

8. CONCLUSIONS AND RECOMMENDATIONS

8.1 Introduction

The brief for this review required SGSEP to:

1. Scope Indigenous environmental and climate science research themes and questions through a desktop review, collating and synthesizing existing work on identifying themes/questions, and provide guidance on how to interpret the material provided. Sources should include but not be limited to existing NESP research hubs, Caring for Country/Working on Country/Healthy Country Plans, Indigenous Land Councils, Prescribed Body Corporates and Native Title Representative Bodies, CSIRO Indigenous Futures, and the PM&C Regional Network.
2. In regions where documented research themes have not been found online, consult with relevant representative and peak bodies to ascertain whether they are aware of any documented sources and how to access them. (Following discussions with the Department, SGSEP interpreted this to be a spatial gap analysis.)
3. Collate existing resources to support Indigenous collaboration in environmental research, for example template agreements, engagement protocols/principles and case studies. These resources should be drawn from but not be limited to existing NESP research hubs, Departmental line areas and other relevant organisations (e.g. AIATSIS).
4. Liaise with NESP Indigenous stakeholders about the draft findings using desktop methods, including 3-4 virtual meetings, emails and phone calls to seek feedback and comments. Prepare a consultation summary and list of parties who were consulted for inclusion in the Final Report.

The remainder of this Chapter is structured around those tasks, and includes our recommendations.

8.2 Task 1: Scoping Indigenous environmental and climate science research themes and questions

One of the tasks of this desk-top review was to scope Indigenous environmental and climate science research themes and questions by reviewing the work of the NESP Hubs and various other sources.

The Department's expectations with respect to ensuring effective integration of Indigenous aspirations and outcomes in the NESP were set out in the NESP IEPS Guidelines which acknowledge that all research undertaken, irrespective of its nature, will have some sort of impact on Indigenous Australians (DoE 2015a). The Department identified Indigenous engagement and participation in the NESP as a cross-cutting theme for all the Hubs in the development of their research priorities. Our analysis therefore examined the full scope of NESP Hub activities, including their Indigenous governance and engagement arrangements, their annual plans and annual reports, selected research projects that involved Indigenous people and Country, and engagement practices across the board.

However, our conclusions are subject to the following limitations and caveats:

- It was not a requirement of the NESP that the Hubs specifically identify Indigenous environmental or climate science research priorities. Our observations about what these research priorities may be, has been drawn from our analysis of the research projects that involved Indigenous people and Country, other activities undertaken by the NESP Hubs and from various other sources, including

selected Commonwealth agencies and departments and IPA management plans. (See **Chapters 3, 4 and 5** and **Appendices C to G and I.**)

- Most of the NESP Hub research projects that involved Indigenous peoples and their Country were not necessarily initiated by Indigenous peoples as a reflection of their priorities *per se*, but rather were initiated by other end-users or the research project arose from Hub or end-user priorities.
- The research for this brief was largely desk-top based and therefore cannot reflect Aboriginal and Torres Strait Islander peoples' voices about their environmental and climate science research themes and questions. Some feedback from Indigenous research stakeholders was elicited through the virtual consultation (see **Appendix A**) and this has been built into the analysis and conclusions that follow.
- NESP research in environmental and climate science with Indigenous peoples has provided many opportunities for cross-cultural integration of IK and western science, which aligns closely with Indigenous peoples' philosophy of 'two-way' learning between different cultures. 'Two-way' dialogues between researchers and TOs take time and effort to establish and requires an ongoing commitment based on mutual respect and trust. As Martin Parkinson (2017), the former Secretary of the Department of the Prime Minister and Cabinet observes, relationships of trust and good faith with the Indigenous peoples of Australia can take years to build and are often anchored in the commitment of a particular community and particular public servants. Parkinson goes on to note that the constant churn in public policy and programs presents opportunity costs impacting on the transfer of knowledge and capability from one generation of public servants to the next and that relationships risk becoming the collateral damage in a culture of constant change. In the case of the NESP Hubs, read 'researchers' instead of public servants. A process for recognising and maintaining the long established and trusted relationships between researchers and Indigenous peoples in the transition to NESP2 will avoid the loss of trust and good faith that have been established between Aboriginal and Torres Strait Islander peoples and NESP Hub research scientists.

As stated in the Executive Summary, our most significant finding is that Aboriginal and Torres Strait Islander peoples are more concerned about getting the processes for research right, rather than agreeing on a list of topics and priorities. Good engagement has to be built on the premise of mutual respect, cultural understanding, continuing trust and honest dialogue and that everyone has a mutual responsibility to engage, consult, achieve and communicate shared outcomes. Hence, issues of research process and approaches to working with Indigenous peoples and accessing their ecological or traditional knowledge are identified as matters of priority when working with Aboriginal and Torres Strait Islander peoples. The research shows that where the process is driven by genuine co-governance arrangements there are better prospects for integration of Indigenous Knowledge (IK) with Western science and better outcomes for the sustainability of social and ecological systems.

SGSEP recommends that:

1. **As part of the first phase of research planning for NESP2, a gathering of the proposed Indigenous Facilitation Network for NESP 2 be convened to assist in the identification of Indigenous research needs and interests within and across hubs and their missions, drawing on this report and the engagement resources (see Chapter 7 and Appendix M) as a starting point for meaningful conversations with Aboriginal and Torres Strait Islander peoples and communities across Australia.**
2. **The proposed Indigenous Facilitation Network to be established under NESP2 commence a series of conversations with Aboriginal and Torres Strait Islander peoples around Australia, and that the ESCC Hub's planned national gathering on climate change, delayed because of COVID-19 in the current NESP, be explored as one important opportunity to commence those conversations.**
3. **Care be taken in the transition to NESP2 to ensure that the long-term relationships and trust that have been established between Aboriginal and Torres Strait Islander peoples and NESP Hub research scientists, are not lost. SGSEP further recommends therefore that opportunities for**

maintaining long-established regional relationships with Aboriginal and Torres Strait Islander peoples and communities should be documented and valued in the assessment process for the new Hubs.

SGSEP found that the Indigenous peoples of Australia value land and water and all the life systems associated with them as integral to their life and well-being. Indigenous knowledge (IK) views life holistically and is applied to land management so all life is sustained for present and future generations. Western science tends to compartmentalise knowledge into separate components. Hence, Indigenous peoples' research priorities may or may not always align with those of Western science, and these differences should not be seen as conflicting priorities, but rather as different world-views worthy of equivalent respect, consistent with Article 8j of the *Convention on Biological Diversity* and Articles 3, 4, 5, 10, 11, 19, 25, 26, 27 of the *UN Declaration on the Rights of Indigenous Peoples*. The Caring for Country concept embodies a stewardship approach to land and sea management which is deeply embedded in Aboriginal and Torres Strait Islander culture.

SGSEP recommends that:

- 4. A significant proportion of the funds within each NESP Hub be quarantined for Indigenous conceived environmental and climate science research projects, to be designed, led, implemented and outputs communicated by Indigenous researchers. SGSEP suggests a minimum of 10 to 15 per cent of NESP funds over the life of NESP2, that the outcomes of the research assist Indigenous peoples to conserve and sustainably manage areas of high biodiversity and conservation value. SGSEP also suggests that the research from this pool of resources be oversighted by the proposed Indigenous Facilitation Network to be established under NESP2 and be guided and assisted by the relevant NESP Hub.**

SGSEP found that significant resources for Indigenous engagement in environmental and climate science research have been developed in close partnership with Aboriginal and Torres Strait Islander peoples by the Western Australian Marine Science Institution (WAMSI) as part of their Kimberley Marine Research Program (KMRP) (the *Collaborative Science on Kimberley Saltwater – A Guide for Researchers*, Lincoln et al 2017) and the NAER Hub (the *Our Knowledge Our Way in Caring for Country Best Practice Guidelines*, Woodward et al, 2020). These resources demonstrate that collaborative research (working 'two-ways') works best when both types of knowledge and culture are respected equally by each of the partners to the research task. These resources are invaluable because they have been prepared by Indigenous peoples and are specifically about how they want others to work with them in respectfully accessing and sharing their unique knowledges. While these two resources have particular relevance to specific TO groups and their land and sea Country, the authors of the two resources have said that the principles and frameworks embedded in them are replicable by other TO groups and custodians, subject to the free, prior and informed consent of the TOs and Custodians that prepared them.

SGSEP recommends that:

- 5. NESP2 encourage other TO organisations to develop similar engagement resources for research praxis in their regions, based on the principles and frameworks developed by KISSP/WAMSI for the *Collaborative Science on Kimberley Saltwater – A Guide for Researchers* and the NAER Hub for the *Our Knowledge Our Way in Caring for Country Best Practice Guidelines* (see Case Studies 9 and 10).**

In relation to the scope of Indigenous environmental and climate science research themes and questions, SGSEP has attempted to draw some broad conclusions about Indigenous environmental and climate science research themes and questions. These have been grouped to align with the four thematic hubs of NESP2. The following conclusions are subject to the caveat that these matters need to be discussed with Aboriginal and Torres Strait Islander peoples from around Australia in the very early stages of NESP2, as recommended above.

Resilient Landscapes

The Resilient Landscapes Hub will have discrete responsibility for applied research to support management of Australia's terrestrial and freshwater habitats, including bushfire recovery, feral animals and invasive species impacts, accessible science to assist land managers to create and maintain resilient, sustainable and productive landscapes, targeted biodiversity and taxonomy products to support efficient system monitoring, and environmental monitoring systems and decision support tools. The Resilient Landscapes Hub will also have responsibility for cross-hub coordination for the 'threatened and migratory species and ecological communities' functional mission to support policy development, program management and regulatory processes to protect Australia's environmental assets in terrestrial, Ramsar and marine environments (DAWE 2020a).⁵⁰

As discussed in Part 3.9.4 in **Chapter 3**, the NAER Hub has a long track record of engaging with Indigenous peoples in large research programs in northern Australia and has built on those long-term relationships. It has done so very effectively, culminating in the production of several valuable resources in collaboration with many TO groups across northern Australia, including for example, the *Our Knowledge. Our Way in Caring for Country* best practice guidelines, the *Country: multiple values, multiple benefits into the future research priorities for IPAs across northern Australia*, and the *Economic values of Indigenous Protected Areas across Northern Australia*, and the *Report on the National Indigenous Fire Knowledge and Fire Management Forum – Building Protocols from Practical Experiences*.

The Research Priorities for Indigenous Protected Areas project identifies five critical Indigenous research topics and questions that fit within the theme of understanding how to manage Country for multiple values and multiple benefits while supporting today's youth into the future:

1. New research models: What innovations and adaptations to environmental research models can enable Indigenous people to be central and gain greater benefit from current and new research?
2. Economic dimensions: What does Indigenous land management contribute when valued through economic approaches?
3. Knowledge brokering: How can both science and Indigenous knowledge be made more accessible and useful to Indigenous decision makers?
4. Sustainable enterprise: How can Indigenous caring for Country be made sustainable through models of planning, innovation, governance, and business that can be tailored to diverse contexts?
5. Frameworks responsive to new impacts: What participatory monitoring, participatory impact assessment methods, and institutional or tenure responses, enable protection of Country in response to new impacts e.g. new conservation and development proposals? (Hill *et al*, 2016:10; NAER, 2016b).

The greatest priority of Indigenous land managers is the development of new research models in which they are central, tailored to their diverse environmental, economic and social information needs with peer-to-peer Indigenous networking (NAER, 2016b).

Given the geospatial scope of the NAER Hub, it has been able to successfully collaborate with Indigenous peoples across northern Australia on a very diverse range of matters, including environmental and Indigenous cultural water needs for culturally important River systems; environmental and economic accounting for river waters, the links between Gulf rivers, coastal environments and food for migratory birds; managing savanna riparian zones; tools for assessing mangrove die-back in the Gulf; fish movement and sensitivity to contaminated mine water; waste and marine debris management in remote communities; lessons from Top-End fire management; defining metrics for feral animal management; invasive weed management; prioritising threatened species management; monitoring, mapping and safeguarding culturally important threatened species; developing eDNA methods for detecting Top-End animals; and the

⁵⁰ https://www.communitygrants.gov.au/sites/default/files/documents/04_2020/national-environment-science-program-resilient-landscapes-hub-research-scope_0.pdf

development of Healthy Country indicators for adaptive co-management. Most of these matters are of ongoing research interest for Indigenous people in the north, particularly access to tools to help them apply their knowledge to manage Country and building understanding of their customary uses of water and biological resources, both to maintain Country and culture and support social and economic well-being, and to enable better integration of Indigenous knowledge and laws with Australian laws and Western science as the basis for making informed land and water management decisions.

Rather than establishing an overarching Indigenous Reference Group, the NAER Hub appointed three Regional Coordinators to enable partnerships with regional communities on research planning, on-Country field activity and engagement (see **Case Study 5** in Part 3.8.4 of **Chapter 3**). This grounded approach enabled important two-way knowledge sharing and field training and partnerships with Indigenous land managers on Country.

Also as discussed in Part 3.9.4 in **Chapter 3**, the TSR Hub has collaborated with Indigenous peoples across Australia on a wide range of matters, including mitigating feral animal impacts on native animals; saving endangered species; contrasting outcomes of contemporary and traditional fire management approaches in different environments; improving conservation measures for threatened species; long-term monitoring of threatened species to try and unravel causes of decline and extinctions of threatened species; developing coordinated monitoring programs; optimising the design of a network of havens for vulnerable species; key factors for effective partner integration and governance for threatened species and developing national monitoring priorities for threatened species. Researchers from the TSR Hub have also played a key role in advising the Minister on threatened ecological communities and threatened species recovery following the 2019-20 bushfire season through membership of the Minister's Wildlife and threatened species bushfire recovery Expert Panel.⁵¹ The TSR Hub was also one of two Hubs to appoint an Indigenous Reference Group (IRG) to assist the Hub with better aligning its research with Indigenous Australians' strategic needs, identifying activities within the Hub which could advance Indigenous Australians' involvement in threatened species recovery and management, advice on how to value-add to projects by addressing Indigenous research needs, and advice on culturally appropriate formats for research outputs for Indigenous end-users and stakeholders.

SGSEP's review of selected Commonwealth agencies in **Chapter 4** and **Appendix H**, allowed for several recurring themes to be distilled from a review of the agencies and departments' activities. For the Resilient Landscapes Hub, these include:

- Collecting and collating baseline level of ecological data.
- Governance of social-ecological systems for sustainable ecosystem stewardship.
- Data and technology for monitoring of ecosystems and threatened species.
- Improving the recording and application of IK for land and sea management.
- Fire management: cultural landscape fire management versus adverse fire events.
- Managing threatened species and their habitats.
- Managing feral animals to reduce impacts in protected areas and to protect important cultural sites.
- Water resource planning and cultural flows.
- Documenting and quantifying Indigenous social and economic values of aquatic resources.

Consultations with Indigenous research stakeholders revealed that ongoing concerns about the lack of adequate protections around accessing and sharing of IK. In the absence of adequate legislative protections, there is a strong case for the adoption of protocols, such as the True Tracks principles and Framework developed by Janke (2019), as a minimum standard for the protection of IK in all its forms and for adopting the FAIR and CARE principles developed by GIDA as the basis for protecting the integrity of Indigenous data (discussed below). Stakeholders also pointed to the engagement expectations being placed on communities suggesting the level and nature of that engagement needs to be carefully monitored across Commonwealth

⁵¹ <http://www.environment.gov.au/biodiversity/bushfire-recovery/expert-panel>

agencies (and related programs) so as not to exhaust the capacity and goodwill of the Aboriginal and Torres Strait Islander peoples to continue sharing their IK for the benefit of all Australians.

The following Indigenous research themes and questions were aggregated from our analysis of the IPA (and other non-IPA) Management Plans relevant to the Resilient Landscapes Hub:

- Improving baseline biodiversity data; better understanding of the health of our Country.
- Understanding biodiversity, ecology of landscapes, ecosystem health; sustainable use of natural resources, identify external or environmental contributors to weed and feral animal populations.
- Wildlife and habitat monitoring, monitoring of current management practices, address gaps in knowledge for threatened species and species of special conservation significance.
- Breeding cycles of threatened species, arrest the potential extinction of threatened species, protection of vulnerable species, optimal habitats for threatened species.
- Impacts on threatened species (several species of plants, animals, birds and insects specifically mentioned).
- Long term health of water resources, the effects of reductions in water quality and availability on biota, ground water flows, habitat mapping, fill knowledge gaps about water places of cultural significance.
- Trends in old growth forests.
- Impacts of over grazing on native species, impact of introduced animals (pigs, buffalo, deer, camels).
- The impact of commercial activity such as fishing.
- The development of wildlife ranching and harvesting.
- Impact of invasive weeds.
- Understanding different fire regimes, impact or effect of wildfires, appropriate ecological burning regimes, long-term biological impacts of changed fire regimes on different land types including a lack of data on optimal fire mosaic scales for the enhancement of biodiversity values.

Marine and Coastal

The Marine and Coastal Hub will have discrete responsibility for delivering applied research to support management of Australia's marine and coastal environments including estuaries, coast, reefs, shelf and deep-water; targeted biodiversity and taxonomy products to support efficient system monitoring; and environmental monitoring systems and decision support tools. The Marine and Coastal Hub will also have responsibility for cross-hub coordination for the 'protected place management' functional mission to support the management of Australia's protected places and heritage including the national park estate and Ramsar sites in both marine and terrestrial environments (DAWE 2020a).⁵²

The MB Hub came from a position of minimal direct engagement with Indigenous peoples when it was first established. The MB Hub therefore sought to promote Indigenous engagement and participation in marine science research by convening a series of Indigenous engagement workshops at the Australian Marine Sciences Association's (AMSA) annual conferences over the last four years, as discussed in Part 3.6 above. This series of workshops resulted in an increased and increasing level of awareness about engagement with Indigenous people in marine science research and resulted in genuine engagement. The MB Hub also focussed its efforts on Matters of National Environmental Significance under the EPBC Act (i.e. listed species, communities and world heritage areas) and protected places (Australian Marine Parks), finding that many of the listed species and communities accorded this formal significance are also of great importance to Indigenous peoples. The marine research interests identified by Indigenous people reflect the powerful obligations they accept as custodians of sea Country and the lifeforms and ancestors depending on their management of sea Country. Research is continuing with a number of specific species and communities of interest to Indigenous peoples, including ongoing research with Indigenous knowledge of culturally

⁵² https://www.communitygrants.gov.au/sites/default/files/documents/04_2020/national-environment-science-program-marine-coastal-hub-research-scope_0.pdf

important marine species (and habitat) shark species, Indigenous knowledge for culturally important habitat recovery and the cultural Importance and use of sea snakes.

In relation to the GBR, one of the seven natural wonders of the World, the TOs aspirations and expectations about the management of the Reef and its environs and their research themes and questions could not be clearer. The report titled '*Traditional Owners of the Great Barrier Reef: The Next Generation of Reef 2050 Actions*' (The Report) (CofA, 2018) makes the following points very clear. While significant progress has been made with respect to some matters (catchment and marine land and sea rights and some outstanding examples of productive partnerships) there is no lasting, continuously improving GBR-wide approach to empowering TOs in the governance of the GBR. With the future health of the GBR under serious threat from climate change and other stresses, it is now critical to harness the capacity of TOs and their Sea Country institutions for a new generation of reef protection and management into the future (CofA, 2018).

The Report makes clear that the TOs want to be more actively involved in research partnerships to address key Indigenous knowledge gaps, but the varying levels of capacity among TO Groups along the GBR is hampering their ability to be more involved than they already are and their ability to deliver on all of the TO and other actions in the Reef 2050 Plan. The Report also notes that Traditional knowledge capture and sharing will facilitate partnerships with Western science, increase traditional knowledge involvement in planning and policies and most importantly protect and retain the knowledge for future generations. To this end, the TOs have indicated their support for the development of a safe and secure information storage and retrieval system relating to their cultural heritage and traditional knowledge, with the relevant controls regarding access and use of that knowledge.

SGSEP reiterates that TOs on the GBR want a lasting, continuously improving GBR-wide approach to governance of the GBR. Establishing a coalition of TO groups along the entire length of the Reef similar to that of NAILSMA across northern Australia, would be a step in the right direction. Such an entity would foster better collaboration and capacity amongst TO groups and the integration of IK with western science in the overall management of the Reef. It would also provide a place where IK can be collected, collated and accessed with the free, prior and informed consent of the people that hold that knowledge as part of their cultural law and practice.

As discussed in Part 3.4.9 in **Chapter 3**, the TWQ Hub has also been able to build on long-standing collaborations with Indigenous peoples, particularly in Queensland along the Great Barrier Reef and other parts of Northern Australia, with the TWQ Hub playing a significant role in developing and applying the Three Category Approach to Indigenous Engagement. **Thematically, the research priorities that the TWQ Hub has been able to collaborate with Indigenous peoples on, includes further research on the crown of thorns invasive species; best practice approaches to restoration of the GBR; improving coral conditions in the GBR through better resilience-based management practices; better management of estuarine environments flowing into the GBR; assessment of key Turtle and Dugong seagrass resources in the northern Torres Strait; water quality and ecosystem health threats in the Torres Strait; and capacity building and increased participation in sea Country management.** The TWQ's research on TOs and Sea Country in the Southern Great Barrier Reef was used to further define Indigenous aspirations in the Reef 2050 Plan, and the research on Ecosystem Services in the Eastern cape York Peninsula has proved invaluable in terms of holistic approaches to environmental management in tropical waters.

The following Indigenous research themes and questions were aggregated from our analysis of the IPA (and other non-IPA) Management Plans relevant to the Marine and Coastal Hub:

- Indigenous archaeological values of marine areas, better understanding of cultural and ecological values of sea Country; specific research strategies for the cultural, ecological and social values in marine parks.
- Strategies for monitoring turtle populations in key locations; marine environment surveys, and detailed beach cay, reef platform mapping to better understand sea level rises and tidal surges and to detect and monitor cay migration.
- Mapping sea currents, temperature, and oceanography.

- Impacts of key threatening processes (including seabed mining, visitor access and climate change), threat monitoring in protected areas, strategies for managing weeds, pest species and marine debris.
- Health of our marine turtles, dugongs nesting turtles, and benthic habitats and other food species and culturally important species.
- Improve knowledge and understanding of humpback whales, other important ecological values, cultural heritage and human use in the marine park.
- Defining condition, pressure and response indicators and metrics (i.e. performance measures) to support the monitoring program, establishing baselines for marine park values, addressing knowledge gaps for values identified as key performance indicators, integrating traditional knowledge with contemporary science programs, where appropriate, examining how tidal amplitude influences the distribution and movement patterns of marine species.
- Establish a database to store all monitoring activities.

SGSEP's review of selected Commonwealth agencies in **Chapter 4** and **Appendix H**, reveals that while agencies have supported Indigenous involvement in coastal and marine management activities, Aboriginal and Torres Strait Islander peoples want to be acknowledged as custodians and marine managers of coastal and marine resources and they want to increase the level of their involvement in coastal and marine research. Aboriginal and Torres Strait Islander people have an in-depth knowledge and understanding of coastal and marine systems that stretches back at least 60,000 years and while there is growing recognition of the value of this knowledge base and its integration with western science, they are concerned about how their IK is being applied without their free, prior and informed consent.

Aboriginal and Torres Strait Islander peoples have expressed the need for better data collection, particularly in relation to Indigenous use and rights, non-commercial activities and other social and economic attributes, but they are very concerned about how this information may be utilised without their prior knowledge and consent. This is a consistent theme across many environmental and climate science research themes, not just coastal and marine matters. The review allowed for several recurring Indigenous research themes and questions to be distilled from a review of the agencies and departments' activities. For the Marine and Coastal Hub, these include:

- Water quality and ecosystem health threats to the Torres Strait from Fly River runoff.
- Research about species vulnerable to climate change (e.g. corals, fishes, crayfish, marine turtles, dugongs, seagrasses, pelagic foragers) to optimise the effectiveness of resilience-based management.
- Improving estimates of abundance and distribution of turtle and dugong in the Torres Strait.
- Cumulative impacts on marine and coastal ecosystems and their resilience to recovery under climate change.
- Improving the recording and application of TEK for land and sea management.
- Collecting and collating baseline level of ecological data.
- Data and technology for monitoring of ecosystems and threatened species.

Sustainable Communities and Waste

The Sustainable Communities and Waste Hub will have discrete responsibility for delivering research that supports targeted information and management tools to reduce the impact of plastic and other material on the environment; applied scenario modelling to support sustainable people-environment interactions in communities including urban heat island impacts and liveability analysis; effective and efficient management options for hazardous waste, substances and pollutants throughout their lifecycle to minimise environmental and human health impacts; and maintained and improved air quality. The Sustainable Communities and Waste Hub will also have responsibility for cross-hub coordination for the 'waste impact management'

functional mission to support decision maker policy development, program management and regulatory processes in both marine and terrestrial environments (DAWE 2020a).⁵³

As discussed in **Chapter 3**, the CAUL Hub is one of two Hubs that established an Indigenous Advisory Group, whose role is to oversight the CAUL Hub's Indigenous engagement, collaboration and participation practices, especially in relation to urban locations. Under the guidance of its Indigenous Advisory Group, the CAUL Hub has worked hard to develop a cross-cultural and cross discipline approach to Caring for Country in cities, by posing the question: 'Given thousands of years of Caring for Country in places we now call cities, how can city decisions better include Traditional Custodians, Indigenous knowledge and cultures in future city planning?'

The CAUL Hub's research reinforces the fact that Australia has been slow to recognise the history and continuity of Aboriginal and Torres Strait Islander peoples' custodial responsibilities as custodians or rights holders under State/Territory statutory land rights and/or cultural heritage schemes (Wensing, 2016). The CAUL Hub's research also highlights the disconnect between urban researchers, urban land managers and Indigenous Australians, and the need to make space for Indigenous-led research on biodiversity in urban environments. **The most significant knowledge gaps are the need for mechanisms to improve Indigenous participation in urban decision-making processes, particularly in relation to publicly owned lands where Indigenous rights and interests and cultural heritage are more likely to exist and building the cultural competency of urban researchers and practitioners to work with Aboriginal and Torres Strait Islander peoples.**

The CAUL Hub's research has focussed on how Indigenous values, perspectives and methodologies are able to drive environmental and climate science research in both urban and non-urban settings. The CAUL Hub found that urban practitioners and researchers need to better understand and engage in meaningful dialogue on the expectations, rights and aspirations of Indigenous communities in urban areas. Moving beyond a model of 'inclusion' of Indigenous people in research and teaching, especially within an urban context, toward genuine involvement in decision making about urban environments. The research has also identified that **further work is required on developing better models for enabling Indigenous communities to define and direct research that is of importance and value to them in urban areas.**

The CAUL Hub has applied the concept of Caring for Country in an urban context in both Melbourne and Perth as a new and innovative way of interacting with nature and managing its resources for economic, social and cultural prosperity. The CAUL Hub's research has resulted in a synthesis of Indigenous perspectives about urban planning and urban greening. In particular, introducing greater levels of Indigenous input and active engagement in managing urban public green and blue spaces in urban environments, reversing the trend of species loss, restoring ecological function and ecosystem services and reconnecting people with traditional Aboriginal knowledge in urban environments. And for the Noongar people in WA, increased understanding of Indigenous values and perspectives in urban planning and urban greening in the Perth Area.

The NAER and TWQ Hubs have undertaken targeted research on specific management issues related to waste and debris in remote locations. This includes the issue of ocean rubbish and debris washing up on Australia's northern coastline and the management of hard waste in remote locations such as Cape York and the Gulf of Carpentaria. These impacts are likely to affect remote Aboriginal communities around Australia (and not only coastal locations) who, because of distance, have limited access to infrastructure and resources to manage the waste stream and implement recycling in their communities. This is an issue of ongoing concern for Indigenous people in remote communities and for future research in this Hub.

No IPA Management Plans identified research subjects or priorities that could potentially fall within the new Sustainable Communities and Waste Research Hub.

⁵³ https://www.communitygrants.gov.au/sites/default/files/documents/04_2020/national-environment-science-program-sustainable-communities-waste-hub-research-scope.pdf

SGSEP's review of selected Commonwealth agencies in **Chapter 4** and **Appendix H**, highlighted the special needs of Indigenous communities for remote waste solutions and suggests that the cultural knowledge of Aboriginal and Torres Strait Islander peoples living in cities and towns need to be recognised in liveability and place management policy in both urban and regional environments. For the Sustainable Communities and Waste Hub, a stronger relationship with the Department of Infrastructure, Transport, Regional Development and Communications will be necessary for Indigenous peoples' environmental and climate science research needs to be integrated into the Commonwealth's Cities and regional development agendas.

SGSEP's review allowed for the following Indigenous Research themes and questions to be distilled from a review of DAWE's policy activities. For the Sustainable Communities and Waste Hub, these include:

- Improving regional, remote and Indigenous communities' ability to access, influence and participate in a circular economy.
- Reducing the impacts of plastic and packaging on the environment and oceans, reducing plastic pollution, and maximising benefits to the local economy and to society.

Climate Systems

The Climate Systems Hub will have discrete responsibility for Earth system science and modelling; advancing Australia's understanding of climate variability, extremes and associated drivers (including of events such as bushfires, droughts and high rainfall events); and for developing tools and information to manage Australia's emerging risks and opportunities. The Climate Systems Hub will also have responsibility for cross-hub coordination for the 'climate adaptation' functional mission to support climate information to program hubs to drive integrated adaptation research across the program to support evidence-based decision-making and improve Australia's climate resilience (DAWE 2020a).⁵⁴

One of the recurring topics to emerge from this review of NESP research projects and conversations with stakeholders, especially Indigenous stakeholders, is the impacts of changes to Australia's climate systems on the environment.

As discussed in **Chapter 3**, the ESCC Hub held the second national Indigenous Dialogue on climate change on Yorta Yorta Country in 2018. Attended by more than 50 Traditional Owners from across Australia they conversed on climate change, sharing their observations, talking about their priorities and exploring opportunities to improve knowledge of climate change and its risks for people and Country. The event was a two-way dialogue between researchers and Traditional Owners working on climate change. Significantly, the key outcome from the Dialogue was a statement from Traditional Owners (see **Figure 3.2**) stating that they have always understood and adapted with Country, and through their cultural practices, interpreted the change. The Yorta Yorta People agreed to host the second summit because they wanted mainstream Australia to understand what is happening and that all Australians must work together 'as we only share one planet one life' (Morgan *et al*, 2019:8).

The report of the Dialogue makes the point that Western science has only been able to monitor weather and climate systems for a few hundred years, whereas Indigenous peoples all over the World, but especially in Australia, have been monitoring climate systems for tens of thousands of years, including changes due to ice ages. 'First Nations peoples are the only continuous civilisation that has lived through the ice ages, and the stories of this lived experience can contribute critically important information to Western science' and 'In partnering with First Nations people we can better understand how climate has influenced their nations and country and how it is likely to be affected in the future.' (David Karoly, in Morgan *et al*, 2019:18)

The 2018 National Dialogue was one of the most significant national gatherings of Indigenous peoples on climate science research priorities and which also highlighted the importance of an ongoing dialogue and made clear that First Peoples want to set their own agenda on climate knowledge and action. **Several**

⁵⁴ https://www.communitygrants.gov.au/sites/default/files/documents/04_2020/national-environment-science-program-climate-systems-hub-research-scope.pdf

research priorities were identified, including bio cultural renewal; monitoring of seasonal indicators; impact on water cycles/flows; water rights and access; impacts of resource extraction; governance and institutional responses; cumulative impacts and many others; the need to weave Indigenous climate knowledge into climate science modelling across Australia.

The 2018 National Dialogue generated a strong response among Aboriginal people and communities from across Australia and a growing interest in being involved in the next national dialogue and translating the outcomes into policies and actions, especially in relation to managing their ancestral Country. **As recommended above, ESCC hub's planned national gathering on climate change provides a unique and important opportunity to commence conversations with Aboriginal and Torres Strait Islander people about their environmental and climate science research themes and questions.** Planning has commenced for the next national dialogue which will likely be held in early 2021, given the impact of the COVID-19 pandemic.

The ESCC Hub also facilitated the first ever Indigenous session at the annual Australian Meteorological and Oceanographic Society (AMOS) conference in Darwin in 2019, where TOs were invited to present on their perspective of climate change and risks to their country, as well as community led solutions contributing to climate change mitigation while generating income for communities. This event prompted a follow-up workshop at the AMOS Conference in Fremantle in March 2020, where TOs and researchers were able to share experiences and advice for successful collaboration on climate-change-related projects. Several important considerations were identified, including:

- Understanding that there are many peoples and many cultures;
- Including Traditional Owners from the start (and all the way through);
- Building (and being prepared to maintain) trusted relationships;
- Appreciating different timelines;
- Ensuring free, prior and informed consent;
- Respecting the provision and ownership of traditional knowledge;
- Identifying benefits to country and community;
- Ensuring you are giving as well as taking; and
- Remembering that connection to country is forever.⁵⁵

The following Indigenous research themes and questions were aggregated from our analysis of the IPA (and other non-IPA) Management Plans, relevant to the Climate Change Hub:

- Better understand the likely impact of climate change.
- Better manage the impacts of climate change.
- Investigating potential impacts of climate change on terrestrial biodiversity.
- Improving knowledge about potential impacts of climate change on wetland communities in the IPA and about future management actions that might be required.
- Feasibility studies exploring the science and viability of carbon abatement programs and methodologies.
- Action-based research and analysis relating to Indigenous knowledge transmission to expected environmental degradation and other effects due to climatic changes.

Also arising from our analysis, the accumulating impacts of climate change was identified as a key threat and many IPA managers identified the need for more research in this area.

SGSEP's review of selected Commonwealth agencies in **Chapter 4** and **Appendix H**, allowed for several recurring themes to be distilled from a review of the agencies and departments' activities. For the Climate Systems Hub, these include:

- Impacts of climate systems/change on the environment, industries and communities in the Murray Darling Basin with a focus on four key actions to respond to the risks and prepare for impacts.
- Mapping of Indigenous weather, season and related biological knowledge.

⁵⁵ <http://nesplclimate.com.au/co-design-cross-cultural-communication-and-climate-change/>

- Knowledge brokering for managing landscapes in a time of climate change, including the need for interdisciplinary science to address the extreme events, such as severe cyclones and harsh heat-waves.

8.3 Task 2: Indigenous Research gap analysis

In order to ascertain where Indigenous environmental and climate science research themes and questions have not been documented (and not found online or by other means), it was first necessary to identify where Indigenous environmental and climate science research projects have taken place. It is important to understand, as we articulate in Part 5.3 of **Chapter 5**, that it was not possible, given time and budget constraints, to examine the hundreds of research projects that the NESP Hubs have undertaken over the life of NESP, nor was it possible to geographically map them all. We therefore focussed on 108 projects that we selected or were guided to by the NESP Hubs on the basis of having a high level of Indigenous involvement and engagement. The following conclusions are drawn from our analysis in **Chapters 3, 5 and 6** and **Appendices D, F, G, I and J**.

From the spatial analysis in **Chapter 5** and **Appendix J**, SGSEP draws the following broad conclusions:

- There has been more research conducted in the north of Australia, and considerable gaps in the southern parts of Australia. This is due in part to the fact that two of the NESP Hubs are specifically focussed on Northern Australia where explicit research priorities about Indigenous engagement and partnership have driven this focus. Notwithstanding, there are considerable gaps in several jurisdictions (i.e. SA, Tas, Vic, ACT) where research with Indigenous peoples has not been undertaken. The environmental and climate science research needs of the Indigenous peoples in the southern portions of Australia requires further investigation, both terrestrial and marine.
- SGSEP found that there are very few NESP Hub research projects with high levels of Indigenous engagement in many of the bioregions that are under-represented in the NRS. While there is some correlation between the NESP Hubs' research projects and the IMCRA and IBRA regions, it would be helpful to have a better understanding of Indigenous peoples' environmental and climate science research needs and particularly how their cultural knowledge may add value to the IMCRA, the IBRA and the NRS, especially in areas that are not able to be dedicated as IPAs.
- The Indigenous estate is broadly defined to include land owned, managed or controlled by Aboriginal and Torres Strait Islander peoples and to which they have use and rights that protect their special values. It covers about 33 per cent of the land mass of Australia and is continuing to increase in size, and much of it with high biodiversity conservation values. While there is some correlation between NESP Hub research projects and the Indigenous estate, there is considerable scope for improving the alignment between the Indigenous estate and the environmental and climate science research needs of the Indigenous land owners and/or managers. SGSEP hastens to add that this is an area where further investigation is required in consultation with the Indigenous people and entities that have interests in land to ascertain with greater clarity what their environmental and climate science research themes and questions may be.
- There is also scope for better alignment between NRM activities involving regional Indigenous communities funded under the NLP and Aboriginal and Torres Strait Islander peoples land owners and/or managers in the Indigenous estate as that may assist with yielding more information about Indigenous environmental and climate science research needs, especially with respect to biodiversity threats, ecological systems and land management practices.

On the basis of this spatial analysis therefore, some states that have no or very few research projects with an Indigenous focus, some marine parks in the southern and eastern parts of Australia have very few or no research projects with an Indigenous focus, and many bioregions (particularly those that are under-represented in the NRS) have no research projects with an Indigenous focus. **More detailed regional gap analysis should be progressed in consultation with Aboriginal and Torres Strait Islander people and communities about their research needs and priorities across Australia.**

SGSEP recommends that:

- 6. Stronger correlations be made between the various geo-spatial thematic layers of information about Australia's terrestrial and marine environments held by DAWE (such as the IMCRA, the IBRA, the NRS, the IPAs, and the Indigenous estate) with the identification of Indigenous environmental and climate science research needs, as such correlations will provide useful guidance on setting research priorities for NESP2 and beyond.**

As discussed in **Chapter 6**, SGSEP also undertook an analysis of the IPA Management Plans across Australia to see whether they identify any environmental and climate science research themes and questions. While considerable research has been undertaken by the NESP Hubs and others on matters pertaining to the management of IPAs and their underlying values, this kind of analysis of the full suite of IPA Management Plans has never been undertaken before. SGSEP found that many of the management plans raise issues around the protection of IK and many of them identify broad and specific environmental and climate science research themes and questions.

SGSEP also found that many of the management plans are out of date and due for renewal. While SGSEP supports the findings of the NAER Hub's work on identifying the research priorities of the IPAs across northern Australia (Hill *et al*, 2016), we also conclude that 25 years on from the first IPA, it is time to revisit key aspects of the program with a view to scaling up the management support, scaling up the level of protection and that, where requested by TOs, better policy and legal options be explored for enabling native title holders to leverage their native title rights and interests over IPAs to undertake their management activities consistent with or as part of their native title rights and interests. Furthermore, we note that the current management arrangements for the of the IPA Program and Indigenous Ranger Program away from the Australian Government's environment functions are a detraction from the wider intent and benefits of the programs as being integral to Australia achieving its biodiversity conservation and environmental management outcomes. Australia's 76 IPAs comprise over 44 per cent of the NRS and once the 12 IPA Consultation Sites are dedicated, they will add over 30 million hectares to the NRS and increase the size of the NRS by almost 20 per cent.

SGSEP recommends that:

- 7. Building on Recommendation 6. A meta-analysis of IPAs and their management plans be undertaken to ascertain a better understanding of their value to the IBRA and IMCRA, the threats they face with the identification of Indigenous environmental and climate science research needs of the IPA managers and/or TOs. As part of this analysis, SGSEP also recommends that:**
 - Efforts to scale up management support be explored, including to undertake regular updates or reviews of IPA management plans;
 - Options for scaling up the level of protection for IPAs from external threats be explored;
 - Better policy and legal options be explored for enabling native title holders to leverage their native title rights and interests over IPAs to undertake their management activities consistent with, or as part of, their native title rights and interests; and that
 - Functional and administrative responsibility for the IPA Program and Indigenous Ranger Program should be returned to DAWE so the Programs can be re-integrated into the Department's biodiversity conservation and environmental policy and management responsibilities and to improve alignment between NESP research and IPA management.

8.4 Task 3: Resources supporting Indigenous engagement

SGSEP located and examined several international and domestic Indigenous engagement resources and categorised them on the basis of whether the NESP Hubs and their researchers 'Must Conform' with them, whether they are 'Highly Applicable', 'Moderately Applicable' or of 'General Relevance' in relation to Indigenous engagement in environmental and climate science research. SGSEP categorised 17 resources as

‘Must Conform’, and a further 15 resources as ‘Highly Applicable’ to environmental and climate science research involving Indigenous peoples. (See **Chapter 7** and **Appendix M**)

In Australia, any research involving humans is governed by a set of ethical principles to ensure research is safe, respectful, responsible, high quality, and of benefit to research. All research involving Aboriginal and Torres Strait Islander peoples must conform with the ethical research framework comprising the:

- National Statement on Ethical Conduct in Human Research (the National Statement) (NHMRC *et al*, 2018a);
- Australian Code for the Responsible Conduct of Research (the Code of Conduct) (NHMRC *et al*, 2018b); and the
- AIATSIS Guidelines for Ethical Research in Australian Indigenous Studies (GERAIS) (AIATSIS, 2012).

The AIATSIS GERAIS is currently being reviewed with a view to it being upgraded to a Code of Ethics (AIATSIS, 2019a). These three documents form the broader context of the overall governance of human research ethics in Australia and there is no question therefore that the new Hubs under NESP2 must conform with them.

At the international level, there are three resources that SGSEP also categorised as ‘Must Conform’. Australia is a signatory to the *Convention on Biological Diversity* and has also endorsed the United Nations *Declaration on the Rights of Indigenous Peoples* (UNDRIP). Article 8(j) of the CBD commits Convention Parties to respect, preserve, maintain and promote the wider use of traditional knowledge with the approval and involvement of the users of such knowledge, and Australia’s *Biodiversity Conservation Strategy 2010-2030* (NRMCC, 2010) arises from Australia being a signatory to the CBD and commits Australia to increased Indigenous engagement in biodiversity conservation and respecting the culture, values, innovations, practices and knowledge of Indigenous peoples. As discussed in **Chapter 7**, the Convention’s guidelines with respect to genetic resources must be adhered to if environmental or climate science research involves the utilisation of genetic resources. There is no question as to the requirement to conform with the Bonn Guidelines and the Nagoya Protocol in such circumstances.

While the UNDRIP is not binding in Australian law, Australia has endorsed it and as a Declaration of the General Assembly of the United Nations it is considered to be universally applicable (Amnesty International Canada, 2012). The UNDRIP also reflects the needs and aspirations of Indigenous peoples and expresses rights, and by doing so, explains how Indigenous peoples want nation states (and others) to conduct themselves about matters that may affect their rights and interests (Wensing, 2019). As stated elsewhere in this report, the NESP Hubs and various Commonwealth agencies and departments make frequent references to the UNDRIP, especially in relation to their engagement activities with Indigenous peoples, and especially the principle of free, prior and informed consent. However, our consultations with various stakeholders revealed concerns about the lack of application of the principle or misunderstanding of how it should be applied.

The Australian Human Rights Commission has issued a community guide to UNDRIP, which sets out how the principle of free, prior and informed consent applies in practice (AHRC, 2010:25) (**Figure 8.1**).

The four elements of the principle are interlinked and should not be treated separately (FAO, 2016:5). The FAO’s good practice guide on the concept of free, prior and informed consent states that:

‘...consent should be sought before any project, plan or action takes place (prior), it should be independently decided upon (free) and based on accurate, timely and sufficient information provided in a culturally appropriate way (informed) for it to be considered a valid result or outcome of a collective decision making process’ (FAO, 2016:15).

The principle applies to research activities, as much as it applies to the formation of public policy and legislation. The principle raises the level of engagement with Aboriginal and Torres Strait Islander people by switching the relationship from consultation to consent and provides a safeguard to Aboriginal peoples’ full

participation in decisions affecting their rights and interests (Nosek, 2017:119, 124). Applying these principles consistently creates a process whereby research institutions and researchers and Aboriginal and Torres Strait Islander peoples can talk to each other on an equal footing and come to a solution or agreement that all parties can accept (UNHRC, 2009: Paras 36-57).

SGSEP concludes therefore that it is in Australia's wider and long-term interests to make better use of Indigenous knowledge about Australia's environment with the free, prior and informed consent of the knowledge holders, if we as a nation are to prosper, not only environmentally, but also socially, culturally and economically.

What does free, prior and informed consent mean?

When making policies, laws or undertaking activities that affect our peoples, governments and others should negotiate with us with the aim of obtaining our consent.

This is much stronger than an obligation to just provide information or 'consult'. Governments and companies should not impose their position onto our peoples, without first taking our rights into consideration.

The following outlines free, prior and informed consent:

Free means no force, bullying or pressure.

Prior means that Indigenous peoples have been consulted before the activity begins.

Informed means Indigenous peoples are given all of the available information and informed when that information changes or when there is new information. If Indigenous peoples don't understand this information then they have not been informed. An interpreter or other person might need to be provided to assist.

Consent means Indigenous peoples must be consulted and participate in an honest and open process of negotiation that ensures:

- all parties are equal, neither having more power or strength;
- Indigenous peoples' group decision-making processes are allowed to operate; and
- Indigenous peoples' right to choose how they want to live and their world views are respected

This creates a process where governments or companies and our peoples can talk to each other on an equal footing and come to a solution or agreement that all parties can accept. This also means that Aboriginal and Torres Strait Islander peoples re to be involved in the design, development, implementation, monitoring and evaluation of all programs, policies and legislation that affects us.

The greater the impact and damage that a decision or project will have on our peoples' lives, cultural integrity and country, the greater the need to reach an outcome that we can agree to. If an action is a direct threat to our survival or cultural integrity then we should be entitled to say 'no' to that action.

Source: AHRC, 2010:25.

Figure 8.1: The principle of Free, Prior and Informed Consent

Sources: AHRC, 2010:25; WGIP, 2005, para 56.

SGSEP recommends that:

- 8. The principle of free, prior and informed consent be applied to all research activities by the NESP Hubs that involve Aboriginal and Torres Strait Islander peoples, without exception, and that relevant KPIs be developed that require the NESP Hubs to report regularly on their performance with its application.**

SGSEP also found that research in environmental and climate science with Indigenous peoples provides significant opportunities for cross-cultural integration of IK and western science, which aligns closely with Indigenous peoples' philosophy of 'two-way' learning between different cultures. The research concluded that where the process is driven by Indigenous governance or co-governance arrangements, there are better prospects for integration of IK and Western science and better outcomes for the sustainability of social-ecological systems (Hill *et al*, 2012:23). The key to success with co-design and co-production of environmental and climate science research is paying greater attention to Indigenous methods for ensuring the integrity of IK and respecting the fact that IK and Western science each have their own value to contribute to caring for Country and the environment (Hill *et al* 2012:32; Weir, 2009:116).

In our assessment of the selected 108 NESP Hub projects, we found that not many of them were initiated by Indigenous people, but were rather initiated by the NESP Hub or other end users. We also found that the projects initiated, designed, led and executed by Indigenous people were very successful, not only because the research benefited the Indigenous people concerned, but because the research also successfully integrated IK and Western science.

SGSEP sought to examine written agreements that the NESP Hubs used to formalise the arrangements between them and the Indigenous peoples they engaged with in their research activities, but we were not provided with sufficient quantity of such agreements to come to any definitive conclusions about their merits or otherwise. Two of the NESP Hubs have developed specific protocols for engagement in their respective research fields (the TSR and ESCC hubs). SGSEP found that the World Intellectual Property Organisation and IP Australia regard protocols as being more suitable in situations where there may not be a need for more formal agreements because they can be more context driven. However, our consultations with stakeholders revealed significant concerns about lack of clear dispute resolution processes in the event of a breakdown in relationships between the parties, and lack of clear protection for IK.

And as the CSIRO's Chief Executive, Larry Marshall, notes:

The [Our Knowledge Our Way caring for Country] Guidelines critically remind us that in order to achieve best practice in land and sea management, partners must work together across diverse knowledge systems in the right way: with understanding and respect for local values and governance, cultural protocols and Indigenous cultural and intellectual property. (Woodward et al, 2017:ix).

SGSEP recommends that:

- 9. Formal protocols be negotiated between the NESP Hubs, researchers and the Indigenous peoples and communities from the very outset of research engagements involving Indigenous peoples, and that such protocols include sufficient provisions for dispute resolution and alternative dispute resolution, and sufficient provision for the ongoing protection of IK (as discussed below).**

SGSEP also reviewed the levels of protection available to IK (in all its forms). While several reviews over recent years have recommended a *sui generis* approach to ICIP law reform to better protect ICIP generally, there are no such plans on the horizon. Indeed, a recent Discussion Paper issued by IP Australia noted there is no single solution to solve the issues raised, and suggests a package of options in order to recognise Indigenous Knowledge rights, including many measures that can be practically achieved with ease, as well as others that require deeper consultation and legislative change (Janke and Sentina, 2018:117).

While SGSEP did not examine the issues of lack of protection for IK with the NESP Hubs *per se*, on the basis of the literature and recent reports we examined, SGSEP concludes there is a case for including better protections for IK in all its forms in the next iteration of the NESP. This can be achieved very simply by requiring the NESP hubs to apply the True Tracks Principles and Framework developed by Terri Janke and Company to develop individually tailored protocols for each research project, where appropriate, and by including specific performance indicators and regular reporting requirements in the NESP Hubs annual plans and reports on matters relating to the protection of IK.

SGSEP recommends that:

10. **Building on Recommendation 9. The True Tracks Principles and Framework developed by Terri Janke and Company be adopted as the minimum standard for protocols between the NESP Hubs and Indigenous peoples for the protection of IK in all their forms. The protocols must also include dispute resolution processes, including provisions for the appointment of an independent mediator.**
11. **Key performance indicators be developed (in consultation with Terri Janke and Company) for the NESP Hubs on the measures put in place for the ongoing protection and integrity of IK, including the application of the True Tracks Principles and Framework, as part of their annual plan and reporting requirements.**

SGSEP also found a new global network has been established to progress International Indigenous data sovereignty and Indigenous data governance. The Global Indigenous Data Alliance (GIDA) has been established between researchers, data practitioners and policy activists. GIDA has developed a motto of 'be FAIR and CARE' about Indigenous data, and are advocating for metadata tagging, provenance and disclosure statements detailing the origin of data, collective consent and data availability, and TK and Biocultural labels as a way of raising awareness of the cultural significance of data, and express restrictions and expectations around the access and use of data by non-community users. SGSEP anticipates the work of GIDA will gain momentum over time.

SGSEP recommends that:

12. **The NESP Hubs be made aware of Global Indigenous Data Alliance (GIDA) and its objectives with respect to Indigenous data, and the NESP Hubs take account of GIDA's FAIR and CARE principles relating to Indigenous data, especially in relation to access and use of Indigenous data by non-Indigenous users.**

8.5 Task 4: NESP Hub Performance and Consultation Outcomes

SGSEP was able to undertake a small number of consultations with key stakeholders, including some members of the Minister's IAC, on our preliminary findings. Throughout the course of the review, SGSEP held several consultation meetings with NESP Hub Knowledge brokers, researchers, Commonwealth agency staff and various stakeholders, and these consultations yielded valuable information and views about how the NESP Hubs performed with respect to Indigenous engagement across the board. The outcomes of those consultations are summarised below.

- There is scope for greater engagement between the NESP Hubs and the Minister's IAC on broader matters such as: identifying Indigenous research themes and priorities; the development of KPIs around engagement, monitoring and year-on-year reporting on improvements with Indigenous engagement practices (especially in relation to the application of the principle of free, prior and informed consent); communication and dissemination of research outcomes; and integration of research outcomes into recovery plans, management plans and environmental impact assessments under the EPBC Act. KPI's should include both qualitative and quantitative indicators or measures.
- The Department's IEPS Guidelines and directives about Indigenous engagement were not made available at the start of the NESP. The timing of the guidance and establishment arrangements meant it was difficult to achieve meaningful Indigenous partnerships from the outset which impacted on how some of the Hubs progressed their Indigenous engagement strategies. There is room for improvement in terms of providing more information and guidance to the NESP Hubs about Indigenous Engagement from the outset of NESP2.
- Several Indigenous stakeholders commented that the Department's IEPS (DoE, 2015a) did not include a set of consistent objectives for Indigenous engagement in the NESP. It would have helped if the NESP Hubs had been given a clear set of objectives they could add to, but not divert from, in developing their own IEPS. Stakeholders also commented that Aboriginal and Torres Strait Islander people should be consulted on the development of the engagement objectives and their agreement

sought before the objectives are adopted by the Department. If engagement and participation strategies are to be seen as living documents, then the annual research plans and reports need to show how the strategies are being applied and reviewed annually.

- Questions were also raised by several stakeholders about KPIs that the NESP Hubs are expected to report on in their annual reports and whether they are sufficiently appropriate as measures of Indigenous engagement across the full suite of NESP governance and research activities. It was suggested that there needs to be stronger benchmarking of performance on a much wider range of indicators if the intent is to monitor and keep improving the level and quality of Indigenous engagement by the NESP Hubs. While reporting against the current set of KPIs shows some remarkable and worthy achievements by the NESP Hubs compared the Program's predecessors, there is no evaluation of improvements made year-on-year. There are other practical measures that could also be designed into the program to improve the level of accountability and improving performance in relation to Indigenous engagement. For example, it was suggested that targets be negotiated with the Hubs from the outset of NESP2 and that additional incentives be offered for reaching the agreed targets to ensure they can go further the following year.
- In some respects, the NESP has benefited from researchers with considerable experience working with TOs and researchers who have begun to develop cultural capacity. In selecting the new Hubs, it is important to be mindful of not losing the trusted relationships that have been developed over the life of NESP and its predecessors. SGSEP found there is a strong commitment to two-way knowledge exchange and learning in several projects. It is a sign of significant progress in building relationships between Indigenous Australians and the environmental and climate science fraternity when there is a clear commitment to two-way learning and knowledge exchange on matters relating to the management of land and sea Country and generally on equal terms. This knowledge exchange and Country partnerships in NESP is enabling the production of practical management and training tools for Indigenous land and sea Country managers and their communities. And this is what Indigenous people are finding most valuable.
- Some projects have suffered in the past from inadequate resourcing and planning for Indigenous inclusion from the outset of a research project. Careful pre-planning and allocation of resources for Indigenous inclusion in environmental and climate science research is a pre-requisite to success.
- While the numbers of Indigenous researchers involved in environmental and climate science research are slowly growing, there is still a need to build the capacity of Indigenous researchers by providing support at all levels from high school through to university, by investing in skills transfer and by supporting early career researchers.
- All NESP research should include explicit ethical requirements for the ongoing protection of Indigenous cultural and intellectual property. While the legal framework for protection of ICIIP remains unclear, researchers still have a responsibility to ensure adequate protections are put in place from the very outset of a research project to provide long term protection for any IK acquired or accessed during the research.
- The National Indigenous Gathering in Canberra in 2018 resonated with Indigenous people involved in environmental and climate science research because it provided a rare opportunity for them to discuss a broad range of issues, to share experiences and to develop ideas for actions. Events such as these are what can be termed 'milestone events' because they provide important opportunities for fostering respect and understanding about Indigenous peoples environmental and climate science research themes and questions at key points in the life of NESP.
- Similarly, the Canberra briefings resonate with the Aboriginal and Torres Strait Islander people involved in research on their land and/or sea Country. The opportunity to come to Canberra to brief Departmental and agency officials and politicians on the outcomes of their research was mentioned by several stakeholders as very valuable. Such events enable them to share their knowledge and

understanding about their Country directly with decision makers and how the investment in environmental and climate science research is beneficial, not only to them but also for all Australians. The quality and value-add of these kinds of events should not be under-estimated.

- In the course of conducting this research, SGSEP encountered several difficulties in accessing basic information and resources, especially the paucity of adequately linking research outcomes to the research project information. SGSEP was also unable to readily access several key documents that were supposed to be publicly available online from NESP Hub websites. There were several frustrating moments when documents were not provided within a reasonable timeframe or when we were unable to connect documents to research projects for lack of consistent details like project numbers or name changes that were not properly documented. There is scope therefore under NESP2 for improvement in making final research results readily available online and that are easily searchable and connected to the original research proposal.

SGSEP therefore recommends that:

13. NESP2 include the following elements as a matter of good practice:

- a) Greater opportunities for engagement between the NESP Hubs and the Minister's IAC on identifying Indigenous research themes and priorities; KPIs for monitoring and reporting on Indigenous co-governance, engagement practices, communication and dissemination of research outcomes, and integration of Indigenous knowledge and research outcomes into recovery plans, management plans and environmental impact assessments under the EPBC Act.
- b) All research involving Aboriginal and Torres Strait Islander peoples must conform with the ethical research framework (The NHMRC National Statement, the ARC Code of Conduct and the AIATSIS Code of Ethics [when finalised]).
- c) The Department review its IEPS for the NESP to reflect the recommendations arising from this review, and the Indigenous Engagement resources (see Chapter 7 and Appendix M).
- d) A clear set of consistent objectives for Indigenous engagement to be developed in consultation with Aboriginal and Torres Strait Islander people. The Hubs be allowed to build on these objectives relevant to their particular field of research, but not detract from the core objectives.
- e) The KPIs for Indigenous engagement be developed in consultation with Aboriginal and Torres Strait Islander peoples. KPI's should include both qualitative and quantitative indicators or measures. The Hubs be required to report against the KPIs, year-on-year and to show improvement in performance.
- f) Allow the Hubs to provide support for Indigenous leadership of research projects, including flexibility to respond to Indigenous research priorities that may emerge during the course of research;
- g) Allow sufficient time and funds for Indigenous peoples to have input into the research design and the development of appropriate research protocols for each project. The research protocols must include sufficient protections for ICIP and provisions for dispute resolution.
- h) Include capacity to support the development of Indigenous researchers from high school through to university, in skills transfer and as early career researchers.
- i) Ensure that cultural capability training for researchers is an essential part of future research programs and where possible, be delivered by local Indigenous groups involved in the research.
- j) National Indigenous Gatherings be planned early in the life of NESP2, at midterm and again toward the end of NESP2 as a way of enabling information gathering and sharing between Aboriginal and Torres Strait Islander peoples and other stakeholders, including the NESP Hubs and the Department and relevant Commonwealth agencies.
- k) Canberra briefings be held in line with significant research project outcomes to enable Aboriginal and Torres Strait Islander and other researchers to present and share their findings with key decision-makers.

- l) The NESP Hub websites include up to date information and better links between research projects and their outputs to make them more accessible.