either non-Indigenous or did not state their cultural background (n=20), 18 (90 percent) had heard of the IPCC reports.

In summary, the IPCC and its reports are familiar to most non-Indigenous professional respondents working on climate change. However, this familiarity is much lower for Indigenous professional respondents working on climate change and there is almost no familiarity for Indigenous respondents with a community role of relevance to climate change.

- **Usefulness of the IPCC and IPCC reports**

Recommendation 16: Ensure that IPCC reports provide relevant and applicable information on climate change in terms of the science and the localised impacts and increase the focus in the reports on Indigenous Knowledges.

Of those who had heard of the IPCC and its reports (n=33), respondents were asked how much they had used these reports in their work on a scale from “not at all” to “a lot”. The median response was in the middle of the range of options (1-10) of, “not at all” (n=3) to “a lot” (n=6).

Those respondents who had used IPCC reports in their work were asked how they had used them, with three options offered, as well as an opportunity to enter their own response. Respondents were asked to select all options that applied. Of those who responded (N=26), the uses were (in order of most endorsed responses), “good arguments in favour of climate change” (n=21), “information to alert people to urgent need for action” (n=18) and “specific data about my Country” (n = 11, noting this was selected by both Indigenous and non-Indigenous respondents, despite the meaning of 'Country' being intended for Indigenous respondents).

Some respondents (n=7) also provided their additional uses of the report. A policy focus was the purpose for two Indigenous respondents, one focused on international climate policy and the other on the colonised nature of policy, stating they were “investigating the colonial approach to global climate decisions” (Indigenous respondent). Using the reports to emphasise the value of Indigenous Knowledges in the context of responding to climate change were the focus of two respondents (non-Indigenous and not stated); one stated that “I use [IPCC reports] to emphasise the fact that for the first time, Indigenous and community knowledges were included in the report, evidencing the increasing seriousness this is taken globally” (non-Indigenous respondent).

- **Strengthening the voice of Aboriginal and Torres Strait Islanders on climate change in the IPCC & beyond**

Recommendation 17: Increase Aboriginal and Torres Strait Islander Peoples' participation in IPCC and other climate change processes by:

- Valuing and including Indigenous Knowledges in a similar way to Western knowledges,
- Instating a minimum quota of Aboriginal and Torres Strait Islander authors
- Including/inviting Indigenous Peoples to engage in IPCC and other climate change processes
- Sharing IPCC reports back to community with locally relevant data and in culturally appropriate ways
- Establishing a Voice to Parliament/ Indigenous representation on climate issues
- Ensuring effective and meaningful two-way engagement between decision-makers and Indigenous Australians.

Respondents (N=65) were asked what they thought was needed that would enable Aboriginal and Torres Strait Islanders to have a strong voice in the climate change issue and/or the IPCC. The only response option was free text, and this resulted in a diversity of answers. When analysed, 16 themes of responses emerged, noting that each respondent may have suggested more than one change needed.

Table 5 displays the themes most stated in order from most to least frequent, split by Indigeneity of respondents as well as a total from all respondents, and includes an illustrative quote from one of the respondents for each theme. The most common suggestion (n=14) was for Australia's IPCC delegation to have a minimum quota of Aboriginal and Torres Strait Islander authors. An Aboriginal respondent described this:

"We need more Aboriginal and Torres Strait Islander authors in the IPCC reports and more effort to capture what our communities are saying. You cannot include our voices without including us" (Aboriginal respondent).

The second most common suggestion (n=11) was to value and include Indigenous Knowledges, noting that these were rarely presented, researched or published in a similar way to Western knowledges and thus required an openness to other types of knowledge and science. This was described by respondents as:

"Allow Indigenous-led data collection and responses that take in all the relationships between and in Country, rather than a siloed approach of 'this statistic' and 'that research focus'" (Aboriginal respondent).

"Evidence and data need to be collected on how we are experiencing these [climatic] changes" (Torres Strait Islander respondent).

There was a difference in emphasis apparent among the 64 total respondents to this question, where the majority (n=44) were Indigenous Peoples, while 20 respondents were either non-Indigenous or did not state their cultural background. Aboriginal and Torres Strait Islander respondents' most-suggested themes, in addition to an Indigenous quota for IPCC authors and a valuing of Indigenous Knowledges, also included an intentional inclusion/invitation to Indigenous Peoples to engage in IPCC and other climate change processes (n=7), to share IPCC reports back to community with locally-relevant data (n=6), for a Voice to Parliament/ Indigenous representation on climate issues (n=6), and for effective and meaningful two-way engagement between decision-makers and Indigenous Australians (n=6).

Table 5: Recommendations to strengthen Aboriginal and Torres Strait Islander voices on climate change in the IPCC and beyond

Thematic response	Response-Indigenous	Response-non-Indigenous & not stated	Response-total	Illustrative quote
Minimum quota for Indigenous IPCC Lead Authors	5	9	14	<i>"We need more Aboriginal and Torres Strait Islander authors in the IPCC reports and more effort to capture what our communities are saying. You cannot include our voices without including us"</i> (Aboriginal respondent)
Value and include Indigenous Knowledges as IPCC data	9	2	11	<i>"There is limited recognition regarding First Nation peoples other than relegating us to 'vulnerable communities' in context of climate change. This disregards our over 65,000 years of sustainable practices and customary knowledge of the natural environment and thus our significant contribution to policy"</i> (Aboriginal respondent)
Inclusion/invitation to Indigenous Peoples to engage in IPCC & beyond	7	2	9	<i>"To be given a platform to speak and to allow us to speak for ourselves on issues that directly impact our lives and wellbeing"</i> (Torres Strait Islander respondent)
Voice to Parliament/ Indigenous representation on climate issues	6	2	8	<i>"If we have a voice to parliament, we can highlight climate change as an issue that significantly affects us and advise on ways to combat it"</i> (Aboriginal respondent)
Effective & meaningful two-way engagement between decision-makers and Indigenous Australians	6	2	8	<i>"Explain to us what is being shared by the IPCC report and how we might be able to contribute by way of our knowledge and understanding of the impacts of climate change"</i> (Aboriginal and Torres Strait Islander respondent)
Resources for IPCC participation and for Indigenous Knowledges gathering	3	3	6	<i>"Resource the Indigenous Knowledge holders as the research leads and more members of the IPCC"</i> (Aboriginal respondent)
Share IPCC reports back to community with locally-relevant data	6	0	6	<i>"IPCC needs to make presence in community or Government to present findings of report to community in a way that is meaningful and applicable otherwise it's just another acronym with no real outcome"</i> (Aboriginal and Torres Strait Islander respondent)
Community-led solutions	4	0	4	<i>"More Indigenous leadership in climate change discussions and to be part of the solution"</i> (Torres Strait Islander respondent)

Community-led decisions	5	0	5	<i>"Community needs to come together to influence larger policy issues surrounding climate change... we need a body representing the community so that those speaking for us are communicating with, and are in tuned with what's happening on the ground"</i> (Torres Strait Islander respondent)
IPCC participation flexibility	0	3	3	<i>"A willingness to step out of 'business as usual' approach... An understanding of potential constraints to involvement (time, access, remuneration, logistics) and meaningful engagement to find new ways to overcome / work around these constraints"</i> (non-Indigenous respondent)
Value Knowledge Holders	3	0	3	<i>"Voices of Aboriginal and Torres Strait Islander peoples need to be included and seen as holding value even if those individuals don't have formal academic qualifications"</i> (Aboriginal respondent)
Government action on IPCC findings	1	1	2	<i>"Government needs to take heed of the IPCC report and act on the recommendations immediately to protect the livelihoods and cultural continuity of Aboriginal and Torres Strait Islander peoples"</i> (Aboriginal and Torres Strait Islander respondent)
Special IPCC report	0	2	2	<i>"I would hope Indigenous voices become part of all reports, but a special report may be the most feasible way forward"</i> (non-Indigenous respondent)
Climate litigation	1	0	1	<i>"Litigation like the case in the Torres Strait"</i> (Aboriginal respondent)
IPCC cultural competency training by IPCC authors	0	1	1	<i>"Cultural competency training by all authors in order to be understanding, inclusive and respectful of Indigenous data and Peoples"</i> (non-Indigenous respondent)
Allyship from non-Indigenous Australians	0	1	1	<i>"I think Aboriginal and Torres Strait Islanders need more allies who are outspoken"</i> (non-Indigenous respondent)

- Current sources of climate change information for and from the IPCC

Recommendation 18: IPCC reports are not a key source of climate change information. To increase climate change information for Indigenous Australians in particular:

- direct IPCC and other climate change information through dedicated local events and visits,
- promote accessible and targeted climate change reports,
- ensure climate change information is disseminated through social media and
- seek media coverage of climate change on all news platforms.

This question explored the sources from which respondents received information about climate change. This question was asked to determine whether IPCC reports were a core source of information for respondents, particularly the Indigenous respondents.

All respondents (N=67) provided a list of multiple sources of climate change information, indicating that they are actively and passively receiving, digesting and sharing information. However, only three respondents, none of whom stated they were Indigenous, mentioned the IPCC reports as a source. Therefore, these responses provide guidance

on where IPCC and other climate change information could be intentionally directed in order to reach a wider audience- particularly an Indigenous audience.

As noted previously, the Indigenous respondents included both scholars involved professionally in climate change and Knowledge Holders with strong connection to Country. When the Indigenous responses (n=44) were analysed together, the current information sources included:

- **Dedicated information-seeking:** attending specific community meetings (e.g., from the health clinic, housing service or local council); reading websites and newsletters of specific campaigns (e.g., Torres Strait 8 UN climate litigation case); seeking conversations with visiting researchers; conversing with local community members affected by climate changes (e.g., fishers); watching TV documentaries; conducting self-led research; reading government reports; reading academic outputs (journal articles; www.TheConversation.com)
- **Indigenous Knowledges uptake:** Listening to Knowledge Holders from community;
- **Social interaction in person:** Conversations within social networks (e.g., work, family, friends, community)
- **Social media online** (e.g., Facebook, Twitter, Instagram)
- **News outlets:** internet, TV, radio and print
- **Observations:** Personal observations of changes on Country.

It is noted that non-Indigenous respondents were approached to answer the survey if their professional work focused on climate change, and so their responses were provided at both a professional and sometimes personal level. The non-Indigenous respondents and those who did not state their cultural background had a similar list of sources to the above, although they did not include personal observations of Country nor information shared from Knowledge Holders and did include more academic-oriented sources including State of the Environment reports, dedicated climate change podcasts and research seminars.

- **Suggested ways for sharing information about climate change for and from the IPCC**

Recommendation 19: Improve sharing of information about climate change (including from IPCC reports) through:

- **Increased locally-based engagement with Aboriginal and Torres Strait Islander Peoples in local community, through dialogue and in culturally-appropriate ways.**
- **Increased engagement with young people through accessible formats that incorporate climate change science and Indigenous Knowledges.**

Respondents were asked for their thoughts on the “*best ways*” for sharing information about climate change. The total responses (N=67) differed in general themes of suggestions between Indigenous (n=44) and non-Indigenous respondents and those who did not state their indigeneity.

The Aboriginal and Torres Strait Islander respondents (n=44) emphasised the need for communication to be in person, in language, and with sufficient time and in a suitable social dynamic that enabled reflection, conservation and discussion. This diversity was described as:

“Communicate directly with Nations, online, in person... all of the above including conferences and getting the word out verbally, anything and everything” (Aboriginal respondent).

This was recommended as drawing on a yarning-style approach and potentially hosted by local organisations as community events. Such information-sharing was requested to have adequate resourcing, including funding. They also recommended that such gatherings enabled two-way engagement where local observations and Indigenous Knowledges were discussed in combination with published climate change science. One respondent described it thus:

“We used to come together as clan groups and families to discuss issues. Our cultural ways of gatherings and togetherness provided the space for families to come together, plan for important cultural rituals and events and to make decisions about clan related matters. People need to come together and talk about climate change, share and compare knowledge, and talk about solutions. Climate change needs a community effort and response” (Torres Strait Islander respondent).

The non-Indigenous respondents and those who did not state their indigeneity (n=22) recommended information sharing that focuses on a youthful audience and reaches this age group through settings (such as schools) and accessible formats (such as digital storytelling/ animation). This information was recommended to be evidence-based that draws on climate change science and incorporates Indigenous Knowledge and stories from Country.

An Indigenous respondent from Tasmania, identified the need to decolonise science and enhance sovereignty and self-determination rather than co-option, when dealing with climate change challenges:

"...continued colonisation of Indigenous Peoples through policy, research and practice that frames our knowledges as helpful to the colonisers, but does little to ease our burdens as people living on country. We become a flag-bearer for conservation that makes everyone else feel good, but still denies us self-determination over our country."

They further elaborated on the need for a fundamental shift in worldview as essential to deal effectively with climate change and share information from a perspective based on "love and care", rather than "extractivism":

"The language of crisis, disaster and emergency is an outfall of the neoliberal approach to benefitting from problems. We did not manage the country for over 40,000 years through anxiety - uncertainty, yes, but not anxiety. By having the funds to 'invest' in cleanups, technological responses and policy directions (both national and international institutions), capitalism is still the system of colonisation, where the root cause of injustice is ignored in favour of Western solutions that reiterate anxiety, rather than connection to Country. If we can care for Country from a place of love, rather than profit, then we get to see, hear and feel Country as a living entity, rather than a place of extraction. Climate change will continue to have negative outcomes while we see Country as extractive rather than a place of gratitude."

- **Proposed additional information from Aboriginal and Torres Strait Islander communities to include in IPCC reports**

Recommendation 20: Increase information in IPCC reports from Aboriginal and Torres Strait Islander communities that:

- **Considers wellbeing in a holistic way that is connected to Country**
- **Involves historical truth-telling**
- **Is Indigenous-led**
- **Values caring for Country.**

Survey respondents were asked to provide free text responses regarding additional information that could be included in IPCC reports about Aboriginal and Torres Strait Islander communities. Of the responses provided (N=27), Indigenous respondents provided over half (n=14).

These responses recommended information that considered a more holistic definition of climate impacts on wellbeing, described as:

"Relational indicators of Country and how these are impacting the real physical, emotional, and spiritual health of Aboriginal and Torres Strait Islander People" (Aboriginal respondent).

There was encouragement by respondents for historical truth-telling that sought to understand the causes of Aboriginal and Torres Strait Islander Peoples being more vulnerable to climate change impacts, described as:

"Not just isolating us as a marginalised and particularly vulnerable group to climate change, but exploring why we are marginalised and vulnerable - this has not happened in a vacuum. The harm colonisation and its ideologies has done to our people and Country has to be recognised in order to address the actual causes of this crisis" (Aboriginal respondent).

Additional recommendations from Indigenous respondents included supporting (including through adequate funding) Indigenous-led research, stated as:

“The under-representation of Indigenous-led climate change research and practice. Statistics on who gets the funding, and how much, and how Indigenous Peoples are excluded from research, would start to frame up what colonisation looks like for us” (Aboriginal respondent).

Caring for Country was also noted as central to wellbeing of Indigenous Peoples and for their environment, stated by one respondent as:

“Get back the people their land so they can look after it properly. It really is that simple” (Torres Strait Islander respondent).

The respondents who did not state their Indigeneity and who were non-Indigenous (n=13) recommended collating stories of lived experience in a changing climate, providing resources for climate change resilience-building and presenting IPCC information in a variety of ways in addition to a printed report for wider communication. They also supported increasing Indigenous-led climate research, adopting a holistic understanding of health, and documenting Caring for Country initiatives and wellbeing outcomes.

In and beyond the IPCC recommendations from the survey and yarning results

This section presents recommendations that emerged from the broader contextual questions asked in the survey. As described, these questions sought to gather a wider understanding of climate change- especially from Traditional Knowledge Holders with direct experience from Country, and from Indigenous scholars of climate change who may also have close connections to Country. This section privileges verbatim quotes to hear Indigenous Voices directly. Recommendations have also been drawn from the sections; however, it is recommended that the detail of the text- especially the verbatim quotes- are read to better understand and 'hear' the Voices.

- **Climate change impacts: Seasonal changes have you seen, felt, or think might be happening in your community or Country from climate change**

Recommendation 21: Support funding and training of Indigenous community leaders, knowledge holders and ranger groups to monitor climate change impacts on Country and people.

Findings from respondents indicate a high level of awareness and concern about climate change impacts. Responses varied depending on the Country that respondents lived in and/or had connections to through family and cultural background. These responses provide a context in which engagement with the IPCC processes and current and future reports, including potential First Peoples-written IPCC reports can be located in an extensive and deep body of experience, knowledge and aspirations. Major data about climate impacts across linked ecological, social, cultural and economic domains, issues of major concern, key messages for governments and other data from surveys and yarning circles are identified and discussed below.

Change of seasonal weather patterns

A Kamilaroi respondent identified seasonal changes on Country in northwest NSW are having a harmful impact on river health and traditional foods and medicines:

"I have seen the changing flow regimes of my rivers and water quality diminish at a great rate. Native fish populations are struggling to survive, changing temperatures of the water. Our traditional foods supplies are under threat and our native vegetation that provides our traditional medicines are becoming more and more scarce, if fact have completely gone. My Elders are saying that the seasons are changing and we know we had six seasons not four and this too has changed significantly."

A Melukerdee respondent highlighted impacts on biodiversity:

"I have seen changes in the patterns of seasons all around. Flowers bloom too early, crops are lost from summers that are too warm and too long, uncontrollable fires that are too hot ravage Country and leave animals homeless, the abundance of special cultural species reduces and diseases take out many key species of different ecological areas which have previously long stood resistant."

A Warumungu respondent from central Australian desert Country, described the impact of changed temperature and rainfall patterns on the health of Country and changing abundance, seasonality and availability of plants and animals:

"There are big changes on land. It's getting hotter, and seasons are not the same as they used to be. Animals come out in the wrong season. Animals that used to come out in summer are now coming out in winter now, some are not coming out in winter at all. Different flowers and fruits come out at the wrong time. Animals, like the goanna, are disappearing because summer time is too hot. Kangaroos are dying, not many turkeys are coming in the cold weather, eggs are all in the wrong season. We have more drought now and then there are no birds left. After the big rains this year some birds are coming back and life is coming back."

Altered rainfall patterns are becoming apparent:

"The rain and storms don't come when they used to. We don't get the cold weather rains any more. It's only a little light winter storm. The first cheeky storm doesn't come any more. It used to come in September and October, but we don't get it any more. We don't get the monsoon any more, but this year there was a big turnaround. It came back as a flood, the wrong way. It washed everything out..."

Discussing changing fire regimes he said:

“People can now burn off Country in any season. Fire just catches on the wrong season, at any time, not just in May June July when we used to burn. Too much moisture makes it hard to burn. It makes the country grow things in the wrong season. It makes the buffel grass take over.”

Changes to marine and terrestrial ecosystems

Changes identified include impacts on food security and changes to ecosystems due to seasonal changes to fruiting, flowering, abundance or health of plant and animal species.

A Dharawal/Bidjigal respondent, who works in land and marine ecosystem management on his Country in Sydney, identified how marine ecosystem changes are threatening food security as well as making it harder to continue traditional food harvesting practices:

“Increasing urchin abundance [is] contributing to overgrazing of kelps and reducing habitat for significant cultural species such as abalone and lobster. We have a couple of small estuarine islands that are very flat and at risk of being lost through erosion and sea level rise. As saltwater people, we live off food and resources that come from the ocean....We are seeing changes in the times certain species are migrating. For example, a lot of community members believe that the mullet are migrating earlier each year. I believe that NSW Fisheries data shows this not to be the case. Perhaps they are moving closer to the ocean earlier, but are not schooling up in large numbers early. This is something we are keen to look into.”

A Melukerdee respondent from Country in southern Tasmania identified her anguish arising from climate impacts on marine habitats:

“As a saltwater woman, the sea is a special place and is crucial to the survival of culture and people. The warming waters and the downwards invasion of northern species is driving out and killing species that make up our marine life. Our giant kelp forests, a key marine habitat in Lutruwita, is destroyed by this process. The destruction of these special places breaks my heart, but also causes me to worry greatly about how our people and our Country can survive.”

A Badulaig/Kalaw Lagaw Ya respondent from the Torres Strait Islands who works as a senior ranger noted impacts on turtle populations:

“Sustainability of marine life and large sea animals such as turtles and dugongs [is threatened] because of dieback in seagrass meadows and coral bleaching in the central and western parts of Torres Strait. Warmer ocean temperature is the primary cause of dieback.... Turtles are breeding out of season with not many mating turtles seen during the last mating season which is usually from September to October. The mating starts down the East coast and then the turtles float out through Badu. In the last three years turtle sightings have reduced. Now we catch about 2 to 3 a season, whereas before there were much more. There are also less male turtles because of hotter sands for laying eggs. Hotter sands means more female turtles hatch which is not good because there are not enough males for mating which is causing the reductions.”

A respondent from Maluiligal (Badu, Moa, Mabuiag) and Guda Maluilgal (top Western, Boigu) in the Torres Straits highlighted loss of seagrass habitat:

“...noticeable changes in health conditions of large marine herbivores (turtles and dugongs) in the last 2 years because of depleted or destroyed seagrass meadows. Notable signs of starvation.”

A senior Kala Kawaw Ya (KKY) cultural practitioner and educator from the Torres Strait noted impacts on traditional food growing and fishing:

“We are seeing seasonal changes with the rains extending beyond its usual pattern. The long wet affects our traditional food crops. For example, cassava needs long dry periods to mature. Too much water causes the tubers to rot. Because the ground is wet and soft for long periods, it’s easy for rats... can dig down and eat the tubers before we can harvest ... We are seeing more sharks and crocodiles closer to shore which makes it dangerous to fish from the shores. For example, I can’t go fishing off the rock for garfish anymore because the

sharks come along and chase the fish away. This has an impact on the households where fishing supplements our diet. We cannot wade out to deeper water to fish because of sharks and crocodiles."

A non-Indigenous researcher working with Aboriginal and Torres Strait Islander communities mainly on environmental challenges identified extreme distress to mountain forests in the Sydney Basin, noting that:

"In mid-summer, when other years they are deep green, it looked like autumn coloration in the Northern Hemisphere. Luckily we had no fires in the area. ...However, the insects ravaged a lot of the early regrowth at very high levels."

The Yorta Yorta Nation living in the Murray Darling Basin provided a comprehensive response to the survey noting the following concerns about changing seasonal weather patterns and extreme weather events:

"Soil moisture is affected by a changing climate, in particular our cracking clays are undergoing impact. It appears that the impacts of cracking clays extend to the Country of the First People of the Millewa Mallee."

"The characteristics of what makes up cracking clay ecosystems has not been widely discussed in Yorta Yorta Country, but we have been focusing on these issues since 2021. Yorta Yorta are concerned that rising temperatures and low rainfall will impact the cracking clays further. Erosion is a key contributing factor of soil loss. Water changes and impacts."

"To understand the impacts of the cracking clays both wet and dry periods must be compared to each other, and this is some core research that we will be looking at. Clays love water molecules. This is the turning point of change of Country. While it is an altered system, the altered system has undergone further change by a changing climate in which our Traditional Knowledge and knowledge methods are present."

"Within the Murray-Darling Basin the percentage of water extraction and percentage of climate change impacts are not known to the extent of observations."

"We say water extraction impacts soil moisture and the presence of water molecules whether that be atmospheric or present in some other form, have multiple impacts. Water extraction induces climate change. These are the anthropogenic processes executed within our Country without our consent and a thriving rate of industry demand for water downstream."

"While we discuss climate change we also come to the issue with many faces because the global impacts have changed, and we can never return to the way the climate used to be."

"Drought has not been defined as to its specific impact, we feel the term needs reviewing and greater discussion, especially in the Murray-Darling Basin system where extraction occurs and what does that mean for our Country in terms of what drought?"

"Species' response has changed."

Adverse impacts on social and emotional wellbeing

There was a significant number of respondents who highlighted heightened personal and community experiences of anxiety, loss of cultural connections, and fear of displacement.

A senior ranger from the Porumagal, Kulkalgal Nation in the Torres Strait highlighted the challenge climate change poses to planning land and marine management projects:

"The North Westerlies that bring the rains normally start around November-December. Now they are later. Starting in January-February. These changes make it hard for us to prepare for the changing seasons and it plays up with your mind, making us worry and anxious because we're no longer able to plan."

A Kulkalgaw Ya respondent from the Kulkalgal Nation in the Torres Strait Islands commented about the impact of seasonal changes on emotional wellbeing and capacity to teach Traditional Knowledges:

"The flora and fauna are confused. When the flora and fauna are confused, we are confused ... Stars (Tagai) are out of sync and not aligning to the seasonal calendar. Elders cannot teach and predict times and seasons

for planting and harvesting traditional foods. Because elders are no longer able to predict the environment, they are no longer able to teach Traditional Knowledge. This is having an emotional and psychological effect on people who are usually attuned to their lands and natural environment."

A senior land and sea management worker from Kala Lagaw Ya, Goemulgal, Mabuiag Island in the Torres Straits identified his fear that seasonal and environmental change is jeopardising traditional knowledge systems, and emotional and spiritual connections to Country:

"Creating stress and anxiety as people witness and anticipate future change. These changes are scaring me most because I can no longer fall back to knowledge taught to me about the times of the seasons. I was taught to connect to the winds, the seas and the stars and when they are not connecting our emotional and spiritual connections create stress and health problems. It's part of our survival."

Threats to culture and safety from severe weather events

Respondents from various coastal areas identified that increased frequency of severe weather events poses a significant threat to Indigenous communities' infrastructure, and Country. They can result in property damage, loss of livelihoods, displacement, and even loss of life. As Indigenous communities are often located in remote areas with limited access to resources and emergency services, the heightened risk of these events is exacerbated.

Shifts in the distribution of species impacts ecosystem services, including directly impacting Indigenous cultural practices with severe consequences for Indigenous people's ability to sustain cultural traditions, maintain food security, and preserve cultural heritage.

The impacts on housing and infrastructure from sea level rise and more frequent and severe storms, is causing direct damage to people's houses during inundation but also ongoing risks to life from large trees being damaged and uprooted. A senior Yawuru respondent in Broome in the Kimberley region of WA, with over 40 years of practical experience in Indigenous social, cultural and economic development, noted the inter-connected harmful impacts of dangerous weather events, loss of access to services, and lack of climate-safe infrastructure and housing:

"The catastrophic flooding in Jancial ary 2023 across much of the Kimberley region [along with]... increasing temperatures and prevalence of cyclones... is causing damage to infrastructure necessary for regional and remote communities to access basic services as well as the lack of infrastructure and appropriate housing for people to tolerate extreme temperatures."

Respondents engaged in Indigenous land management programs identified heightened risks to cultural heritage, with a manager of a Top End Northern Territory Indigenous land management corporation noting:

"We have seen damage to rock art and sacred sites due to larger flooding/water events than there has been in the past.... and [with]..less people living and accessing country as it becomes less habitable, a loss of cultural and spiritual knowledge occurs because of separation from country."

The linkages between ecosystem and human health

Several respondents identified linked and cascading impacts of loss of ecosystem health and human health.

A non-Indigenous manager of more than a dozen remote Indigenous ranger teams in a Top End Northern Territory Caring for Country program noted these connections from conversations with Indigenous rangers, in particular the ones in senior cultural roles, who often told him that changes in temperature patterns and weather conditions differ from the traditional cultural seasonal calendars and raise concerns on how this can impact cultural practices:

"[Concerns] mainly revolve around increases in the frequency and intensity of heatwaves during the summer months, changes in rainfall patterns and the timing of the wet and dry seasons and the cascading effects of these changes on species abundance and distribution patterns (e.g. bush tucker)."

A Melukerdee respondent from Tasmania identified the linkage between culture and ecosystem when noting:

"Cultural burning has taught me that fires should be cool and low: you have to burn in mosaic patterns, the fire should never be allowed to climb up the tree trunks, burning shouldn't be done in the warmer months and you should always give the animals a warning before burning. The fires seen in the last summers go completely

against that. Fire is evolving from being an important tool to grow and protect Country to an uncontrollable danger. The dramatic changes in weather where we now have really wet periods, where the bush can grow, to really hot and dry periods, where the bush dries out and burns too hot, makes me worried about how we are to protect ourselves and Country."

A Tebrakunna respondent from Tasmania also highlighted the linkage of health of Country with cultural identity, knowledge and threats to sustain connection to places, such as sacred trees or living shell middens.

"The loss of these places may have a negative impact on how we connect to Country as Indigenous Peoples ... The health of the more-than-human and non-human parts of Country. We do not have the capacity to frame questions relating to the spiritual health of the more-than-human, as Western sciences centre the human in their pursuit of knowledge. The more-than-human capacity of Country is what influences us as Indigenous Peoples to care for Country. We know that the ancestral beings guide our lives, yet they are unaccounted for within the science data."

- **Climate change impacts and vulnerability: Impacts of concern from Indigenous respondents**

Recommendation 22: Continue to research impacts of changes and impacts on ecosystem and human health (including social and emotional wellbeing and physical health) on Aboriginal and Torres Strait Islander communities in all ecosystem types.

Respondents identified a wide range of impacts they are most concerned about, ranging across cultural, economic, and ecological domains. These concerns range from recognition of the systemic and historic roots of the problem, summarised by a respondent of the Pairrebeene Trawlwoolway clans of Tebrakunna, northeast coastal Lutruwita (Tasmania) as:

"Climate change is caused by colonisation. It is the government's mismanagement of Aboriginal Country that is causing climate change."

Specific concerns are detailed below.

Food and water insecurity

Many respondents expressed concern about the impacts of climate change on food and water security for people who already suffer high levels of poverty and economic disadvantage, lack of critical services, and poor health. A Melukerdee respondent highlighted vulnerability to food insecurity risk:

"As Saltwater people, we live off food and resources that come from the ocean. Climate change is making it harder and harder to continue with these cultural practices.... The destruction of special [food producing] places breaks my heart, but also causes me to worry greatly about how our people and our Country can survive."

Senior Elders and Kulkaigal Elders and Traditional Knowledge keepers from Torres Strait Islands spoke strongly about their concerns about food and water security. A respondent from Kaurareg Country currently living on Ngurupai (Horn Island), identified that unpredictable weather patterns impact sea travel, and disrupt hunting and gathering practices:

"...which leads to food insecurity and more reliance on commercial foods that have health and economic costs" while a senior Mualgal woman from Mua Island spoke about the threat of rising temperatures and insecure water supply: "heat without water [means we]...cannot plant crops and have water for general living."

A senior Saibaigal respondent identified food insecurity from changed rainfall patterns:

"Prolonged wet weather is impacting traditional food crops, causing root rot and rodent damage."

A Badulaig respondent from the Torres Strait islanders of Badu identified the challenges of insecure rainwater supply, with:

"[There is] not enough heavy rain to refill ground water, waterholes and flush out creeks. Irregular rain also affects fire management and small burns which happen in April. The extended wet makes land management practices difficult."

Social and Emotional Wellbeing

A young respondent and environmental scientist of Tiwi/Iwaidja and Kaytej/Warlpiri descent highlighted the potential trauma that displacement from Country might have on Indigenous Peoples:

"In most cases, it is likely that Indigenous peoples will want to continue their connection to place, even if climate change makes this increasingly challenging. Whereas non-Indigenous persons may choose to move to a location where life is more enjoyable, Indigenous people will stick it out on their traditional estates."

A respondent from Tebrakunna Country in north-east Tasmania, identified distress arising from more severe climate impacts on cultural heritage:

"Climate change impacts to highly significant, vulnerable, and irreplaceable Aboriginal cultural heritage sites through increased sea-level/wave impacts, and drier environments which impacts native vegetation growth holding together fragile heritage sites from prevailing the strong westerly winds e.g., hut depression sites on Tasmania's west coast."

A senior Warumungu cultural leader fears about his people's capacity to safely continue cultural practices if temperatures continue to rise:

"Our culture goes with our Country. It affects our ceremonies, we can't sit out in hot Country for ceremonies. It's dangerous and makes us sick, even for young people having them out in the hot bush."

A Saibaigal respondent from the Torres Strait Islands identified the emotional distress arising from loss of ability to care for family graves as climate change impacts increase:

"Rising sea level and loss of cultural sites and family graves. The graves of my younger brothers who died as infants on Saibai have since been taken by the sea."

A Goemulgal respondent from Mabuiag Island in the Torres Strait described stress and anxiety as people witness and anticipate future change:

"These changes are scaring me most because I can no longer fall back to knowledge taught to me about the times of the seasons. I was taught to connect to the winds, the seas and the stars and when they are not connecting our emotional and spiritual connections create stress and health problems. It's part of our survival. Secondly, we can no longer depend on our traditional cultural knowledge to survive and fit into our kinship structure. A man's place and responsibility is to provide. If he is unable to provide (hunt & fish) his integrity as a man is in question. Thirdly, looking after Country is our responsibility, but the impact of climate change is beyond our power and control."

A Maluilgal and Guda Maluilgal respondent shared concerns about the destruction of the oldest living cultures in the world:

"Climate change impacts all of us. Indigenous culture in Australia is one of the oldest ones. It would be a shame if climate change alters and destroys sacred sites and the culture of the oldest living cultures in the world."

Another Torres Strait Island respondent from Iama (Yam Island) identified climate change as posing both a challenge and an opportunity for empowerment:

"The mental health and overall health and wellbeing impacts on families is becoming obvious. We cannot stop this change but as a region and a people we need to be empowered to feel that we can protect ourselves, our cultural rights and create healthy, sustainable communities."

Ecological impacts

People expressed concern about ecological impacts on marine, terrestrial and aquatic environments.

The Maluilgal and Guda Maluilgal respondent and former Torres Strait land and sea manager highlighted a global ecological dimension when he responded with the comment that:

“Coral contributes to our ecology and is critical to supporting oceanic plankton. Plankton are an important part of a healthy marine ecosystem. 50 to 80 percent of oxygen comes from the ocean.”

With respect to ecological impacts a Melukerdee respondent highlighted the critical role of fires and fire management in sustaining ecosystem health:

“Cultural burning has taught me that fires should be cool and low: you have to burn in mosaic patterns, the fire should never be allowed to climb up the tree trunks, burning shouldn't be done in the warmer months and you should always give the animals a warning before burning. The fires seen in the last summers go completely against that. Fire is evolving from being an important tool to grow and protect Country to an uncontrollable danger. The dramatic changes in weather where we now have really wet periods, where the bush can grow, to really hot and dry periods, where the bush dries out and burns too hot, makes me worried for how we are to protect ourselves and Country.”

She commented on the risk of new diseases and pests to the health of forests:

“I notice that our foundational giants are more prone to diseases and whole areas of bush can collapse from an invasion of tiny bugs. I worry about how these changes are weakening our Country at a time when it needs to protect itself more than ever.”

A Tebrakunna researcher from north-east Tasmania identified new threats from marine pest species, such as the long-spined sea urchin (*Centrostephanus rodgersii*) moving along warm currents to Tasmanian coastal waters.

Physical health

With a higher-than-average number of people suffering poor health, some respondents identified climate change as a threat multiplier in the health field. A senior Mualgal respondent from the Torres Strait highlighted the particular vulnerability of people to heat stress, identifying both the elderly but also young people.

A senior Warumungu Elder of the local community-controlled health service identified concerns about the impact of heat on people's health and living conditions, particularly exacerbated by poor quality and overcrowded housing and high energy costs. He highlighted the need for investment in climate-safe and energy-efficient house:

“It's too hot for people to go outside. It's hard for sick people, like people on renal.... When is the government going to look after our people? You can't live inside when housing conditions are too hot and not safe, and not really built for this climate and conditions. They need to take note of how we want houses with breezeways and solar so we can afford electricity.”

This concern about the danger posed by inappropriate housing was reinforced by other Aboriginal and Torres Strait Islander respondents:

“Poor housing design not suitable for increasing temperatures. Elders and people with health issues are currently being affected by high temperatures during the summer months.”

Housing and Living Spaces

Lack of climate safe housing is a widely-discussed problem with a respondent from Iama noting the inequity of the situation between permanent local residents and 'imported' workers:

“Imported government workers don't have to pay for air conditioning while our elders and invalids suffer the heat.”

Other respondents identified the need to deal with high electricity costs, energy poverty, and the need to modify existing housing to become energy efficient and solar-powered:

“put solar on every roof for power to help make houses cooler and warmer, and make electricity affordable and to help sick people especially.”

The cost of transitioning houses and living areas to be climate-safe was identified by respondents, with a Badjalaig respondent identifying the need for better housing designs with more outdoor space:

“Our houses are Westernised and enclosed within 4 walls with not much verandah and outdoor living spaces. We need to be able to adjust to our environment and take advantage of our seasons and winds to manage the rising temperatures.”

A Yawuru respondent spoke about the inter-connections between climate and the built environment, highlighting the recent floods in the Kimberley region of WA:

“Unseasonal and extreme flooding events impacting on people and the natural resources, increasing prevalence and severity of cyclones, and the impact of droughts on natural resources and the built environment.”

Safety, security and displacement

Loss of connection to Country and potentially being forced to relocate is an emergent threat. A respondent shared their concern about government support if people have to relocate due to sea level rise, shortage of water in remote and rural areas, and other threats that might make places unliveable:

“First Nations people [may] have to relocate because of this [climate change]. What support will they receive under climate change? Will this issue be considered a crisis (which it is)? What support or help will they receive from the Government? Will they be classed as refugees because of climate change? If they are considered refugees, they may be entitled emergency benefits. Otherwise, if they are not considered, they will be just left.”

A Kulkalgal respondent identified concerns about “becoming climate refugees in our own country”:

“.....fear of the next generations’ loss of connection to land and culture if forced to live away from Country and [consequent] loss of cultural practices, knowledge and traditions.”

A Malulgal/Kaiwalagal respondent from the Torres Strait identified that climate change fundamentally endangers lifestyle and effective social practices that maintain identity and community:

“[It] threatens our kinship system, the sharing of seafood and resources is part of our reciprocal exchanges. Sharing strengthens bonds, reduces conflict, builds relationships and keeps communities and families strong.”

A respondent from Thursday Island worries about her and her children’s future in a changed environment:

“... higher temperatures and not able to afford cooling systems, rising sea water and the destruction of communities leading to loss of place and Country.”

A senior Meriam leader from the Torres Strait Island of Mer (Murray Island) highlighted the need for urgent government commitment and funding to support adaptation options:

“Governments must realise that [climate change] is affecting people's lives now and that people need to be relocated to high grounds which needs urgent government commitment and funding to support adaptation to climate change impacts.”

A senior Badjalaig/Goemulgal leader is concerned about the lack of government response to issues in the Torres Strait:

“...The inequity of services and responsiveness we see between us in the region and those on the mainland is apparent. This discrepancy contributes to a sense of helplessness because we can’t change things on our own.”

Another respondent from the Torres Strait highlighted the risk depopulation might have on ecological health:

“Increases in exotic pests and diseases can create future problems. Torres Strait is strategic to Australia’s biosecurity. Depopulation of island communities will create issues with monitoring and eradicating exotic pests and diseases. Sustainable communities have an economic value to Australia.”

Infrastructure maintenance and economic wellbeing

Sea level rise, coupled with more severe cyclone and rough weather causing further damage to islands, and erosion of liveable land, with consequent impacts on infrastructure and hampering efforts to protect community are of concern:

“Construction of outdated and non-EAP standard infrastructures that exacerbate erosion by affecting the natural flow of how sand shifts on coral cay islands..... Unsustainable infrastructure. Need to build in a way that the infrastructure could be moved as sea levels rise.”

A Torres Strait Islander also noted cascading and linked impacts:

“Sand movement affecting fishing areas, depositing of reefs pushing people into further poverty because they cannot supplement their diet or make money from crayfishing.”

Another Torres Strait Islander noted:

“Higher king tides. Tides are coming over a seawall near my home.”

Linked human, and ecological health and wellbeing

In an Indigenous worldview, Country and people are inseparable. Less people are living and accessing Country as it becomes less habitable and the loss of cultural and spiritual knowledge that occurs because of that separation from Country.

A Tebrakunna respondent from Tasmania identified the connections between human and ecological health and the legacy of colonialism:

“If we are Indigenous Peoples through our knowledge and connection to places, such as sacred trees or living shell middens, then the loss of these places may have a negative impact on how we connect to Country as Indigenous Peoples....The more-than-human capacity of Country is what influences us as Indigenous Peoples to care for Country.”

A Masigal respondent from the Torres Strait posed the ecological/ cultural / economic linkage as follows:

“I asked an elder if he could predict the next day's weather by reading the sky. He looked at me and said “it's very hard nowadays because the sky can no longer tell us what's going to happen”. So basically, we live day by day. We can't plan to prepare our fishing trips and journeys between islands based on our traditional ways of knowing and reading our environment.”

A Warrabergal man from Torres Strait, identified the integral connections between people, Country, wellbeing and economy:

“Future inheritance of our children and their ability to live on the island....Economic impact for fishermen due to lack of real jobs on island. Cray fishing is the other economy that subsidises living expenses. Higher cost of living affects livelihoods.”

A non-Indigenous researcher identified the stress caused by uncertainty climate change impacts pose to interlinked ecological, social, economic domains:

“Probable increases in food prices, probable need for more energy expenses in heating and cooling, loss of land and infrastructure along coastlines, and challenges in insuring properties as natural disasters worsen. I do not see the impacts as separable into three distinct categories.”

This environmental research referred to the increased frequency of severe weather events multiplying significant threats to Indigenous communities, infrastructure, and Country:

“...they can result in property damage, displacement, loss of livelihoods, and even loss of life. As Indigenous communities are often located in remote areas with limited access to resources and emergency services, the heightened risk of these events is particularly alarming. Climate change is also causing shifts in the distribution of species and will impact ecosystem services. These losses directly impact Indigenous cultural practices and

can have severe consequences for Indigenous people's ability to sustain cultural traditions, maintain food security, and preserve cultural heritage."

A collective response from the Yorta Yorta Nation identified the following issues of major concern:

"Higher temperatures leading to potential heat waves in Yorta Yorta Country. Higher temperatures leading to potential heat related illnesses with Yorta Yorta People and all. Travel movement for our people can potentially be changed due to higher temperatures, non-access to culturally significant areas, extreme weather events. Patterns of change – extreme weather events, flooding (however not defined in the context versus what would be considered a natural wetting to a man-made purpose flood).

Extinction of traditional species leading to the impacts of Traditional Knowledge methods and systems, impacting Yorta Yorta people further. If carbon dioxide in the atmosphere has risen to exponential levels then the impacts could be devastating to all biocultural diversity and biodiversity."

- **Climate change mitigation and adaptation: Indigenous guidance to reduce the impacts of climate change**

Recommendation 23: Seek and support Indigenous guidance to reduce the impacts of climate change

Actions that respondents identified they want to see happen are a mix of systemic changes, such as reduction of the adverse impacts of capitalism through increasing the accountability of the corporations, governments, industry, international agencies, and individuals for their climate impacts, changes in government policies and regulations, and behaviour change through firmer laws and penalties, taxes, price mechanisms and incentives to shift market forces, a managed and rapid transition of the energy systems from fossil fuels to carbon-free renewable energy systems, along with investment and support services in vulnerable communities.

Respondents also identified that economic incentives, education, and financial support is needed for individuals, families, communities and local agencies to take action at local, community and household level that help people live safely on Country with initiatives including ecosystem restoration, better housing and living areas with shade trees and energy and water security.

The common thread that emerged from responses was the importance of Indigenous community engagement and integration of Aboriginal and Torres Strait Islander Peoples' knowledge, experiences and aspirations in developing and implementing mitigation and adaptation solutions.

A Tiwi respondent summarised this as the need to: *"Apply more Indigenous Knowledges in contemporary land and sea management approaches."*

Support Indigenous Knowledge, networks, education & training

Responding to the impacts of climate change, in both mitigation and adaptation within and affecting First People's communities' entails building adaptive capacity grounded in knowledge, networks, education and training.

A Tebrakunna respondent identified the need for *"Anti-colonisation approaches to research that legitimises Indigenous Peoples' Knowledges with equivalency to other knowledge bases."* She expressed concern that:

"... The continued colonisation of Indigenous Peoples through policy, research and practice that frames our Knowledges is helpful to the colonisers, but does little to ease our burdens as people living on Country. We become a flag-bearer for conservation that makes everyone else feel good, but still denies us self-determination over our country.... Self-determination for Indigenous peoples about a healthy Country that would empower communities [comes] through respecting and applying and developing Indigenous Knowledge, research and researchers, in contemporary land and sea management approaches."

A Kamilaroi respondent also highlighted the importance of 'Indigenous Knowledge':

"Using our Cultural Science that has sustained us since time immemorial on the driest inhabited continent on this planet.... We know our country and the impacts of climate change and we need to be trusted and engaged

to lead this very research that can assist our communities to be more sustainable and resilient moving into the future.”

Also asserting that government, industry and other stakeholders:

“...should be asked to demonstrate how they are affording Indigenous lead collaborations and working with and for Indigenous people and communities, not the other way around, it must all be Indigenous lead.”

A senior Kulkalgal respondent from Island Ngurupai (Horn Island) in the Torres Strait, identified the need for stronger communication between communities so First Nations People are aware of what is happening or is being experienced in other places, physically, socially and culturally. He emphasised the need to:

“...rebuild stronger communities and reclaim our customary ways of gathering and sharing information.”

He also highlighted that governments need to include a whole-of-community approach:

“...inclusive of all members and age groups at grassroots level to contribute to solutions that we need to be coming up with now if we are to adapt successfully to climate change.”

Respondents identified that multiple organisations have roles to play to support Indigenous communities deal with climate change. A senior respondent from Kirriri (Hammond Island) in the Torres Strait identified some critical tasks as:

“Mining companies: decrease extraction of fossil fuel sources in Australia e.g., coal and coal seam gas.

Schools: include climate change education as part of early intervention framework for adaptation.

Community: revive cultural practices and cultural practitioners to teach and maintain food gathering, planting (harvesting), hunting and fishing practices such as building and repairing stone fish traps.

Government agencies: share knowledge with the community through forums and other mediums suggested earlier. E.g. TSRA Ranger Ecological Knowledge Database.

Community organisations: engage with the grassroots by talking to families, raise awareness and better prepare families for a changing environment and the political, social and economic challenges that will arise as a result of climate change. e.g. increase rates of domestic and family violence.”

A Yawuru respondent from the Kimberley region of WA emphasised that:

“Raising the awareness of the community must be adequately resourced through appropriate Indigenous led agencies and networks with other peak bodies leading in this area necessary to assist transfer of information and consistency and accuracy in messaging.”

Furthermore:

“...It must be linked to expertise, such as peak First Nations groups leading in the area of climate change and renewable energies, as well as research institutes that can support evidence-based information.”

He proposes that:

“Land Councils, Native Title Representative Bodies and Prescribed Body Corporates are in the best position to support their constituents. However, they need appropriate resourcing to support climate action responses through policy and planning with local communities. This includes keeping up with the fast pace of changing policy and legislation and having access to research and data.”

He also highlighted the need for adequate and appropriate resourcing:

“Adequate resourcing of First Nations’ own specialist institutions with relevant expertise to raise awareness of community through engaging in dialogue on climate action, to undertake participatory planning to support climate adaptation responses, and to work with industry, government and research institutions to support local climate action plans and policy.”

A Badugal Goemulgal land manager from the Torres Strait highlighted the need to inform and engage young people, saying:

"We need to sign up with a shared vision so that we can work towards ways to adapt appropriately to climate change. Our children need to be educated about the significance of our lands and seas to become the next generation of traditional custodians, conservationists and climate change scientists."

A senior manager of an Indigenous land management corporation in the Northern Territory identified the need to integrate climate change education into school curricula and community programs to build a solid foundation of knowledge:

"These need to be delivered in-situ and preferably through a mix of successful education models (e.g. two way learning models such as Learning on Country combined with social media campaigns)."

He identified the need for community sharing of information in safe community spaces:

"Hosting community workshops, seminars, and public events focused on climate change can create spaces for dialogue, knowledge sharing, and capacity building and ideally this should be done in partnership with programs on the ground like the Indigenous ranger program. These gatherings provide opportunities for community members to learn from experts, share experiences, and discuss local climate change impacts and adaptation strategies."

He also identified that engaging and educating young people and community members about the science, impacts, and solutions related to climate change can empower them to become informed and engaged citizens:

"The involvement of scientists with senior Indigenous Knowledge holders in this is critical. Most importantly, any information sharing about climate change in the Indigenous context needs to be focused and targeted. If a siloed approach is applied this will only lead to confusing messaging. Collaborating with organisations, NGOs, federal/state/Territory government agencies, and community groups working on climate change issues can amplify the impact of information sharing efforts. By pooling resources, expertise, and networks, partnerships and alliances can reach larger audiences with a more impactful message about climate change."

Indigenous engagement, leadership and voice

A Badugal Goemulgal land manager from the Torres Strait identified the critical need for governments to seriously engage, and to sit with the people and:

"...not just fly in as part of a media stunt or when campaigning.... Governments need to deliver on their commitment not just make promises, leave then we don't hear from them. We need to be taken seriously."

Respondents identified the need for community-led planning processes that engage the community to identify key concerns and facilitate planning around priorities and solutions. This needs to recognize the diversity and variability of communities with respect to their unique situations, variables and values.

Community-led processes will provide a voice for Indigenous people's research, advocacy and decision-making, including putting Indigenous Peoples into positions of leadership. This is succinctly described by a Maluilgal / Guda Maluilgal respondent as:

"Get into the government's ear, to have a voice in dialogues in climate change policies that affect our region."

The concept of an Indigenous Peoples' voice extends across generations, strongly advocated by Kirriri (Hammond Island) respondent who says agencies should:

"Fund camps for youth and young people to be trained as citizen scientists to identify and document environmental change and to explore and advocate for locally identified solutions."

A Kulkalgal respondent from the Torres Strait Islands highlighted that genuine consultations and voice requires resources and a serious commitment to inclusiveness:

"We want real conversations where everyone is informed and contributes equally, not just a select few."

Another respondent of the Kala Lagau Ya group on Mabuiag Island in the Torres Strait, identified that there needs to be a serious commitment to local solutions and local jobs:

“Look at examples of local solutions, e.g., land reclamation on household level. Create more jobs for Indigenous people in this climate change space.”

A Kulkalgal community organisation manager, from Iama in the Torres Strait Islands, described the need to ensure people and communities are able to adapt before things get worse, not after the effect:

“...Some of these projects can test different adaptation strategies and solutions for land and sea management, improve water catchments and storage systems, invest in wind and solar power, promote and grow traditional food gardens, fund revegetation projects and support local businesses and economies.”

A Yawuru respondent emphasised the necessity of national and global networks for shared learning and collective action:

“Collective action, linking national groups, such as the First Nations Clean Energy Network that are already engaged in this space, with international initiatives such as the First Nations Climate Initiative are needed to support climate action plans and Indigenous-led solutions and provide a portal for local communities to access information to adapt to their unique situation. These types of institutions are imperative to supporting local organizations and communities with appropriate tools, policy and information.”

Some respondents, including from leaders in the Torres Strait islands, identify the need to prepare adaptation planning and capacity in a timely way, for example potentially including:

“...planned relocation to higher grounds in preparation for rising sea levels. This planning needs to continue and be supported by governments.... This can reduce conflict over lands when planning for relocation.”

The focus on supporting young people to take leadership was highlighted through responses, reflected in the response from a Kulkalgal cultural leader from the Torres Strait who highlighted the need to:

“Support younger generations to become trained in the sciences and technologies to reduce the impacts of climate change and develop systems for successful adaptation in place. Young people need to feel empowered and hopeful.”

Effective and targeted policy and action to drive a climate-safe future

Respondents identified the need for support to vulnerable communities to be resilient and build their capacity to adapt to climate change. This may include national, state and local support to remain safely in their traditional Country and/or move safely to other places if they need to for their safety. It also involves providing ongoing and improved access to education, housing, health, employment and social services.

Respondents identified the need for policies and actions of governments, communities and businesses and industry to be aligned with the goals of mitigating and adapting to climate change, and “conductive to bring about right behaviours” and to “promote economic and community incentives where people feel empowered to solve the problem-by community, for community and not relying on government agencies.”

Respondents stated that:

“All government agencies should have their own dedicated climate change team charged with promoting action within their agency and setting the targets and strategies for emission reduction for their teams. These teams need real power in the organisation at the highest levels to ensure these commitments are embedded into policy... All government decisions, particularly those regarding procurement should have some kind of emissions reduction requirement/component that should be addressed and given very significant weighting as part of the decision making process.”

People want to see a real commitment by governments to drive transition, emphasised by Tebrakunna researcher who called for a serious commitment to climate-safe policy and action by governments:

“...change in government policy to reflect a real commitment on improving climate change e.g. we know that burning coal is a major contributor to greenhouse gas emissions and accelerates climate change. Why is coal still one of Australia's highest export industries? The mining and export industry in coal needs to immediately cease.”

A Dharawal/Bidjigal Indigenous ranger from the Sydney area identified that protection and improvement of Country and habitats is critical to mitigation, saying:

“...increased carbon sequestering habitats (seagrass, crayweed etc.). This will both increase the amount of carbon stored, but will contribute to increased biodiversity which is shown to reduce climate change effects.”

Further highlighting the need for increased involvement of Traditional Owner groups in restoration projects, and for ongoing funding and support for restoration processes:

“Traditional Owner groups are not going anywhere, and have the most to lose to climate change impacts, as well as having generations of knowledge on how the ecosystem of a particular area has been working and what has changed. They have the most interest in combating climate change.”

Information, regulation, accountability and targets

Respondents identified the need for more transparency and sharing of information about the state of climate-linked vulnerabilities and threats, and about mitigation and adaptation processes and actions of governments, corporations, research organisations and other stakeholders. This includes ensuring messages come down to people on the ground so that they know how they can protect their interests and contribute to changes. Respondents identified that currently there is a gap in communication, and critical messages either get lost or miscommunicated.

A Kulkalgal respondent from Iama (Yam Island) identified that:

“Too many government agencies in the region working in silos...[and the need for] community solutions to be respected with community organisations being resourced appropriately to take action.”

Increasing the accountability of corporations, governments, industry, international agencies, research bodies and individuals was identified as critical for protecting communities and driving transition to a climate-safe future.

A Melukerdee respondent highlighted the need for a fundamental shift in values, respect and resources:

“...a movement for people to connect with the environment around them, to try and inspire that feeling of custodianship and correcting the egocentric view. To do this more widely, we need equal respect for First Nations knowledge and way of being, and put First Nations peoples into positions of leadership.” She also stated that there needs to be *“channelling of government funding and subsidies away from projects involved in fracking, mining, and other environmentally destructive and polluting regimes and into localised initiatives to protect and care for the Country.”*

A Badjagal cultural custodian and Traditional Knowledge keeper from the Torres Strait identified the need to inform people about the impact of climate change:

“so that people can be updated and contribute to solutions and can better prepare to adapt.”

A Gamilaraay respondent from northern NSW identified that governments need to “walk the talk” to:

“Achieve emissions target commitments - 50% reduction by 2030 and zero by 2050, with significant investment in renewables... All individual government agencies should have their own dedicated climate change team charged with promoting action within their agency and setting the targets and strategies for emission reduction for their teams. These teams need real power in the organisation at the highest levels to ensure these commitments are embedded into policy.”

A Kirriri respondent from the Torres Strait Islands focused on the need to consider how information is shared for maximum impact, with:

“...open dialogue and discussion at community level. Visual aids to present future predictions and scenarios most effective, including demonstrations/documentaries on adaptation methods used by other affected areas globally.”

Redirect investment into adaptation and mitigation actions

Respondents identified the need for *“Australia as a wealthy country needs to lead by example”*, shifting investment from problems to solutions, with proposed actions including: *“Australia needs to stop digging up coal to send overseas. Stop deforestation and agribusiness”* to the need for *“better environmental and health services for people living in remote communities”* and support for local initiatives such as climate-safe infrastructure including roads, buildings and *“durable seawalls, land reclamation and coastal revegetation, and renewable energy.”*

A Kulkalgal respondent from Poruma Island in the Torres Strait identified that:

“A weak economic base makes it harder to adapt to climate change and that a strong economic base needs investment, including growing foods locally to reduce the high cost of living.”

Other respondents suggested sites for investment including investment in renewables, the Indigenous ranger program, quality carbon projects in the savannah fire space, and other *“Indigenous nature-based solutions that provide a portal for local communities to access information to adapt to their unique situation. These types of institutions are imperative to supporting local organizations and communities with appropriate tools, policy and information.”*

Initiatives suggested include those from a Warumungu community leader:

“Put solar on every roof for power to help make houses cooler and warmer, and make electricity affordable and to help sick people especially. Help people be comfortable on Country with better housing, shade trees and water security and safe hygiene. People need access to communications, like WiFi so they can get email, internet and stay informed, and training for jobs and technologies for modern life.”

The Yorta Yorta Nation response identified that actions needed now to reduce the impacts of climate change include:

“Greater understanding so that there can be a coordinated effort to reduce the levels and in return reduce the impacts. Appropriate resources to combat the impacts through working on Country. Future planning.”

- **Actions by organisations and individuals to protect Country and community from climate change**

Recommendation 24: Invest in adaptation strategies and actions on all Indigenous communities impacted by climate change to protect physical health, emotional and social wellbeing, safety, employment, income and opportunities on traditional Country, and in any community to which people may be forced to relocate.

The call to governments were detailed by two Aboriginal respondents, neither of whom had heard of the IPCC reports but clearly described climate impacts and action required:

“We know our country and the impacts of climate change, and we need to be trusted and engaged to lead this very research that can assist our communities to be more sustainable and resilient moving into the future.”

“Don't just hear what we have to say, listen to what we are telling you!”

A Melukerdee respondent added:

“Your way is not the best way. The climate crisis proves that. Listen to us. Respect us. Learn from us.”

Respondents identified that tackling climate change offers new social and economic development opportunities. A young Badulaig respondent from the Torres Strait identified this opportunity, saying:

“We are already highly disadvantaged. Poverty will force us to exploit our natural resources in a way that is unsustainable, causing further poverty where we will not have the resilience and capacity to adapt. For example, higher gas prices are forcing people to cut more firewood. Our stoves are mostly fuelled by gas. Electric stoves are also not a viable option because of the cost of diesel generated power costs ... There needs

to be some accountability for the money that is being thrown around on climate change-related issues. We need to see real benefits on the ground."

A Masigal / Kulkalgal businessperson from the Torres Strait added that supporting change requires government investment into local organisations and initiatives:

"Governments should allocate capital to drive community agency. This could mean capital allocation into local agencies and NGOs."

He proposes that a shift in attitude and values is called for: *"Care for Country from a place of love, rather than profit":*

"... then we get to see, hear and feel the country as a living entity, rather than a place of extraction. Climate change will continue to have negative outcomes while we see Country as extractive rather than a place of gratitude."

People are calling for opportunities to engage and be heard. A Badugal Goemulgal respondent called for a process that will lead to better outcomes, saying:

"Don't just choose any persons in the community or rely on elected leaders to engage on climate change issues but open up space for Traditional Knowledge holders and elders at grassroots to contribute. Far too long we have had certain elites and government workers speak for us."

A Iama (Yam Island) respondent identified the challenge:

"Throwing money at us without a coherent, collaborative and unified approach to addressing climate change is a waste of time and money. We need to galvanise and mobilise as a people, and as a region before any kind of shift can take place."

The Yorta Yorta Nation response identified that governments need to understand what change is occurring in the Country, and respect governance processes already in place in community:

"Most of the time governments come with an agenda and that agenda dictates a controlled extraction of data from TO's and ultimately leads to not respecting the governance processes that we have in place. They dictate time and they dictate the purpose and that misses the point of climate change to knowledge and people because they are only looking for what they want not what we want....Most western scientists try and link the two knowledge systems together, sometimes there may not be a linkage and if there is not a linkage, they dismiss that as something else....The other issue is that when we do communicate a knowledge element or process with them, they are not sure what to do with it, even if we tell them how it works, they dismiss our knowledge and therefore they do not know what data they have and how to understand it, even though we do."

The Yorta Yorta Nation collective response identified the following essential processes to deliver good outcomes:

"People need to take the matter seriously and hear the voice of the Yorta Yorta People talking about their Country. That is at a National level, a State level and a local level."

Nation voices need to elevate in a way that recognises and respects their calls for action against a changing climate and climate change."

At all levels investment needs to occur and do better, it's almost like you have to sell protecting your Country as a product because otherwise investment does not link."

The Yorta Yorta Nation worked with other Traditional Owners to produce a First Nations Peoples' Statement on Climate Change in 2021. This Statement is reproduced in **Figure 1**.

2021 First Nation Peoples Statement on Climate Change

We, the participants attending the Gathering, acknowledge the voices of the Gimuy Walubarra Yidinji and Yirraganydji, whose lands we meet upon in 2021. Building on the 2018 statement from First Peoples of Yorta Yorta land, we as First Nation Peoples of Australia recognise that overwhelmingly scientific and traditional knowledge is demanding immediate action against the threats of climate change.

When Country is healthy, we are healthy. Our knowledge systems are interconnected with our environment and it relies on the health of Country. This knowledge is held by our Elders and passed on to the next generation. Solutions to climate change can be found in the landscapes and within our knowledge systems. Aboriginal and Torres Strait Islander peoples have the tools, knowledge, and practices to effectively contribute to the fight against climate change. We have lived sustainably in Australia for over 100,000 years.

First Nations people of Australia contribute the least to climate change, yet the impacts of climate change are affecting us most severely. We at the Gathering are calling for the following:

- A commitment from Federal Government to financially support an annual First Nations-led dialogue on climate change.
 - The annual dialogue should be a place where Aboriginal and Torres Strait Islanders can discuss the changing climate in their communities and is a valuable input to inform policy at all levels.
 - A commitment for federal-level funding for an Indigenous-led climate action hub, which would fund both Indigenous-led mitigation and adaptation climate change projects. These projects could focus on:
 - Domestic emissions reductions through enabling reliable renewable energy supply to off grid communities, Indigenous-led nature-based solutions.
 - Indigenous-led adaptation planning for communities and the recording and transmission of knowledges and experiences across the country.
 - The establishment of a Torres Strait Island taskforce, led by First Nations peoples of the region, to drive critical and tangible climate change solutions for island communities under present and immediate threat.
- We call on all Australians to join us in acting on climate change and in protecting the environment. To work collaboratively with us, learn our laws and our ways and respect our knowledges to find solutions together to combat climate change.
 - Climate action that links all levels of government so our people and communities can work collaboratively in an Indigenous-led fight against climate change.
 - The right to manage Country. First Nations peoples must be involved in the national dialogue about climate change and be engaged on any decision that impacts us and our Country. We call for these rights to be respected and observed on an international, national, state and local level. Our knowledge must be included in climate management frameworks.
 - To look beyond ourselves, to include flora and fauna in climate planning and climate management frameworks so the plants and animals that support us can be represented.

We are seeing changes in the environment and the declining health of Country and people. We can see our native flora and fauna are suffering and the conditions of our lands, waters, seas and skies declining. For some of our people it is an emergency because the climate crisis has already caused widespread damage. Our connection to Country represents climate science developed over countless generations, listen to us, work with us and together we can enact a change that will shape our future for all Australians.

Figure 1: 2021 First Nation Peoples Statement on Climate Change (NESP, 2021)

Indigenous-led team reflection results

This section of results was sourced from data that emerged from iterative discussions among the research team members, led by the Indigenous members and interrogating both the emerging findings in combination with reflections on the data gathering processes and expectations held by many Indigenous respondents regarding the use and impact of their data.

Intentionally include Aboriginal and Torres Strait Islander Peoples' cultural Knowledges and perspectives on climate change impacts and responses in IPCC reports

Recommendation 25: Commit to specific approaches that will ensure inclusion of Aboriginal and Torres Strait Islander Knowledges and perspectives in IPCC reports, including through:

- **Aboriginal and Torres Strait Islander-led climate change research**
- **The Australian Government commit to requesting and strongly supporting the IPCC to include both dedicated chapter/s on Indigenous Peoples as well as incorporating Indigenous Knowledges and considerations throughout all reports**
- **Respectful inclusion of Indigenous scientific data alongside Western scientific data**

Aboriginal and Torres Strait Islander Peoples have significant knowledge and data to contribute to the observation of climate change impacts and appropriate responses to these impacts. This should be seen and valued by the Australian Government. As one of our Indigenous team members stated:

“Indigenous people’s existence is threatened, yet they are still invisible in the space to tackle climate change, their needs will not be thought of, let alone addressed in a crisis situation. The importance of their knowledge which is so close to the land and sea is not only about addressing climate change, but solutions. We must remember them to know firsthand the challenges faced by the many different groups.”

In response, several clear actions and pathways for strengthening the inclusion of Aboriginal and Torres Strait Islander Peoples' cultural Knowledges and perspectives on climate change impacts and responses in IPCC reports were identified through the data gathering and reflections. These include:

- Aboriginal and Torres Strait Islander Peoples-led climate change research needs to be published to be cited in IPCC reports. Publication of relevant research is also one of the criteria for selection as an IPCC author (Leonard et al., 2023).
- The Australian Government could encourage a dedicated chapter in AR7 WGII focused on *Indigenous Peoples and Climate Change*. This could include information on the impacts of climate change as relevant to Indigenous Peoples, Indigenous Knowledges on adaptations, and mitigation and ways forward in a changing climate. However, a chapter dedicated to Indigenous Knowledges and perspectives should not preclude inclusion of these Knowledges and perspectives as appropriate throughout the entire report. Furthermore, chapters or sections written within the IPCC report should be co-authored primarily by Indigenous Lead Authors.
- All three IPCC Working Groups could be encouraged to seek to incorporate Indigenous Knowledges and perspectives within their reports. This may need to include cultural training for IPCC Coordinating the Lead Authors, Lead Authors and Review Editors, so that this occurs in an appropriate manner.
- Ensure respect and intentional inclusion of climate change data from non-Western sources, as much Indigenous Knowledge is not published in academic journal articles but through oral storytelling, local observation of plants and animals, in informal documentation. Indigenous Peoples use their ancestral Traditional Knowledge to make useful and constructive observations of climate forecasting. Their traditional skills and knowledge should be seen as a complement, not a barrier to Western scientific knowledge and climate adaptation efforts (Moko-Painting & McAllister, 2023).

Enable participation of Aboriginal and Torres Strait Islander scholars and Knowledge holders in IPCC processes

Recommendation 26: Set and achieve at least a minimum number of Indigenous IPCC Lead Authors from Australia. Support these Indigenous Lead Authors and all Indigenous authors with adequate and appropriate resources to enable publication of IPCC-relevant publications.

Inclusion of Indigenous participants within the IPCC author teams can be achieved by setting a minimum number of Indigenous scholars and/or Knowledge holders to be appointed from Australia to Lead Author roles- with funding to support participation, including salary contributions as well as travel costs.

Publication of relevant research is also one of the criteria for selection as an IPCC author. Additional support for Aboriginal and Torres Strait Islander scholars and Knowledge holders could support and expand the published literature. This also requires additional support for Indigenous-led primary *research* on aspects of climate change deemed important by Aboriginal and Torres Strait Islander communities.

The efforts to include Indigenous authors and Indigenous Knowledges in the IPCC should ideally occur in combination to achieve the situation described by a Indigenous member of the research team:

“Avoid a ‘plug in Indigenous author’ as this risks Indigenous authors being minimised. Instead, we need both a dedicated Indigenous section AND Indigenous representation in all the IPCC sections: a Voice threaded through all sections.”

Conduct authentic and appropriate consultation with Aboriginal and Torres Strait Islander Peoples on climate change

Recommendation 27: Develop and conduct inclusive, consultative, culturally appropriate approaches with Indigenous Peoples on climate change that respects their contribution of responses and works in partnership on developing and implementing resulting actions with consideration to the purpose of consultation, methods, respondent representation, and data management.

The processes for consultation on climate change with Indigenous Peoples were closely and regularly discussed during the development and data gathering for this research. Several of the aspects of concern were described by two Indigenous members of the research team:

“There is survey fatigue and mistrust. Respondents are being asked to share their Intellectual Property and they want to see the follow through: where and how was their data used? Therefore, follow up and sharing of outputs is more than good practice; it is essential- and ensures that respondents are available for future surveys.”

“An interview is one way – it takes data, and the respondent feels hopeless afterwards, but the scientist doesn’t give anything back ... [people ask:] where does this info go? and what changes as a result?”

In response, key guidance from the Indigenous members of the team that were emphasised strongly as the survey and extended yarns were conducted are listed below:

Purpose of the consultation:

- Consultation must be meaningful and purposeful. It must not “*stop at data gathering only*” but instead occur as the starting point for future action.
- Those commissioning the research should ideally engage on Country during the research process to meet those affected by climate change and to see and feel the impacts of those changes.
- The high volume of data gathering on a range of issues regarding Indigenous Australians contributes to a sense of “*research fatigue*”. To counter this, a commitment to implementing actions following the research should be made. Furthermore, the agencies commissioning research should practice a transparent approach regarding engagement and projects.

Methods of engagement:

- Engagement methods must be culturally and socially appropriate for Indigenous respondents. Such Indigenous methodologies include extended yarns, yarning circles and other in-person or engagement with researchers that are familiar to and trusted by the respondents or trusted. Such qualitative methods can often achieve deep and contextualised data that respondents can feel represents their situation and experience, often gathered through personal engagement approaches. This was explained by an Indigenous member of the research team who stated: *“They want their voices heard rather than being collected in numbers. They say, ‘we want proper talking; come and see what’s happening to us.’”* This is in contrast to a tendency for ‘Western tick and flick’ quantitative survey methods (Mosby, 2014).
- Adequate time and contextualisation of the research must be taken to gather appropriate information. Face to face or at least conversation-based yarning approaches achieve this much more than online data gathering tools. This includes ensuring adequate time for gathering responses, as some respondents will need to seek permissions from relevant community Elders to share data.
- Existing and trusted contact with potential respondents is likely to yield higher response rates and more detailed data. However, this is an engagement process that requests a mutual exchange from both parties, including anticipated engagement into the future. This was described by an Indigenous member of the research team who stated:
“Hear from the real and authentic voices. These ‘invisible people’ can be hard to access and the Government cannot reach them. But trusted Aboriginal people can reach them through their networks... through having Indigenous peoples like us we are getting the right conversations, concerns and solutions that the government would not get otherwise... This is how effective consultation works.”
- Acknowledge the time that is invested by respondents in the data gathering process, and respect this through compensation/remuneration and any other costs (travel, accommodation, catering) in addition to providing a means to continue engagement in the topic and next steps.

Respondent representation:

- Relevant respondents need to be identified and engaged to ensure data on climate change that are from Country and represent ‘grassroots community members’. This ensures the widest range of perspectives that are not limited by existing communication frames or narratives.
- Consider the presentation of Indigenous respondents to ensure adequate coverage across leadership roles within language groups (for appropriate data sharing), diversity of Country representation, lived experience, geographic location (from urban to remote), experiences of privilege and disadvantage, and availability to participate in research and consultation. This addresses the guidance of an Indigenous member of the research team who stated, *“Just because you’re black does not give you a seat at the table.”*

Data management:

- All contributions from respondents must be respected for the intellectual property and cultural contribution of the Traditional Knowledges and Indigenous perspectives that are being shared.
- Data is often not provided by respondents in the anticipation of being in a single direction; instead, respondents often anticipate that the analysis and next steps of the research process will be shared back again – thus meaningfully and centrally engaging them in the research process. Return visits to ‘ground truth’ the emerging results should be adequately resourced in any consultation process to honour this expectation.

Pursue real and implementable actions following consultation

Recommendation 28: Use consultation as the first stage towards meaningful action on climate change.

As described above, there is a strong sense held by many Indigenous Australians of ‘research fatigue’ where no action is assured following data gathering. This is further challenged by the role of Indigenous researchers to deliver on the promise held by consultation. Two Indigenous members of the research described this challenge:

“As Indigenous researchers, we have our integrity at stake when we ask people to share their data and knowledge in a survey. Therefore, this survey should be the start that leads to action- not another talkfest.”

“Our reputation is on the line. We are asking for survey responses, but this brings in cultural obligations, reciprocity and responsibilities.”

In response, a commitment to implementing actions following the research should be made. This was described by an Indigenous member of the research team who stated: *“It is important for Voices to be heard, but when does the action come back to the community?”*

Ensure that the IPCC reports and processes are accessible and available to Aboriginal and Torres Strait Islander Peoples

Recommendation 29: Increase dissemination of IPCC Assessment Reports by partnering with a diversity of relevant Indigenous audiences to develop such summaries or fact sheets on specific IPCC topics as identified by, and relevant to Aboriginal and Torres Strait Islanders.

As the survey results showed, the IPCC reports are not reaching all relevant and interested academics, and less so reaching members of the public. Both these audiences include Aboriginal and Torres Strait Islander Peoples who may be interested if access and promotion were achieved. As one of the Indigenous research team members explained:

“Not everyone, including academics, know about the IPCC Report, including some of my non-Indigenous colleagues. There is an assumption that Indigenous peoples will know about this important document [but] it is out of reach – physically and conceptually.”

Achieving wider dissemination of the reports could engage audiences that expressed interest in the survey and extended yarns, including those involved in the Indigenous legal system who have their own law firms and Prescribed Body Corporate groups of Native Title holders.

A method of dissemination could be through creating additional summaries of the IPCC reports. A Summary for Policymakers and a Technical Summary are already produced by the IPCC from the longer Assessment Reports. Fact sheets that distil information about IPCC report findings are also produced by the IPCC author teams; see for example WGII Fact Sheet – Australasia (IPCC, 2022b). In addition, a ‘Summary for the people’ is proposed. See [Appendix A3](#) for a “Summary for the Peoples: IPCC Assessment Report 6 Chapter 11 Australasia”; this was created by the research team for this report as an example. It was based on a Twitter feed initially created by team member Gretta Pecl to contribute to this lack of wider dissemination to the general public. The Australian Government could partner with a diversity of relevant Indigenous audiences to develop such summaries or fact sheets on specific IPCC topics as identified by, and relevant to Aboriginal and Torres Strait Islanders.

Conclusions and recommendations

Aboriginal and Torres Strait Islander Peoples have lived in Australia for thousands of generations and through many changes in climate. Knowledges of managing Country (traditional estate) to ensure food sources, ecosystems and sustainability of Peoples through these changes have been passed down in Traditional methods. Much of these Indigenous Knowledges provide insights on how to adapt to the changes occurring now and projected into the future under the more rapid and human-induced climate change.

The Intergovernmental Panel on Climate Change is a United Nations-established body that seeks to document observed and projected aspects of climate change through modelling of changes, documentation of vulnerabilities of ecosystems and societies, adaptation opportunities, as well as mitigating the cause of the changes. Assessment Reports are commissioned through a process involving 195 member countries, including Australia, and involve hundreds of climate change research scholars. The Assessment Reports seek to summarise the published research since the previous Assessment Report. National governments use the IPCC reports as a core information source to consider response options, including development of policies and sources of funding.

The Knowledges held by Aboriginal and Torres Strait Islander Peoples have great relevance to the IPCC process in terms of monitoring changes through locally-specific indicators, as well as mitigation and adaptation options for Australia. In addition, many communities living on Country are located in areas that are exposed to extreme and changing conditions under climate change, including increasingly frequent and severe cyclones, sea level rise, and extended heatwaves. However, until the most recent Assessment Report (AR6; IPCC, 2022), minimal inclusion of Indigenous data had occurred, often as these datasets were not widely documented in peer-reviewed academic sources and thus were not located and summarised in Assessment Reports. This ‘invisibility’ in government and Western-focused documentation persisted through the follow-on consideration of priority areas and populations to which climate change policies, funding and monitoring were tailored.

This report was commissioned by the Australian Government ahead of the Assessment Report 7 planning, explicitly in response to an increasing call-in academia and media for inclusion of Aboriginal and Torres Strait Islander scholars and Knowledge holders in the Lead Authorship and of Aboriginal and Torres Strait Islander Knowledges and perspectives. The recommendations below emerged through four data gathering methods intended to privilege and hear Aboriginal and Torres Strait Islander voices in the IPCC and wider climate change discussions and decision-making. These results and recommendations will be shared with the relevant Australian Government Minister and Australian Government departments, as well as with the research respondents and IPCC participants, and through wider public conversations.

Recommendations

The 29 recommendations that resulted from this research are set out in response below to respond to the Australian Government's particular request for advice on actions and processes that the Australian Government can implement to:

- Strengthen Aboriginal and Torres Strait Islander Peoples' cultural Knowledges and perspectives on climate change impacts and responses in IPCC reports.
- Improve the participation of Aboriginal and Torres Strait Islander scholars and Knowledge Holders in IPCC processes.

Two additional areas of recommendation are placed after these initial responses to describe how to provide climate change information to Aboriginal and Torres Strait Islander Peoples, and how to achieve climate action at all stages in Aboriginal and Torres Strait Islander communities - from information gathering and monitoring through to the implementation of initiatives. All recommendations are numbered for ease of location and description in the body of the report.

Strengthening Aboriginal and Torres Strait Islander Peoples' cultural Knowledges and perspectives on climate change impacts and responses in IPCC reports:

Commit to specific approaches that will ensure inclusion of Aboriginal and Torres Strait Islander Knowledges and perspectives in IPCC reports, including through:

- Aboriginal and Torres Strait Islander-led climate change research
- The Australian Government commit to requesting and strongly supporting the IPCC to include both dedicated chapter/s on Indigenous Peoples as well as incorporating Indigenous Knowledges and considerations throughout all reports
- Respectful inclusion of Indigenous scientific data alongside Western scientific data (Recommendation 25)

Increase information in IPCC reports from Aboriginal and Torres Strait Islander communities that:

- Considers wellbeing in a holistic way that is connected to Country
- Involves historical truth-telling
- Is Indigenous-led
- Values caring for Country (Recommendation 20)

Ensure that IPCC reports provide relevant and applicable information on climate change in terms of the science and the localised impacts and increase the focus in the reports on Indigenous Knowledges (Recommendation 16)

Create an Indigenous-focussed section of the IPCC Assessment Reports (Recommendation 2). This can occur through:

- The Australian Government can request/insist that in the Australasian Chapter we create an Indigenous focused section, and then
- The Australian Government can suggest and lobby for a Indigenous focused section for the broader IPCC report as a whole.

When seeking this information, seek to:

- Recognise Indigenous Knowledge as a system and integrate it equivalently with Western knowledges (Recommendation 8)
- Acknowledge the marginalising impact of IPCC processes (Recommendation 1)
- Focus on a strengths- and rights-based narrative (Recommendation 4)
- Do not categorise Aboriginal and Torres Strait Islander Peoples as "stakeholders" (Recommendation 5)

Improving the participation of Aboriginal and Torres Strait Islander scholars and Knowledge Holders in IPCC processes:

Increase and recognise Indigenous contribution, especially as Lead Authors (Recommendation 3). Achieve this by seeking to:

- Set and achieve at least a minimum number of Indigenous IPCC Lead Authors from Australia. Support these Indigenous Lead Authors and all Indigenous authors with adequate and appropriate resources to enable publication of IPCC-relevant publication (Recommendation 26)
- Provide opportunities for Indigenous Peoples to be heard at all levels (Recommendation 6)

Increase Aboriginal and Torres Strait Islander Peoples' participation in IPCC and other climate change processes by:

- Valuing and including Indigenous Knowledges in a similar way to Western knowledges,
- Instating a minimum quota of Aboriginal and Torres Strait Islander authors
- Including/inviting Indigenous Peoples to engage in IPCC and other climate change processes
- Sharing IPCC reports back to community with locally relevant data and in culturally appropriate ways
- Establishing a Voice to Parliament/ Indigenous representation on climate issues
- Ensuring effective and meaningful two-way engagement between decision-makers and Indigenous Australians (Recommendation 17)

Develop and conduct inclusive, consultative, culturally appropriate approaches with Indigenous Peoples on climate change that respects their contribution of responses and works in partnership on developing and implementing resulting actions with consideration to the purpose of consultation, methods, respondent representation, and data management (Recommendation 27). Use consultation as the first stage towards meaningful action on climate change (Recommendation 28)

When engaging Indigenous Lead Authors, seek to:

- Implement free, prior and informed consent for Indigenous Peoples' engagement in climate change action and measures (Recommendation 10)
- Create genuine partnerships with reciprocity, power sharing and respect (Recommendation 9)
- Support Indigenous women to empower themselves in climate change leadership (Recommendation 13)
- Increase familiarity and use of the IPCC and its reports for Indigenous Australians with a community and/or professional role of relevance to climate change (Recommendation 15)

Providing climate change information for Aboriginal and Torres Strait Islander Peoples:

IPCC reports are not a key source of climate change information. To increase climate change information for Indigenous Australians in particular:

- Direct IPCC and other climate change information through dedicated local events and visits,
- Promote accessible and targeted climate change reports,
- Ensure climate change information is disseminated through social media and
- Seek media coverage of climate change on all news platforms (Recommendation 18)

Improve sharing of information about climate change (including from IPCC reports) through:

- Increased locally-based engagement with Aboriginal and Torres Strait Islander Peoples in local community, through dialogue and in culturally-appropriate ways.
- Increased engagement with young people through accessible formats that incorporate climate change science and Indigenous Knowledges (Recommendation 19)

Increase dissemination of IPCC Assessment Reports by partnering with a diversity of relevant Indigenous audiences to develop such summaries or fact sheets on specific IPCC topics as identified by, and relevant to Aboriginal and Torres Strait Islanders (Recommendation 29)

Achieving climate action in Aboriginal and Torres Strait Islander communities: Information gathering, monitoring and implementation of initiatives:

Continue to research impacts of changes and impacts on ecosystem and human health (including social and emotional wellbeing and physical health) on Aboriginal and Torres Strait Islander communities in all ecosystem types (Recommendation 22)

Seek and support Indigenous guidance to reduce the impacts of climate change (Recommendation 23). Support funding and training of Indigenous community leaders, knowledge holders and ranger groups to monitor climate change impacts on Country and people (Recommendation 21)

Ensure contextual understanding of climate change and Indigenous Peoples by seeking to:

- Acknowledge the interconnected health of Peoples and health of Country (Recommendation 12)
- Recognise the colonial drivers of threats by embedding self-determination and capacity building in all action (Recommendation 11)
- Protect Indigenous Knowledge when using Knowledge (Recommendation 14)

Support local and Indigenous-led climate change initiatives including legal protections (Recommendation 7). Invest in adaptation strategies and actions on all Indigenous communities impacted by climate change to protect physical health, emotional and social wellbeing, safety, employment, income and opportunities on traditional Country, and in any community to which people may be forced to relocate (Recommendation 24)

Appendices

Table 1: Feedback received by DCCEEW from Australian IPCC Lead Authors, Review Editors and Coordinating Lead Authors (noting all respondents were non-Indigenous)

How could IPCC report preparation processes be improved?
For Australia's contribution (and specifically the Australasia regional chapter in WG2), Aboriginal and Torres Strait Islander research should be included. View further comments on this here: https://theconversation.com/ipcc-reports-still-exclude-indigenous-voices-come-join-us-at-our-sacred-fires-to-find-answers-to-climate-change-178045
Do you have any suggestions for increasing the diversity of participants in the development of IPCC reports?
Yes, including authors with Indigenous Knowledge
Aboriginal and Torres Strait Islander Peoples of Australia must be Lead Authors in the next Australasia chapter (see justification here: https://theconversation.com/ipcc-reports-still-exclude-indigenous-voices-come-join-us-at-our-sacred-fires-to-find-answers-to-climate-change-178045).
The governments nominating people should look at track record but also what academics write about, and consider that diversity when they put nominations forward. For Aboriginal and Torres Strait Islander Peoples, perhaps some more information/awareness about the nomination process and being encouraged early on to also read + comment on IPCC reports so they are aware of the process. For women and Indigenous Peoples, it could include establishing a buddy system so pairing them up with an experienced IPCC author can also help in navigating the process.
The IPCC should encourage greater participation of Indigenous people as both Lead Authors and Contributing Authors. See https://theconversation.com/ipcc-reports-still-exclude-indigenous-voices-come-join-us-at-our-sacred-fires-to-find-answers-to-climate-change-178045 . There should also be greater inclusion of climate resilience practitioners. See https://www.sciencedirect.com/science/article/pii/S2405880716300449 . IPCC Working Group 2 Chapter 11 had a good mix of Lead Authors with previous IPCC experience, science-policy expertise, leadership skills and deep knowledge in specific disciplines. This mix should be maintained in future, augmented by Indigenous representation and practitioner representation
Government and institutional sponsorship of women and Indigenous Peoples, with government and institutional funding support for research assistance
It is critically important to try to include Indigenous scientists and more women as authors. The process of doing this seemed to work well for the chapters in the State of the Environment report, so repeating and learning from that might be good. For Aboriginal and Torres Strait Islander participants, it may be necessary to provide funding to support their time engaged in IPCC activities, in addition to travel funding.
Due to the huge time commitment and limited flexibility, it is logistically difficult for anyone with a young family - not easy to overcome. Early career researchers, especially women, and at least some Aboriginal and Torres Strait Islander Peoples, would benefit from mentoring and support from seasoned colleagues - it is intimidating to be surrounded by the top researchers in your field, who dominate the discussions. Some of the developing Country participants did not have good English writing skills - support with writing would have enabled them to have greater input, and might increase confidence to nominate.
IPCC already does well in ensuring diversity. And yes, having Aboriginal and Torres Strait Islander participation is important, more so embedded with others in chapter teams rather than Aboriginal and Torres Strait Islander contributors reporting specifically on contributions and issues relating to Aboriginal and Torres Strait Islander.

Given the emphasis in AR6 on IK and LK, inclusion of Aboriginal and Torres Strait Islander People would be of great benefit, provided that delegates in this capacity reflect a representative sample of Aboriginal and Torres Strait Islander Knowledge.
We had excellent representation of women. In relation to Aboriginal and Torres Strait Islander People, early and sensitive consultation. Perhaps contact AR6 LAs and CLAs for some names of people who would be good candidates for the role.
Likewise, a specific programme to encourage Aboriginal and Torres Strait Islander People to join the process needs to be undertaken. There is a large amount of valuable knowledge on this topic with the original inhabitants of this continent and the future IPCC reports could benefit from their understanding, knowledge on the topic of Climate Change.
Yes. We should set some targets for participation of Aboriginal and Torres Strait Islander People.
Yes. We need to explicitly include Aboriginal and Torres Strait Islander authors.
In chapter 3 and the cross-chapter box there was good gender and career stage balance. More Aboriginal and Torres Strait Islander People (who played a central role in providing IK and LK for the polar cross chapter paper I reviewed).
Proportion of women authors is still low so additional women could be encouraged to apply. Developing country participation was improved but I did not hear from any Aboriginal and Torres Strait Islander Peoples in WGIII at least.
Organising information sessions for a wider outreach of the opportunity for women or Aboriginal and Torres Strait Islander People to engage in the development of IPCC reports.
For Aboriginal and Torres Strait Islander People it would be great to have a chapter or part of an overview chapter devoted to impacts of climate change on Traditional Owner groups.
Still need to improve participation by women – still only make up around 23 percent of authors. Aboriginal and Torres Strait Islander People are not well represented in our field (at least in WG1), but it would be good to try and solicit interest from these scientists in WG2.
For WGI, we need to do better on gender and geographical participation. AR6 was a clear improvement from AR5, and we can do it again for AR7. For WGI, unclear how Aboriginal and Torres Strait Islander People could play a role, but a big one in WGII and III.

A1 Organisations contacted by the research team for survey responses

Aboriginal Corporations and Land Councils

Central Australian Aboriginal Congress

Central Land Council

Indigenous-led legal firms (various)

Northern Land Council

Gunditj Mirring

Prescribed Body Corporates (various, with links to Native Title Holder groups)

Tangentyere Council Aboriginal Corporation

Warddeken Rangers, Maningrida

Yorta Yorta Nation Aboriginal Corporation

Tasmanian Aboriginal Heritage Council

Southeast Tasmanian Aboriginal Corporation

Government agencies

Commonwealth Environmental Water Office

Environment Victoria

Indigenous Land and Sea Corporation

Murray Darling Basin Authority

National Environmental Science Program- Indigenous Partnerships

Power Water Corporation NT

Victorian State of the Environment author list

Academics at the following research organisations

Australian National University

Biodiversity Council

CSIRO

Curtin University

Federation University Australia

Griffith University

James Cook University

The University of Queensland

University of Canberra

University of Melbourne

University of NSW

University of Tasmania

University of Technology Sydney

Consulting firms

Alluvium Consulting

KBR

Non-government organisations

Australian Conservation Foundation

Australian Council of Social Services

Climate Action Network Australia

Conservation Council of WA

Doctors for the Environment

Greenpeace Australia Pacific

North Australian Justice Alliance

Original Power

Public Interest Advocacy Centre (PIAC)

The Nature Conservancy

Tipping Point

WWF Australia

A2: 'IPCC Voices' Survey (from Qualtrics platform)

The purpose of this survey:

The Australian Department of Climate Change, Energy, the Environment and Water has commissioned Indigenous scholars and climate change researchers to find out what the Australian Government can do to enhance Aboriginal and Torres Strait Islander Peoples voices in the Intergovernmental Panel on Climate Change (IPCC).

The purpose of this survey is to inform a report the researchers will write to the Australian Government about:

- What Aboriginal and Torres Strait Islander researchers and people living in climate change-affected communities think about the impacts of climate change on their Country and communities that should be noted in the IPCC report, and
- How Aboriginal and Torres Strait Islanders can have a strong First People's voice in the IPCC report.

Completing this survey:

It is expected the survey will take 30 minutes to complete.

Incentives for responding to this survey:

For those of you who are NOT answering this survey on paid work time at a job relevant to the survey topic, you are eligible to receive a \$30 voucher (provided as a gift voucher for local or online shopping) as a thank you gift.

Ethical approval for this survey:

This survey has been approved as part of The University of Queensland's wider project called 'Living on Country: Aboriginal and Torres Strait Islander Peoples Navigating Their Health in a Global Warming-Affected Future. Project Number' (UQ reference 2022/HE002188). Details of this project and the use of your data are below. By completing and submitting this paper survey, you are consenting to participate in this survey.

Participant Information Sheet and Consent form for survey interview participants Introduction and aim of study:

This research seeks to work with Aboriginal and Torres Strait Islander Peoples and non-Indigenous researcher allies to identify initiatives and information to support health and wellbeing in a changing climate.

Who is funding the study?

This part of the project is a survey on Indigenous Voices and data being included in the climate reports by the Intergovernmental Panel on Climate Change (IPCC). This is funded by the Australian Government through the Department for Climate Change, Energy Efficiency and Water.

How will the study be carried out?

The research team is led by Dr Nina Lansbury at the School of Public Health within The University of Queensland. She is working under the guidance of Indigenous research partners. Together, the researchers and participants will identify the barriers and options to deal with climate change-related issues, including participation in the IPCC, through a semi-structured survey/interview tool.

What will I be asked to contribute?

Due to your role working together with community and local people and/ or on climate change, you have been recommended as a person with the knowledge, experience, and understanding of the issues, to share insights and contribute to this research. We are requesting around 30 minutes of your time to be interviewed using a survey tool and/or interview on your observations and experience of climate change. We are also wanting to ask you about possible options that could help the community adapt to climate change. You can withdraw at any stage.

What are the benefits of participating in this study?

Peoples and Country in Australia have or will have challenges brought on by climate change, such as drinking water supplies, food availability and increasing heat. This project is one step to identifying the barriers and opportunities to solving these challenges and it will help provide suitable solutions.

The potential benefit of this outcome for communities and people is expected to justify any discomfort participants might feel in talking about a challenging environmental and social change issue. You may not benefit directly from participation in this study, but you will be providing a valuable contribution to the knowledge, policy, and action on these issues, that should contribute to positive changes for communities and people, now and into the future. For those who are not answering this survey on paid work time at a job relevant to the survey topic, they are eligible to receive a \$30 voucher (provided as a gift voucher for local or online shopping) as a thank you gift.

Are there any risks involved?

The university researchers are aware that climate change is a complex issue for First Nations people and communities. It is linked to the health of Country and people, and closely related to culture, health, and wellbeing. Managing this issue without sufficient policies, skills and resources, finances, support, information, or other needs may be difficult and distressing for First Nations people. All human research undertaken will comply with the values, principles, governance, and review process specified in the NH&MRC National Statement on Ethical Conduct in Human Research (2007). A copy of the National Statement can be found at <https://www.nhmrc.gov.au/book/national-statement-ethical-conduct-human-research>.

How will my privacy be protected?

All data collected in this study will be de-identified and any identifiable information will not be traceable to you, unless otherwise agreed with you. This research is governed under the Privacy Act 1988 (Commonwealth). The project team is collecting your personal information for the purposes of conducting the study and related research. The project team will only use and disclose your personal information in accordance with the Privacy Act 1988 and the NH&MRC National Statement on Ethical Conduct in Human Research (2007) as amended from time to time, and as otherwise required by law. The project team may publish study results and data in research publications and press releases. However, the project team will de-identify any personal information contained in the data and results so that you cannot be identified.

What if I wish to withdraw?

You are free to withdraw at any time during the process. Any information/data collected up to the point of withdrawal will be included in the analysis of the study.

What are my obligations as a participant?

This study adheres to the Guidelines of the ethical review process of The University of Queensland and the National Statement on Ethical Conduct in Human Research. Whilst you are free to discuss your participation in this study with the researcher contactable on Dr Nina Lansbury, or n.lansbury@uq.edu.au or 07 3346 4717, if you would like to speak to an officer of the University not involved in the study, you may contact the Ethics Coordinator on 617 3365 3924 / 617 3443 1656 or email humanethics@research.uq.edu.au.

How will I receive the findings?

If you wish to view a draft of your interview transcript and make any changes, this can be provided by email by the researchers.

Your consent

Thank you for considering participation in this project. Please note your agreement with the following:

- I acknowledge that I have read and understand this participant information.
- An opportunity and contact details have been given to me to discuss the study with the researcher.
- I understand that while information gained during this study may be published, I will not be identified, and my personal results will not be revealed. I understand that my responses will be de-identified before analysis.
- I understand that I am free to withdraw from the project at any stage. I understand that information/data collected up to the point of my withdrawal will be included in the analysis of the study.
- I recognise that my participation in this study will assist with the advancement of knowledge and that I may not benefit personally from the research.

By completing and submitting this paper survey, you are consenting to participate in this survey.

Climate change

The next questions will ask about climate change. The definition of climate change from the United Nations is "Climate change refers to long-term shifts in temperatures and weather patterns. Such shifts can be natural, due to changes in the sun's activity or large volcanic eruptions. But since the 1800s, human activities have been the main driver of climate change, primarily due to the burning of fossil fuels like coal, oil and gas". Reference: <http://bitly.ws/Ehly>

1. What seasonal changes have you seen, felt, or think might be happening in your community or Country from climate change?
2. What are the three climate change impacts you are most worried about?
3. What are the best ways for sharing information about climate change?
4. From where do you get your information about climate change?
5. What are three things you think need to happen now to reduce the impacts of climate change?
6. What are different organisations and people doing well, and what can they do better to protect your Country and community from climate change? (examples such as governments, businesses, mining, banks, local community organisations, schools, researchers)
7. What is one thing that governments need to hear from Aboriginal and Torres Strait Islander Peoples on climate change?

Intergovernmental Panel on Climate Change (IPCC)

The Intergovernmental Panel on Climate Change (IPCC) Assessment Reports bring together the latest climate change science. They are used by governments around the world for decision-making on climate change.

8. Have you heard about the IPCC and the IPCC reports?

Yes, I have heard of them

Never heard of it

Not sure

If you selected 'never heard of it', please skip to question 12.

9. Have you used an IPCC report in your work? Please identify how much you have used the reports on a scale of 1-10.

Mark the scale using an X.

Not at all

Some

A lot

0

5

10

0 – not relevant to my immediate work.

10. If you have used the IPCC reports in your work, how have you used them?
(please select all that apply)

Good arguments in favour of climate change

Information to alert people to urgent need for action

Specific data about my Country

Other (please specify): _____

First Nations Voices in IPCC reports

11. What additional information from Aboriginal and Torres Strait Islander communities is needed in an IPCC report?

12. What do you think needs to happen for Aboriginal and Torres Strait Islanders to have a strong voice in the climate change issue and/or the IPCC?

Further References and Information

13. Can you recommend any key documents that we should be reading to find recommendations for this report?

14. Is there any relevant research you are doing or have done? If so, how can we access it?

15. Do you know someone else we should be speaking to? If possible, please share their name, organisation, and other details.

16. Why might they be a good person to contact on this issue?

17. Is there anything else you would like to tell us about climate change?

Completing the survey

18. How was this survey completed?

Online (individually, on phone or computer)

In Person (by a researcher, in conversation with a respondent)

About You

19. What is the place name or postcode of where you currently live?

20. What is your age?

18-30

31-60

61+

21. What is your gender?

Female

Male

Non-binary

Prefer not to say

Other

Please add detail if you wish: ---

22. Cultural Background. Are you:
(Please select as many as needed)

Aboriginal

Torres Strait Islander

Non-Indigenous

23. What is your Country or language group?

24. What role(s) and/or job(s) do you have that are relevant to the environment?

Thank you for completing the survey.

A3: Summary for the Peoples: IPCC Assessment Report 6- Australasia

What is the IPCC and how is it relevant to me?



What is the IPCC?

The Intergovernmental Panel on Climate Change, or the IPCC, is the world's highest authority on climate change science. It is made up of many leading climate scientists from around the world who assess the latest climate science, and what that means for our natural and human systems. The IPCC reviews thousands of scientific papers and provides an assessment of a wide range of topics, including water systems, food systems, oceans, cities, health, poverty and inequality. It contains chapters on specific regions, including Australasia, Europe, Small Island Developing States, Africa and Asia.

- The IPCC is an international body whose governing Panel is made up of government members representing 195 countries. It is the leading international body for assessment of climate change and is a key source of scientific information and technical guidance to the United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement.
- The IPCC was established in 1988 and produced its first global report in 1990. The IPCC's Sixth Assessment Report (AR6) came out in 2022/2023 and comprises three Working Group contributions and fourth synthesis component:
 - Working Group I (the physical science basis)
 - Working Group II (impacts, adaptation and vulnerability)
 - Working Group III (mitigation)
 - Synthesis Report, summarising all the key points from the other three components

IPCC Sixth Assessment Report

Authors by region



782 Lead Authors
Assessed over 66,000 studies
200,000 review comments

Figure 1. AR6 had over 700 Coordinating Lead Authors, Lead Authors, and Review Editors from 90 countries.

- Each IPCC report is completed by a large, global group of scientists and experts, appointed by the government members, who contribute their time in reviewing the available science on climate change, and drafting and revising the report. These reports bring together and assess all relevant recently published scientific and technical literature. The reports are "policy relevant but not policy prescriptive". This means that they present information on likely future climate change and the risks that climate change poses, and discuss the implications of different response options, but it is the responsibility of Governments to consider the IPCC's findings and to implement actions.

- Together, the four parts of Assessment Report 6 were drafted and reviewed by over 700 experts from 90 countries. Collectively, this group of experts assessed over 66,000 separate published scientific studies written by thousands and thousands of different scientists from all over the world. They then revised and edited the draft reports in several rounds of review, based on over 200,000 reviewer comments from thousands of different people, organisations and governments from many different countries.
- When assessing all the scientific information available on climate change, IPCC authors determine confidence levels for key findings, based on the available evidence (robust, medium and limited) and the degree of scientific agreement (high, medium and low).
- All literature cited in the IPCC report must be peer-reviewed, published and publicly available, or must be lodged with IPCC, so any reviewer of the report can access each literature source independently and directly.
- IPCC has a strict conflict of interest policy. Every IPCC Lead Author or Review Editor needs to inform the IPCC of any real or perceived conflicts of interests, every year.
- Although there is a growing acknowledgement of the importance of Indigenous knowledges and Indigenous voices in IPCC reports and processes, there is still a lack of Indigenous knowledges in IPCC.

What did the latest IPCC report, AR6, find?

Human activity is changing the climate faster than in the past, leading to more frequent and intense extreme events, and causing widespread losses and damages to nature and people in many parts of the world. Some of these impacts are irreversible, like the damage to coral reefs, but there are some things we can do to adapt and to reduce our vulnerability in many cases.



The speed of the current climate change is much faster than most changes in climate in the past, making it more difficult for the natural world and human societies to adapt.



In comparison to the baseline of 1850-1900, the temperature over the years 2011-2020 was 1.1°C warmer, and there is no doubt that this is due to human activity.



Human activities like burning fossil fuels such as coal, oil and natural gas, increase the amount of 'greenhouse gasses' in the atmosphere. These gasses trap the sun's heat and lead to warming on land and in the ocean.



Additionally, a large proportion of these additional gasses are absorbed by the ocean and combines with water to form carbonic acid. This is changing the ocean's pH from alkaline to more acidic.

What does climate change mean for people living in Australia?



Warming and sea-level rise



Hot days and heatwaves



Rainfall in the north



Extreme fire weather days in the south and east



Snow

- Increases in average temperatures, combined with an increase in extreme weather events, have caused major impacts for many of our natural systems - including extensive coral bleaching along the northern coasts of Australia and loss of temperate kelp forests along the southern coasts.
- Climate trends and extreme events have also led to major impacts for some human systems.
 - Extreme heat has led to excess deaths and increasing rates of many illnesses.
 - Government, business and communities have experienced increasing costs associated with extreme weather, droughts and sea-level rise.
- Climate change is expected to increase existing vulnerabilities, and social inequalities and inequities. These include inequalities between:
 - Indigenous and non-Indigenous Peoples
 - Older and younger generations
 - Rural and urban areas
 - Incomes
 - Health status

The Australasian chapter of the IPCC AR6 report identified **9 key risks for Australia** according to what has been observed, projected and documented, and based on 4 criteria:

- magnitude
- likelihood
- timing
- adaptive capacity

1

Loss and degradation of coral reefs, and associated biodiversity due to warming and marine heatwaves.

2

Loss of plants and animals in our high mountains due to less snow.

3

Potential loss of alpine ash, snowgum woodland, pencil pine and northern jarrah forests in southern Australia due to hotter and drier conditions with more fires.

4

Loss of kelp forests in southern Australia due to ocean warming, marine heatwaves and overgrazing by climate-driven range extensions of herbivore fish and urchins (warming waters means critters move further south- about 200 species at least have shifted further south around Australia).

5

Loss of natural and human systems in low-lying coastal areas due to sea level rise.



6

Disruption and decline in our food production and increased stress in rural communities in south-western, southern & eastern mainland Australia due to hotter and drier conditions.

7

Increase in heat-related deaths for both people and wildlife in Australia due to heatwaves.

8

A key system-wide risk is cascading, compounding and aggregate impacts on cities, infrastructure, supply-chains and services due to wildfires, floods, droughts, heatwaves, storms and sea-level rise.

9


Wildfires, floods, droughts, heatwaves, storms and sea-level rise may happen either at the same time, or one event after another, leading to even greater impacts on cities, infrastructure, supply-chains and services as our systems become overwhelmed.

- With many of these risks, people from lower income groups, or with less access to resources, will be affected more greatly, YET they will have contributed less to the cause (ie these groups produce less emissions because they use less energy, travel less, and consume fewer products).
- Further climate change is inevitable, with the rate and magnitude of future changes largely dependent on the quantity of emissions released globally. **However, every small fraction of a degree of warming that we can avoid improves the outcome for people and for natural systems.**

- Actions that will help us adapt to climate change are taking place, and are increasing in terms of ambition, scope and progress, but progress is uneven, and there are some large gaps, as well as barriers and limits to adaptation.

What about Aboriginal and Torres Strait Islander Peoples specifically?

- One in every five people from the Indigenous Australian population lives in remote areas where climate change raises (additional) risks to health and to their way of life.
- Climate changes may lead to a loss of access to traditional foods on Country. In some cases, communities have been forced to change their diet, which affects nutrition levels, and of course, culture. Challenges to food security and to economic security, through changing access to traditional foods, can impact cultural and social identity.
- Some communities are also experiencing a lack of water, loss of land and cultural resources through land erosion and sea-level rise. Parts of the Torres Strait are seeing their ancestors' burial sites exposed following saltwater intrusion and sea level rise.
- Economic security of households may be impacted by the inability to supplement food sources and household income through fishing, which may be impacted by unpredictable weather, or changes in condition or distribution of coral, seagrass, or sea mammals, among other species.



How can we work together to adapt to climate change, to reduce carbon emissions, or to have our voices heard?

Ultimately, climate change is a complicated issue that needs governments, businesses, industries and communities globally to work together to address.

However, we can all make a difference too through:

- The actions that we take as individuals
- By working together to take collective action
- By calling for larger-scale systemic change, for example, by governments and world leaders.

Aboriginal and Torres Strait Islander Peoples are already leading Australia's response to the climate crisis, through caring for country and many other actions.

Globally, the benefits of reducing emissions, and therefore reducing climate change impacts, far exceed the costs of implementing climate actions. At a local level, many strategies to reduce greenhouse gas emissions, or to strengthen resilience of a community, also have large benefits like cleaner air, soil and water and so they also increase human health and well-being at the same time as reducing climate change.

Indigenous-led initiatives that directly or indirectly fight for climate change, that you can support:

Save our songlines

active in Murujuga to stop new industry on the Burrup from damaging our Songlines, our rock art, our health and our climate.

Seed

began as a semi-autonomous branch of the Australian Youth Climate Coalition (AYCC) back in 2014 and is now a fully autonomous movement led by First Nations youth.

Country Needs People

a growing group of Indigenous and non-Indigenous people campaigning for Indigenous Ranger and Protected Area programs.

Wangan and Jagalingou Family Council

the proud Traditional Owners of a vast area of land in central-western Queensland, including the site of Adani's destructive coal mine.

Olkola Aboriginal Corporation

Olkola Aboriginal Corporation now holds and manages 869,822 hectares of its Traditional Lands, making it one of the largest landholders in the Cape York Peninsula.

Wuthathi Aboriginal Corporation

for whom the struggle to return and protect their ancestral homelands took nearly 100 years.

Mirarr people via Gundjeihmi Aboriginal Corporation

the Traditional Owners of land in the north of the Northern Territory. They are powerful advocates against uranium mining, speaking out in the famous Jabiluka campaign, and for Kakadu.

Barnagarla: Help us have a say on Kimba

are fighting an important fight to stop nuclear waste being dumped on Country.



If we work together, we can combine our efforts and influence to achieve change and progress faster.
We can:



Find others in your mob and use your voices! Get together with friends and others in your community who care about climate action. You could join a group like SEED, Australia's first Indigenous youth climate network, or the Australian Youth Climate Coalition. Collective events such as the school strikes for climate raise awareness - and they also give climate scientists all around the world hope that the next generation will make changes and vote for the climate policies we urgently need!

Systemic changes are the impactful changes that can happen at bigger scales, such as through state or National government decisions. Support climate change and Indigenous human rights activists in your community who are holding governments and institutions to account, seeking systemic changes. Subscribe, follow, like and share content on social media of groups such as the Torres Strait 8 and other National Indigenous groups.



Ask to talk with your local politicians to see what action they need to take to adapt to climate impacts and reduce greenhouse gas emissions in your local area.

Contact State and Federal politicians to ask them to make more ambitious changes to climate policy for your community and Australia.



Contact product brands you like, and companies or businesses you use services from, to ask what their carbon emissions are and how they plan to make their products carbon neutral.

Remember that all of us have different circumstances and therefore we might have different capacities to take some of these actions - and that is totally OK! For example, if someone was really stressed about having enough money to buy food, or finding somewhere to live, or maybe if they were sick, then they might not be able to think about or take action on climate change right now.





It's important to remember too that people don't have to be 'perfect' to be serious about tackling climate change (that would be exhausting, and people might give up then!). The big thing to remember is to just do what you can, when you can, and encourage others when you see them doing a good job. Importantly, it really doesn't help to make people feel guilt or shame for doing what you might think is not enough - it is much better to try and encourage others by being good examples ourselves.

Lastly, we probably can't ALL do ALL the possible actions against climate change ALL the time. Remember that this is OK because what we really need is lots of people doing lots of things lots of the time to try and help together. Remind yourself and other people to feel good about whatever changes and actions you are taking – every action helps.



References

- Australian Human Rights Commission (2020) *Wiyi Yani U Thangani (Women's Voices): Securing Our Rights, Securing Our Future Report*. 9 October. Available at: <https://humanrights.gov.au/our-work/aboriginal-and-torres-strait-islander-social-justice/publications/wiyi-yanis-uthangani> (accessed 29 May 2023).
- Carmona, R., MacDonald, J.P., Dorrough, D.S., et al. (2022) *Recognising the contributions of Indigenous Peoples in global climate action? An analysis of the IPCC report on Impacts, Adaptation and Vulnerability*. International Work Group for Indigenous Affairs. Available at: https://iwgia.org/doclink/iwgia-ipcc-briefing-march-2022-eng/eyJ0eXAiOiJKV1QiLCJhbGciOiJIUzI1NiJ9.eyJzdWUiOiJpd2dpYS1pcG9jLWJyaWVmaW5nLW1hcmNoLTlwMjltZW5nliwiaWF0IjoxNjQ4MDM2NjM1LCJleHAiOiE2NDgxMjMwMzV9.PJ_JVz_PSY45D941htDF8jGrCRD8FWjvLMqPhtCOTUfo.
- Carmona, R., Reed, G., Thorsell, S., et al. (2023) A New Partnership with Indigenous Peoples? An Analysis of the Intergovernmental Panel on Climate Change's Sixth Assessment Report. *Research Square (under review)*. DOI: [10.21203/rs.3.rs-2471382/v1](https://doi.org/10.21203/rs.3.rs-2471382/v1).
- Cisse, G., McLeman, R., Adams, H., Aldunce, P., Bowen, K., Campbell-Lendrum, D. (2022), Chapter 7: Health, Wellbeing, and the Changing Structure of Communities, In: H.-O. Portner and D. Roberts (ed.s), Working Group II: Impacts, Adaptation and Vulnerability, Sixth Assessment Report, Intergovernmental Panel on Climate Change, Geneva.
- Costello, O., Dilworth, T., Haynes, K., et al. (2021) *Cultural Land Management in Southeast Australia*. September. Bushfire and Natural Hazards CRC. Available at: https://www.naturalhazards.com.au/system/files/2022-04/cultural_land_management_in_southeast_australia_black_summer_final_report_0.pdf (accessed 4 June 2023).
- Department of Agriculture, Water and the Environment (2021) *Australia State of the Environment Report 2021*. Commonwealth of Australia. Available at: <https://soe.dcceew.gov.au/indigenous/introduction> (accessed 19 April 2023).
- Department of Health and Aged Care (2023) *National Health and Climate Strategy*. June. Australian Government.
- Economic and Social Council (2023) Report on the twenty-second session (17–28 April 2023). In: *Permanent Forum on Indigenous Issues*, April 2023. United Nations. Available at: <https://documents-dds-ny.un.org/doc/UNDOC/LTD/N23/127/22/PDF/N2312722.pdf?OpenElement>.
- Fischer, M., Maxwell, K., Nuunoq, Pedersen, H., Greeno, D., Nang, J., Blair, J., Hugu, S., Mustonen, T., Murtomaki, E. and Mustonene, K. (2022), Empowering her guardians to nurture our Ocean's future. *Reviews in fish biology and fisheries* 32(1): 271–296.
- Foley, R., O'Neill, L., McMurray, L. (2023) 'A stench of tokenism': how environmental reforms ignore First Nations knowledge. *The Conversation*, 1 March. Available at: <http://theconversation.com/a-stench-of-tokenism-how-environmental-reforms-ignore-first-nations-knowledge-198393> (accessed 4 June 2023).
- Ford, J.D., Cameron, L., Rubis, J., et al. (2016) Including indigenous knowledge and experience in IPCC assessment reports. *Nature climate change* 6(4). Nature Publishing Group: 349–353. <https://doi.org/10.1038/nclimate2954>
- Ghaly, G. (2021) Climate Displacement and the Need for Legal Protection. *ANU Undergraduate Research Journal*, 11 (1).
- Gray, R. R. (2022). Rematriation: Ts'msyen Law, Rights of Relationality, and Protocols of Return. *Native American and Indigenous Studies* 9(1): 1-27, <https://doi.org/10.1353/nai.2022.0010>

- Hales, R., Foley, R., Cadman, T., et al. (2021) Land, culture, livelihood: what Indigenous people stand to lose from climate 'solutions'. *The Conversation*, 3 November. Available at: <http://theconversation.com/land-culture-livelihood-what-indigenous-people-stand-to-lose-from-climate-solutions-170083> (accessed 18 June 2023).
- HEAL Network & CRE-STRIDE (2021) *Climate Change and Aboriginal and Torres Strait Islander Health*. November. Lowitja Institute. Available at: https://www.lowitja.org.au/content/Image/Lowitja_ClimateChangeHealth_1021_D10.pdf.
- Hernandez, J., Meisner, J., Jacobs, LA., et al. (2022) Re-Centering Indigenous Knowledge in climate change discourse. *PLOS Climate* 1(5). Public Library of Science: e0000032.
- Hoosan, D. [Foundation for Indigenous Sustainable Health]. (2021, November 12). *In My Blood It Runs - Djuwan addresses the United Nations Human Rights Council* [Video]. YouTube. <https://www.youtube.com/watch?v=Osoq2Mtf9T8>
- Howarth, C., Viner, D., Dessai, S., Rapley, C., Jones, A. (2017). Enhancing the contribution and role of practitioner knowledge in the Intergovernmental Panel on Climate Change (IPCC) Working Group (WG) II process: Insights from UK workshops. *Climate Services*, 5, 3-10. <https://doi.org/10.1016/j.cliser.2017.04.003>
- Human Rights Law Centre. (2022, December 8). *UN Human Rights Committee finds Australia violated Torres Strait islanders' human rights over climate inaction*. Human Rights Law Centre. <https://www.hrlc.org.au/human-rights-case-summaries/un-human-rights-committee-finds-australia-violated-torres-strait-islanders-human-rights-over-climate-inaction>
- Indigenous Carbon Industry Network (2022) *Indigenous Carbon Projects Guide*. September. Available at: https://assets.nationbuilder.com/icin/pages/186/attachments/original/1664416438/Indigenous_Carbon_Project_Guide_FULL.pdf?1664416438.
- Indigenous Peoples Organisation Australia (2021) *Heal Country, Heal Climate - Priorities for climate and environment*. November. Available at: <https://www.ohchr.org/sites/default/files/2022-03/indigenous-peoples-organization2.pdf>.
- IOM (2018), *Global Compact for Safe, Orderly and Regular Migration*, International Organisation for Migration, Geneva, Available at: <https://www.iom.int/global-compact-migration>
- IPCC. (2023). *Synthesis Report of the IPCC Sixth Assessment Report (AR6)*, Intergovernmental Panel on Climate Change, Geneva.
- IPCC. (2022). *Climate Change 2022: Impacts, Adaptation and Vulnerability- Summary for Policymakers*. Intergovernmental Panel on Climate Change, Geneva.
- IPCC. (2021-2022.). *Sixth assessment report*. IPCC. Available at: <https://www.ipcc.ch/assessment-report/ar6/>, Intergovernmental Panel on Climate Change, Geneva.
- IPCC (2022b), Fact sheet - Australasia. Climate change Impacts and Risks. Working Group II Impacts, Adaptation and Vulnerability, Intergovernmental Panel on Climate Change, Geneva. https://www.ipcc.ch/report/ar6/wg2/downloads/outreach/IPCC_AR6_WGII_FactSheet_Australasia.pdf.
- James, G., Burton, D., Campion, O., et al. (2021) *Indigenous Fire and Land Management - Impact and Sustainability*. July. , Bushfire and Natural Hazards CRC. Available at: https://www.naturalhazards.com.au/system/files/2022-04/indigenous_fire_and_land_management_black_summer_final_report.pdf.
- Lansbury, N., Matthews, V., Atkinson, A-R., et al. (2022) COP27: On Country, health and Indigenous Knowledges. Available at: <https://www.croakey.org/cop27-on-country-health-and-indigenous-knowledges/>. (accessed 19 April 2023).

- Lawrence, J., Mackey, B., Chiew, F., Costello, M.J., Hennessy, K., Lansbury, N., Nidumolu, U.B., Pecl, G., Rickards, L., Tapper, N., Woodward, A., and Wreford, A. (2022) Australasia. In: *Climate Change 2022: Impacts, Adaptation and Vulnerability*. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. In Portner, H.-O., Roberts, D.C., Tignor, M., Poloczanska, E.S., Mintenbeck, K., Alegría, A., Craig, M., Langsdorf, S., Löschke, S., Möller, V., Okem, A., Rama, B. (eds.). Cambridge University Press, Cambridge, UK and New York, NY, USA, pp. 1581–1688, [doi:10.1017/9781009325844.013](https://doi.org/10.1017/9781009325844.013)
- Leonard, K., David-Chavez, D., Smiles, D., Jennings, L., Alegado, R., Tsinnajinnie, L., Manitoiwabi, J., Arsenault, R., Begay, R.L., Kagawa-Viviani, A., Davis, D.D., van Uitregt, V., Pichette, H., Liboiron, M., Moggridge, B., Russo Carroll, S., Tsosie, R.L., Gomez, A. (2023). Water back: A Review Centering Rematriation and Indigenous Water Research Sovereignty. *Water Alternatives* 16(2): 374-428.
- Lowitja Institute (2023) Lowitja Institute CEO calls for an international commitment to climate action through decolonisation. 20 April. Available at: <https://nacchocommunique.com/wp-content/uploads/2023/04/Media-Release-Lowitja-Institute-call-to-UN-for-climate-action-20.4.23.pdf>.
- Matthews, V., Atkinson, A.-R., Lee, G., Vine, K., & Longman, J. (2021). *Climate Change and Aboriginal and Torres Strait Islander Health: Discussion Paper*.
- Moggridge, B., Pecl, G., Lansbury, N., Creamer, S., & Mosby, V. (2022, March 4). IPCC reports still exclude Indigenous voices. Come join us at our sacred fires to find answers to climate change, <https://theconversation.com/ipcc-reports-still-exclude-indigenous-voices-come-join-us-at-our-sacred-fires-to-find-answers-to-climate-change-178045>. *TheConversation.com*.
- Moko-Painting, T. K., & McAllister, T. (2023, June 15). Indigenous knowledge is increasingly valued, but to fully respect it we need to decolonise science – here’s how. *The Conversation*. <https://theconversation.com/indigenous-knowledge-is-increasingly-valued-but-to-fully-respect-it-we-need-to-decolonise-science-heres-how-205097>.
- Morgan-Bulled, D., McNeair, B., Delaney, D., et al. (2021) National First Peoples Gathering on Climate Change: Workshop Report. In: *Earth Systems and Climate Change Hub Report No. 29*, 18 June 2021. Earth Systems Climate Change Hub. Available at: https://nеспclimate.com.au/wp-content/uploads/2021/10/National-First-Peoples-Gathering-on-Climate-Change-Report_final.pdf.
- Mosby, V. (2014) Take a walk: a critical reflection on data gathering in remote island communities. *Journal of Indigenous Social Development*, 3 (2). pp. 1-11.
- Mustonen, T., Harper, S., Pecl, G., et al. (2022) The Role of Indigenous Knowledge and Local Knowledge in Understanding and Adapting to Climate Change. In: *IPCC Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [H.-O. Pörtner, D.C. Roberts, M. Tignor, E.S. Poloczanska, K. Mintenbeck, A. Alegría, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem, B. Rama (eds.)]*. Cambridge University Press, Cambridge, UK and New York, NY, USA. unknown.
- National Constitutional Convention (2017) Uluru Statement from the Heart. In: *National Constitutional Convention*, 26 May 2017. Available at: https://www.referendumcouncil.org.au/sites/default/files/2017-05/Uluru_Statement_From_The_Heart_0.PDF.
- NESP (2021). 2021 First Nation Peoples Statement on Climate Change. [Infographic]. National Environmental Science Programme. Earth Systems and Climate Change. <https://nеспclimate.com.au/wp-content/uploads/2021/10/NFPGCC-Statement-on-Climate-Change.pdf>
- Newcomb, S. (1995). Perspectives: Healing, restoration, and rematriation. *News & Notes* (Spring/Summer): 3.
- Nunn, P.D., Reid, N.J. (2016) Aboriginal memories of inundation of the Australian coast dating from more than 7000 years ago. *Australian Geographer*. <https://doi.org/10.1080/00049182.2015.1077539>

Ogar, E., Pecl, G., Mustonen, T. (2020) Science Must Embrace Traditional and Indigenous Knowledge to Solve Our Biodiversity Crisis. *One Earth* 3(2). Elsevier: 162–165.

Parliament of Australia (n.d.) Inquiry into the UN Declaration on the Rights of Indigenous People. Available at: https://www.aph.gov.au/Parliamentary_Business/Committees/Joint/Aboriginal_and_Torres_Strait_Islander_Affairs/UNDRIP (accessed 25 June 2023).

Planetary Health Alliance (2023) *Policy Note: Rights and Knowledge of Indigenous Peoples and Planetary Health*. May. Available at: <https://planetaryhealthalliance.org/unpfii2023> (accessed 29 May 2023).

Rematriation. “Our Story”. Rematriation, <https://rematriation.com/our-story/> (accessed 18 July 2023).

Sorensen C, Murray V, Lemery J, Balbus J (2018) Climate change and women's health: Impacts and policy directions. *PLoS Med* 15(7): e1002603. <https://doi.org/10.1371/journal.pmed.1002603>

Southalan, J. and Fardin, J. (2019) Free, prior and informed consent: how and from whom? An Australian analogue. *Journal of Energy & Natural Resources Law* 37(4). Routledge: 365–388.

Special Rapporteur on the Rights of Indigenous Peoples (2017) *Impacts of climate change and climate finance on indigenous peoples' rights*. A/HRC/36/46, September. United Nations Human Rights Council. Available at: <https://www.refworld.org/pdfid/59c2720c4.pdf>.

Subsidiary Body for Scientific and Technological Advice (2023) Provisional agenda and annotations. In: *Fifty-eighth session*, 5 May 2023. United Nations Framework Convention on Climate Change. Available at: https://unfccc.int/sites/default/files/resource/sbsta2023_01_adv.pdf (accessed 29 May 2023).

Sultana, F. (2022). The unbearable heaviness of climate coloniality. *Political Geography*, 99. <https://doi.org/10.1016/j.polgeo.2022.102638>

The Paris Agreement. United Nations Framework Convention on Climate Change. (n.d.). Available at: <https://unfccc.int/process-and-meetings/the-paris-agreement>

UN News (2023) ‘Let us learn from Indigenous peoples’, UN chief declares. 17 April. Available at: <https://news.un.org/en/story/2023/04/1135732> (accessed 19 April 2023).

United Nations Economic and Social Council (2023) Indigenous determinants of health in the 2030 Agenda for Sustainable Development. In: *Permanent Forum on Indigenous Issues*, 31 January 2023. United Nations . Available at: <https://documents-dds-ny.un.org/doc/UNDOC/GEN/N23/029/12/PDF/N2302912.pdf?OpenElement>.

United Nations Educational, Scientific and Cultural Organization. (2008, March). *UN Declaration on the rights of indigenous peoples (UNDRIP)*. UNESCO. Available at: <https://en.unesco.org/indigenous-peoples/undrip>

van Bavel, B., Petrasek MacDonald, J., Sambo Dorough, D. (2022) Indigenous Knowledge Systems. In K. De Pryck (Ed.), *A Critical Assessment of the Intergovernmental Panel on Climate Change*. Cambridge University Press, pp. 116–125. <https://doi.org/10.1017/9781009082099.017>

Woodward, E., Hill, R., Harkness, P., et al. (2020) *Our Knowledge Our Way in caring for Country: Indigenous-led approaches to strengthening and sharing our knowledge for land and sea management*. Best Practice July. NAILSMA and CSIRO. Available at: <https://repository.oceanbestpractices.org/handle/11329/1633> (accessed 4 June 2023).

Yorta Yorta Nation Aboriginal Corporation. (n.d.). *Yorta Yorta Nation Aboriginal Corporation Community Page*. Available at: <https://yynac.com.au/community/yynac-official-documents/yynac-whole-of-country-plan-2021-2030/>