

6. INDIGENOUS PROTECTED AREA (IPA) MANAGEMENT PLANS AND INDIGENOUS RESEARCH THEMES / QUESTIONS

6.1 Introduction and Approach

This Chapter examines the IPA program and the Management Plans for most of the 76 declared IPAs around Australia and the Healthy Country Management Plans for seven other non-IPA locations. This examination was specifically included in the Brief from the Department because, in contrast to the NESP research outputs, most of the IPA Management Plans and other Healthy Country Management Plans were prepared by the Traditional Owners of the areas under conservation protection or by the Aboriginal and Torres Strait Islander organisations with management responsibilities for the areas that are the subject of the Management Plans.

The IPA and other Healthy Country management plans are a very rich source of information and knowledge about the threats, management activities and research themes and questions relating to the areas that are the subject of the plans and more generally. This kind of analysis of the IPA and other Healthy Country management plans has never been done before. As a result, the analysis reveals some interesting insights, not only about environmental and climate science research themes and questions of concern to the TOs, but also about the state of these plans and the management of the areas they are intended to protect for present and future generations for the benefit of all Australians.

The following analysis also meshes very neatly with several of the NESP Hub research projects that have focussed on IPAs and IPA management and research needs generally.

6.2 Indigenous Protected Areas (IPAs)

Since 1997, the Australian Government has supported Indigenous communities to voluntarily establish Indigenous Protected Areas (IPAs) on Indigenous owned or jointly managed land and sea Country. An IPA is defined by the Australian Government as:

an area of land and/or sea over which the Indigenous traditional owners or custodians have entered into a voluntary agreement with the Australia Government for the purposes of promoting biodiversity and cultural resource conservation. (Department of Agriculture, Water and The Environment 2020).

There are currently 76 dedicated IPAs across approximately 67 million hectares (**Figure 6.1**). They range from extremely large remote desert areas on Indigenous-owned lands to relatively small, rainforest multi-tenured sites where the IPA co-exists with National Parks, leasehold and privately owned lands (Hill *et al*, 2013). IPAs are pivotal in conserving Australian biodiversity and ecosystem services, constituting over 44 per cent of the National Reserve System (NRS).

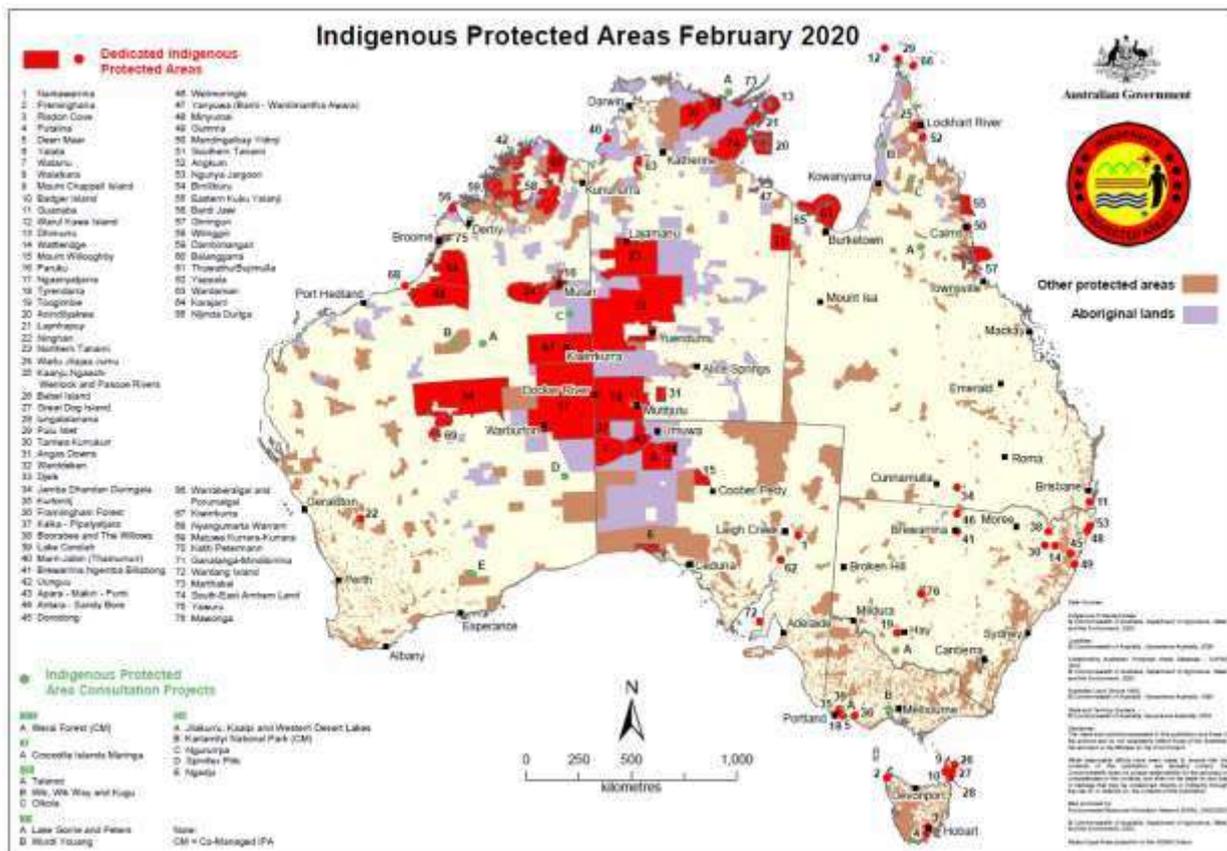


Figure 6.1: Indigenous Protected Areas and Consultation Projects – February 2020

Source: DAWE, 2020

6.3 Establishing an IPA

There are five key steps involved in establishing and maintaining an IPA:

- Community and stakeholder consultation
- Developing a Plan of Management
- IPA Declaration
- Implementing the Plan of Management
- Monitoring, evaluation, reporting and improvement.

A recent study of IPAs in Northern Australia undertaken by the NAER Hub (Farr *et al*, 2016:9) noted that:

- An IPA arises from a voluntary agreement entered into by traditional Indigenous owners to promote biodiversity and conserve cultural resources. Traditional Owners enter into a legally binding IPA commitment via an Indigenous organisation and committing land title in perpetuity to the NRS purposes.
- IPAs are only declared after a period of consultation which typically takes between 3 and 5 years, and which is intended to facilitate the development of management and governance systems to ensure effective long-term operation of the areas. During the consultation period, Indigenous communities are supported by the Australian Government to consult with their communities and other stakeholders about whether an IPA is suitable for them. A Plan of Management is developed which sets out how Country, its cultural values and threats to these values will be managed (Hill *et al*, 2011:4-5).
- IPA agreement is done in line with international standards, namely the International Union for Conservation of Nature (IUCN). About 1/3 of IPAs are nominated under IUCN Category V (Protected

Landscape/ Seascape); with 2/3 in IUCN Category VI (Managed Resource Protected Area); several IPAs have more than one IUCN nomination (IUCN, 2013).

- IPAs play a major role in Australia’s capacity to meet its conservation targets under national and international obligations.
- IPAs comprise a significant and growing part of the National Reserve System (NRS) – growth in IPAs accounts for nearly 70% of the total area of land that has been added to the NRS since its inception. IPAs range widely both in size and in ecosystem types protected.
- An IPA management plan describes how Indigenous groups ‘care for Country’ using a combination of traditional Indigenous knowledge and contemporary western science. These plans may also identify research priorities (discussed below).
- Rangers are an important part of the IPA system. As IPA managers, they undertake the day to day running of these areas, safeguarding against weed and feral animal expansion, revegetating areas of deforestation, conducting interpretive tours for visitors, managing and maintaining visitor amenities, engaging in cultural history and language projects, including the protection of rock arts, and participating in research projects aimed at conserving fauna (e.g., crocodiles and threatened turtle population) and flora.
- Northern Australia is home to 30% of the total Indigenous population of Australia and contains more than 50% of the Australia’s declared IPAs.

6.4 Benefits of IPAs

A recent study of IPAs in Northern Australia undertaken by the NAER Hub found that there are many different ways of measuring benefit (Farr *et al*, 2016:30), that no single method of assessing benefits is suitable in all situations because different benefits require different assessment techniques (Farr *et al*, 2016:i and 41). The researchers concluded that it is important to establish who needs the information and why, before deciding which techniques may be best suited to the task of establishing the benefits (Farr *et al*, 2016:i).

The NAER Hub study referred to above, concluded that:

IPAs have unique features compared to other types of reserves including governance arrangements founded in Indigenous customary law, strong emphasis on traditional knowledge systems for management practice, and a priority to deliver multiple economic and cultural benefits alongside nature conservation.

They also differ greatly from one another, ranging from large relatively remote areas on Indigenous-owned lands to small, multi-tenured sites where the IPA co-exists with national park, lease-hold or privately owned lands. Understanding these features is critical to facilitate the improvement and refinement of IPA management and to provide information useful to collaborative stakeholders including Traditional Owners, community, and government. (NAER Hub, 2016)

In 2016, the Australian Government commissioned SVA Consulting to conduct four SROI (Social Return on Investment) analyses to understand, measure or estimate, and value the changes resulting from the investment in five IPAs across Australia, specifically:

- Warddeken in NT;
- Giringun in Qld;
- Birriliburu and MKK in WA (together forming one analysis); and
- Minyumai in NSW.

The objectives in conducting these analyses were:

- To test and validate PM&C’s understanding of the broad environmental, cultural, social and economic outcomes generated by IPAs; and

- To supplement the existing body of information by assigning a financial value to those outcomes, helping PM&C to better understand the relative benefits of the IPA program for Indigenous communities, Government and other stakeholders.

SVA Consulting's analyses concluded that, over the period 2009 to 2015 financial years, an investment of \$35.2m from Government and a range of third party investors generated social, economic, cultural and environmental outcomes with an adjusted value of \$96.5m. SVA concluded that 'The analyses support the prevailing view that the IPA and Working on Country (WoC) programs have succeeded across a broad range of outcome areas, effectively overcoming barriers to addressing Indigenous disadvantage and engaging Indigenous Australians in meaningful employment to achieve large scale conservation outcomes' (SVA Consulting, 2016: 30).

It is well established that IPAs deliver more than environmental benefits because the Indigenous managers are 'caring for their Country' (Garnett and Sithole, 2007; Ganesharajah, 2009; Burgess *et al*, 2009; Zander and Garnett, 2011; Larson *et al*, 2020). Indigenous communities managing the IPAs are able to protect the values of their Country for future generations and achieve significant health, education, economic, social and cultural benefits. These benefits are beyond doubt (SVA Consulting, 2016).

6.5 New IPA's in the planning stage

In 2017, the Australian Government committed \$15 million under the IPA Program to assist Indigenous groups to undertake consultation and planning for the establishment of new IPAs.

A Competitive Grant Round of the New Indigenous Protected Areas Program opened on 18 February 2019 and closed on 30 April 2019. Following the round, the Australian Government announced funding for seven new IPA consultation projects.

A Discretionary Grant Round of the New Indigenous Protected Areas Program was held in early 2018. Following the round, the Australian Government announced funding for a further five new IPA consultation projects.

The 12 new IPA Projects are listed in **Appendix I**. Combined, the 12 new IPA projects from the Competitive and Discretionary Grant Rounds cover over 33 million terrestrial hectares and over 1.8 million hectares of sea Country. Once dedicated, the new IPAs will add over 30 million hectares to the National Reserve System, increasing the size of the National Reserve System by almost 20 per cent. (DAWE, 2020).

6.6 NESP research on IPAs

The IPAs have been the subject of several research projects under the NESP, both in terms of particular sites as well as more broadly for the value of the network of IPAs across Australia, in particular by the NAER Hub. The following two projects are of particular significance.

Country: multiple values, multiple benefits into the future. Research priorities for Indigenous Protected Areas across northern Australia. (Hill *et al*, 2016)

This project sought to identify the environmental, social, economic and cultural benefits associated with IPAs in northern Australia and an assessment of the research priorities for IPAs. The project was undertaken in collaboration with IPA managers, government, non-government and research stakeholders across the north of Australia and included literature reviews, interviews and workshops to assess research priorities for northern Australia's IPAs.

The project identified five priority research topics and questions and six key findings about IPAs that underpin and explain the research results. The greatest single research priority identified was the development of new models of research in which Indigenous people are central to the planning, process and outcomes. The remaining four research topics and questions were relatively equally weighted and focussed

on the need to acquire knowledge to manage Country into the future for multiple values and multiple benefits.

The five critical research topics and questions are:

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, 2016)

The six key findings that underpin the needs are:

1. Caring for Country through IPAs across northern Australia forms part of the broader spectrum of Indigenous land management activities that have similar features, resulting in similar research needs.
2. All research needs identified fit within the theme of understanding how to manage Country for multiple values and multiple benefits while supporting today's youth into the future.
3. The greatest priority of Indigenous land managers for research is the development of new research models in which they are central. These should be tailored to their diverse environmental, economic and social information needs. Peer to peer Indigenous networking is vital here.
4. Place-based, integrative research and practice through Indigenous-driven case studies provides the best model to address the diverse, *area specific* research needs of land managers.
5. Systematic and participatory prioritisation of research needs can be supported through: looking at priorities listed in strategic plans; identifying current and future factors that affect people and Country; Indigenous-led group discussions about criteria to guide decisions; ranking based on these criteria in workshops; interviews to discuss priorities; and review and feedback before finalisation.
6. Current factors that influence research priorities for land management are a mix of opportunities, challenges, and factors that could be considered as both. For example: deriving economic and other benefits is an opportunity; prevalent community socio-economic disadvantage is a challenge; and large numbers of youth in communities can be viewed as both an opportunity and a challenge. (Hill *et al*, 2016:10; NAER, 2016)

The research outcomes were also seen by the participants to apply to broader Indigenous land management activities across Northern Australia (and possibly elsewhere in Australia also), and not just to IPAs (NAER Hub, 2016).

Economic values and Indigenous Protected Areas across Northern Australia (Farr *et al*, 2016)

A sub-component of the project discussed above was research on the economic values of IPAs. The study involved a systematic review of the empirical valuation literature relating to benefits associated with IPAs, revealing that some benefits are quantified in monetary terms more frequently than others, both in Australia and elsewhere. The research identified substantive gaps in our understanding of the numerous benefits – of their value to different people, in different contexts, in their entirety, and relative to other benefits. There is a focus on the things that can be easily quantified, and if it is not able to be quantified there is a lack of 'visibility' or 'presence'. Hence, vitally important non-market goods and services associated with IPAs may be overlooked, particularly by decision-makers who are driven by quantitative and/or economic data. The research concluded that it is important to find ways of highlighting the importance of those non-market

benefits, so that resources can be directed in a manner that generates most benefit per dollar spent. The researchers note that no single method of assessing benefits is suitable in all situations and that more than one method may be required to assess the multiple benefits associated with IPAs (Farr *et al*, 2016:41).

More significantly, the report concludes that:

'When prioritising research to fill the gaps and selecting the most appropriate valuation method for the task (whether it's one that uses money as a metric or something else), it is important to carefully specify the type of information required: who needs the information?, on what?, and why?. When asked by different stakeholders, these questions may require the use of different valuation methods. This is because different stakeholders will likely prioritise the assessment of different benefits, and different benefits require different assessment techniques.' (Farr *et al*, 2016:1, 37).

The research on research priorities for IPAs across Northern Australia has informed two other projects by the NAER Hub:

- 'Multiple benefits and knowledge systems of Indigenous land management programs' (Project 5.3), which examined quantifiable and comparable information about local to national scale socio-economic and well being benefits associated with Indigenous land and sea management programs.
- 'Knowledge brokering for Indigenous land management' (Project 5.4) which has involved Indigenous peoples as co-researchers to develop tools that are assisting them to identify useful knowledge resources and explore ways they can use different types of knowledge for decision-making. One significant product of this project is the Best Practice Guidelines from Australian Experiences: *Our Knowledge Our Way in Caring for Country. Indigenous-led approaches to strengthening and sharing our knowledge for land and sea management.*

6.7 IPA Management Plans

The recognition of an IPA by the Australian Government is a response to a declaration process initiated by the Traditional Owners (TOs) and/or custodians. The declaration is preceded by consultation with the relevant TOs and/or custodians and 'participatory planning under community control and decision making' (Hill *et al*, 2011:4). The declaration is then recognised by the Australian Government based on a Management Plan that has been endorsed by the relevant TOs/custodians.

Most IPA Management Plans are based on a management approach consistent with the IUCN Protected Area Management Category. As Hill (*et al*, 2011:4) notes, 'An IPA declaration also depends on assurances that the "right people" that can speak for that Country have been given an opportunity to make free, prior and informed consent'. TO communities invest considerable time and effort in preparing their IPA management plans because they will be responsible for the management of the IPA once the declaration is made.

IPA Management Plans therefore carry considerable authenticity from the Traditional Owners when it comes to identifying how an IPA place is to be managed, what the threats are and what the research priorities might be for that area.

Some excellent Guidelines already exist to help IPA managers develop plans based on the western scientific planning approach. Including for example:

- *Guidelines for Management Planning of Protected Areas* (IUCN, 2003);
- *Guidelines for Applying Protected Area Management Categories* (IUCN, 2013).
- *Australian Guidelines for Establishing the National Reserve System* (CofA, 1999);
- *Open Standards for the Practice of Conservation*. (CMP, 2013).

These existing Guidelines contain material that is both highly useful and important for IPA managers. However, using these Guidelines alone tends to produce plans that are based on western science and fall short of the potential to present the unique cultural settings and the vibrant Indigenous management strategies on Country and a synthesis between the application of Indigenous knowledge alongside Western

science. The co-design and co-production of environmental and climate science research projects is discussed in more detail in **Chapter 7**.

In 2011, CSIRO in collaboration with IPA managers, traditional owners, Australian Government Indigenous Protected Area section staff (within the Department) researchers in the CSIRO, an Independent Indigenous Consultant, and other Consultants who have worked on IPA Management Plans, undertook the development of a set of guidelines for the preparation of IPA Management Plans, titled *Our Country Our Way* (Hill *et al*, 2011) (See **Figure 6.2**).

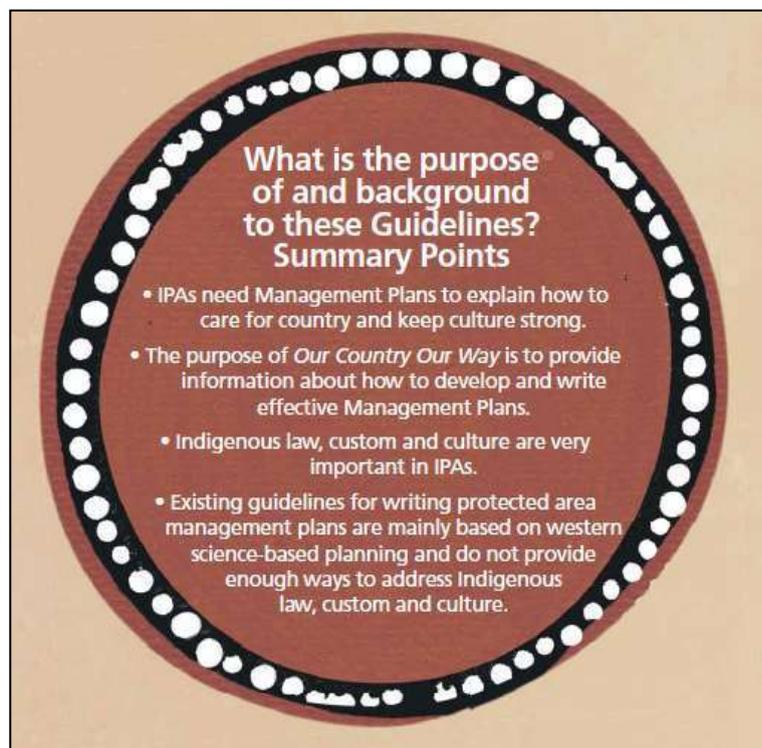


Figure 6.2: Purpose and Background to Our Country Our Way Guidelines

Source: Hill *et al* 2011:4

Our Country Our Way (Hill *et al*, 2011) was developed to sit alongside the existing Guidelines listed above. The purpose of the *Our Country Our Way* guidelines is to assist IPA owners, custodians and managers, including those involved in co-management projects, to produce Management Plans that ensure outcomes of value to both Indigenous peoples and the Australian nation (Hill *et al*, 2011).

IPA Management Plans therefore bring together management based on connections between Indigenous people, Country, traditional law, custom and culture with the Australian and international systems for protected area management. IPA Management Plans are most effective if they ensure Indigenous peoples drive and determine how these requirements will be met.

With the assistance of the Department of Agriculture, Water and the Environment, SGS Economics and Planning was able to locate Management Plans for 49 of the current 76 declared IPAs. SGS Economics and Planning subsequently examined each of those Management Plans plus seven (7) other Management Plans prepared for specific places by TOs/Custodians, to ascertain the extent to which they identify environmental and climate science research priorities.

6.8 Analysis of IPA Management Plans

To better inform our understanding of what Indigenous environmental and climate science research themes and questions might be, we turned to the IPA Management Plans and developed a spreadsheet with the following analysis:

- IPA No.
- IPA Name
- State/Territory
- BioRegion
- NRM Region
- Source Agency
- Management Plan and Date
- Plan Type
- Timespan of Management Plan
- Threats
- Research Priorities
- NESP 2 Research Hubs (Marine & Coastal; Resilient Landscapes; Climate Systems; Sustainable Communities and Waste), and
- Website addresses where available.

The Spreadsheet shows that 46 IPA’s have publicly available Management Plans, 38 of which include some identified Indigenous specific research methods and/or priorities. There are 30 IPAs where there is no publicly available Management Plan for that IPA.

Table 6.1 shows that the bulk of the Management Plans were prepared between 2011-15 and then between 2016-20.

Some of the Management Plans are in their third or fourth iteration, however the bulk of them are still on their first iteration and have expired or are about to expire and are therefore somewhat dated. Nevertheless, they still provide a valuable source of information.

Table 6.1: IPA and Other Management Plans and timeframes of when they were prepared

Period Management Plan prepared	IPA	Other Management Plans
1996-2000	0	0
2001-2005	4	1
2006-2010	2	1
2011-2015	30	3
2016-2020	7	2
Not identified	3	
TOTAL	46	7

Source: IPA Management Plans 1996- 2020

The spreadsheet also identifies which Interim Biodiversity Regions and NRM regions the IPA is situated, in addition to other relevant details, including the nature of the threats identified in the Plan.

The primary purpose of this analysis is to ascertain whether the IPA Management Plans identify Indigenous specific environmental and climate science research priorities. SGSEP’s analysis found that:

- Of the 46 IPA Management Plans that SGSEP and DAWE were able to locate on the public record, 38 (79%) of them identified discernible/specific Indigenous research priorities.
- Of the seven (7) other non-IPA Management Plans on the public record, five of them identified discernible Indigenous research priorities.

By ‘discernible/specific Indigenous research priorities’ we mean that the priorities can be regarded as ‘Indigenous specific’ because they are identified in the Management Plan and the Management Plan has

been prepared by the relevant TOs or Indigenous organisation that is responsible for the management of the IPA.

Two things are very clear from this analysis:

- Firstly, many of the IPA Management Plans raise issues around the use of Indigenous ecological or traditional knowledge and require the development of formal agreements or protocols for undertaking scientific research on the IPA.
- Secondly, many of the IPA Management Plans identify a wide range of threats and specific matters that the TOs or management body consider require further research.

The details are presented in the Excel Spreadsheet, and are discussed in more detail below.

Table 6.2 is a list of the relevant 38 IPA Management Plans and shows in tabular form in which IPA Management Plan these specific issues are raised. The analysis of the specific research priorities has been aligned with the four thematic Hubs that are to be established under the next iteration of the NESP (discussed further below).

Table 6.3 is a list of the Other Non-IPA Management Plans and shows in tabular form in which Other Non-IPA Management Plan these specific issues have been identified and how they align with the with the four thematic Hubs that are to be established under the next iteration of the NESP (discussed further below).

Table 6.2: IPA Management Plans, Indigenous specific research priorities and alignment with NESP2 Hubs

IPAs by number and jurisdiction			Indigenous specific research methods / approaches	NESP2 Hubs and Indigenous specific priorities			
IPA No.	IPA Name	Jurisdiction		Marine & Coastal Hub	Resilient Landscapes Hub	Climate Systems Hub	Sustainable Communities and Waste Management Hub
5	Deen Maar	VIC	Y	Y	Y		
12	Warul Kawa Island	QLD	Y	Y			
13	Dhimurru	NT	Y		Y	Y	
15	Mount Willoughby	SA			Y		
17	Ngaanyatjarra	WA			Y		
18	Tyrendarra	VIC		Y	Y		
20	Anindilyakwa	NT	Y		Y	Y	
21	Laynhapuy	NT	Y	Y	Y		
23	Northern Tanami	NT			Y	Y	
24	Warlu Jilapaa Jumu	WA			Y		
25	Kaanju Ngaachi Wenlock & Pascoe Rivers	QLD	Y				
32	Warddeken	NT			Y		
33	Djelk	NT			Y		
35	Kurtonitj	VIC			Y		
39	Lake Condah	VIC		Y	Y		
42	Uunguu	WA	Y	Y	Y		
50	Mandingalbay Yidinji	QLD	Y	Y			
Y51	Southern Tanami	NT			Y	Y	
53	Ngunya Jargoan	NSW			Y		
55	Eastern Kuku Yalanji	QLD	Y				
56	Bardi Jawi	WA			Y		
57	Girrigun	QLD	Y		Y		
59	Dambimangari	WA	Y		Y		
60	Balangarra	WA			Y		
61	Thuwathu/Bujimulla	QLD			Y		
63	Wardaman	NT				Y	
64	Karajarri	WA				Y	
65	Nijinda Durlga	QLD		Y			
67	Kiwirrkurra	WA		Y			

IPAs by number and jurisdiction			Indigenous specific research methods / approaches	NESP2 Hubs and Indigenous specific priorities			
IPA No.	IPA Name	Jurisdiction		Marine & Coastal Hub	Resilient Landscapes Hub	Climate Systems Hub	Sustainable Communities and Waste Management Hub
68	Nyangumarta Warrarn	WA		Y			
69	Matuwa Kurrara-Kurrara	NT	Y		Y		
70	Katiti Petermann	NT			Y	Y	
71	Ganalanga-Mindibirrina	NT			Y		
72	Wardang Island	SA			Y		
73	Marthakal	NT			Y		
74	South-East Arnhem Land	NT			Y		
75	Yawuru	WA		Y			
76	Mawonga	NSW			Y		
TOTAL	38		12	11	28	7	0

Table 6.3: Non-IPA Management Plans, Indigenous specific research priorities and alignment with NESP2 Hubs

Other Management Plans		Indigenous specific research methods / approaches	NESP2 Hubs and Indigenous specific priorities			
Location Name	Jurisdiction		Marine & Coastal Hub	Resilient Landscapes Hub	Climate Systems Hub	Sustainable Communities and Waste Management Hub
Nyul Nyul	WA	Y		Y		
Myala	WA	Y				
Walalakoo	WA	Y		Y		
Yirralka Rangers	NT			Y		
Pompuraaw Rangers (Land in Trust)	Qld	Y			Y	
Gunggandii Land and Sea Rangers	Qld					
Eastern Kuku Yalanji, Mandingalbay and Giringunl	Qld					
TOTAL	7	4		3	1	

6.9 Indigenous Ecological Knowledge (IEK) and research methods

As shown in **Table 6.2** and **Table 6.3** respectively, 12 of the IPA Management Plans and 4 of the Other Non-IPA Management Plans identified several issues relating to accessing and making use of Indigenous ecological or traditional ecological knowledge (IEK, TEK), or more simply referred to as Indigenous Knowledge (IK). The issues relate primarily to methods or approaches to undertaking scientific or other research with Indigenous peoples about their ancestral lands and waters. As the extracts in the Spreadsheet show, Indigenous peoples are not always happy with the way their ecological or traditional knowledge has been used by researchers or end-users of the research. Hence, issues of process and approaches to working with Indigenous peoples and accessing their ecological or traditional knowledge are identified in the management plans as a matter of priority. The concerns relate mainly to a lack of understanding by researchers and end-users about the two-way nature of relationships between Indigenous and non-Indigenous knowledge systems.

For TOs, getting the relationships right is often a higher priority than deciding what the research question(s) may be. Experience has shown that the best outcomes arise when the methodologies and protocols are agreed upon before getting to the topics to be researched – rather than the other way around.

The majority of the IPA Management Plans state that any research conducted on Country can only be undertaken with the free, prior and informed consent of, and in partnership with, the relevant TOs or custodians of the area, and that there is an understanding and acceptance of the need for two-way knowledge exchange and learning before research can begin on Country.

What follows is a rich tapestry of advice about research methodologies in an intercultural context where two-way learning and knowledge exchange is such an important element of the partnerships between Indigenous and non-Indigenous interests.

Where relevant, this information has been classified into the five priority research topics and questions identified by Hill *et al* in their 2016 report '*Country: multiple values, multiple benefits into the future; Research priorities for Indigenous Protected Areas across northern Australia*'.

- Knowledge brokering for Indigenous land management (this is a Hill *et al*, 2016 category):
 - TEK must be regarded as specialist, technical expertise by researchers.
 - IPA management activities must be respected.
 - The rating for the health of each target area is based on TO knowledge, the knowledge of TO partners and some surveys from scientists.
 - Sustained involvement of TOs in on-ground land and sea assessments and formal research is essential.
 - TO Rangers partner with research institutions and government agencies to improve knowledge of the natural resources in the IPAs.
 - TOs' traditional knowledge of the tides, currents and seas helps when looking for jigeedany (Dolphins).
 - TOs must talk to the scientists to make sure TOs are getting things right. Many parts of TO's traditional Country hasn't been researched in great detail, so TOs rely a lot on traditional knowledge.
 - So far only small parts of TO Country have been properly surveyed and TOs need to make sure that research is done jointly with scientists to get a better understanding of the health of traditional Country.
- Frameworks responsive to new impacts enabling Indigenous land managers (this is a Hill *et al*, 2016 category):
 - A balance must be maintained between TO and mainstream worlds and the active practice of two-way natural and cultural resource management is an important key guiding principle.
 - Some Indigenous knowledge is being eroded by the loss of older generations and the difficulty of transferring cultural and ecological knowledge when away from Country. These

negative impacts can be mitigated by undertaking good “two-way” research projects using both western and traditional knowledge, and building the skills and methods of both knowledge systems.

- Integrate Indigenous Knowledge with scientific research to increase understanding of biodiversity values and natural systems.
- Engage TOs, local Rangers and researchers in “two-way” research in pest animal and plant species and removal or reduction actions.
- Engage researchers in collaborative research projects in order to further the recognition of Indigenous governance and land and resource management practices.
- TOs continue to seek and develop research collaborations and partnerships in order to prioritise areas of management concern and TO input into the process. The objectives are to promote and develop research projects and partnerships of equal benefit to the TO community and to others, and to promote and support two-way learning opportunities and further development of contemporary skills for the TOs that can be applied at a regional scale.
- Some TO groups have actively brokered and facilitated equitable relationships between TOs and external researchers to promote and support culturally assured and ecologically sustainable research on Country.
- In the past, TO Rangers worked with western scientists who were studying dolphins, and TOs would like to be more involved with researchers in joint projects that are meaningful to the TOs as well.

Other matters can be aligned under the following headings:

- IPA specific environments:
 - Species on IPA lands must be respected and valued.
 - Raise awareness of the IPA’s regional significance.
- Intellectual property issues:
 - Scientific research findings from TO’s Country are rarely made available to TOs.
 - TO’s intellectual property has been taken without permission, and without payment.
 - TOs have shown researchers where to find what they are looking for, but TOs have not been acknowledged as the knowledge holders or given in return the results of the scientists’ studies (which have helped their academic careers).
 - In some cases, TOs have given researchers and film crews information (such as stories), which the researchers have changed and published with wrong information
 - There is a strong moral and ethical position about the right to be consulted about marine research on Traditional Country (land and marine).
 - Surveying and mapping of Aboriginal cultural sites and stories; consider and use information from cultural mapping projects initiated by TOs to protect Aboriginal and cultural and heritage values.
- Obligations to County:
 - It is a cultural obligation to ensure that wetlands on traditional Country remain healthy into the future.
 - TOs want to look after the native animals and plants on land and in the sea according to their own traditional knowledge and western scientific research.
 - We want to work on our Country. Rangers can work on looking after Country and learning both ways. We want to learn from each other, and from scientists and researchers. We have lots of knowledge to share with them and they have lots to share with us.

- IPA Rangers want to be trained up as scientists so that they can monitor water quality. TOs want to learn more about how to protect wetlands and undertake research together with scientists.
- Research policies:
 - Traditional laws dictate appropriate activities and locations for research projects;
 - TOs must make sure that any research on Country helps TOs to achieve everything in their IPA management plan;
 - Undertake research through partnerships that respect cultural protocols and use two-way learning and research; and
 - Research policies promote collaborative research that responds to questions of the wider Australian community as much as to research priorities of the TO community.

Many of the issues raised above about the use of Indigenous knowledge in scientific research and caring for Country are also discussed in the *‘Our Knowledge Our Way in Caring for Country’* report (NAER Project 5.4) (Woodward *et al* 2020). The preparation of the *Our Knowledge Our Way in Caring for Country Guidelines* was led by an Indigenous-majority Project Steering Group to ensure Indigenous leadership of the project. The Project Steering Group asked “who decides what is best practice and how?” and provided the critical direction that: *Indigenous people must decide what is best practice in working with our knowledge.* (Woodward *et al*, 2020).

With respect to protocols, the Guidelines state:

Our knowledge protocols are vital to positive experiences in sharing knowledge. It is our business to know and follow our own cultural protocols when sharing knowledge within and outside of different Traditional Owner groups.

Other protocols can be negotiated between Indigenous and non-Indigenous partners to facilitate sharing of knowledge the right way, and these can operate at many scales. Protocols can include: agreement on the activities, responsibilities and contributions of each partner; acknowledgement and consideration of background Intellectual property (IP); and how the research IP will be shared. Formalised research agreements between institutions offer a higher level of protection to IP because they are binding. (Woodward *et al*, 2020:xxi)

With respect to consent for sharing knowledge, the Guidelines state:

Free, prior and informed consent (FPIC) is critical to the sharing of knowledge. The UN Declaration on the Rights of Indigenous Peoples, and many other international and national laws and policies, recognise FPIC as the best practice approach to engaging with Indigenous knowledge.

FPIC requires that individuals and groups are provided with sufficient accessible information to enable full consideration of the risks and benefits of a proposed project, prior to them making a decision about whether or not to consent to that proposal. Partners should ensure that their project budgets accommodate payment of interpreters where appropriate, to ensure Indigenous partners are adequately informed before giving consent. The requirement for consent entitles Indigenous Peoples to determine the outcome of decision-making that affects them. (Woodward, *et al*, 2020:xxii)

As the Guidelines also state, Indigenous knowledge is current, relevant, dynamic and adaptable, and Indigenous knowledge is used today as it was in the past ‘to look after Country *our way*’ and ‘Improved environmental conditions and multiple social, cultural and economic benefits come from effective Indigenous adaptive management of Country’ (Woodward *et al*, 2020:2).

The issues associated with Indigenous cultural and intellectual property (ICIP) rights and protocols for engaging with Indigenous peoples about environmental and climate science research are discussed in more detail in Chapter 7.

6.10 Indigenous research themes and questions arising from IPA Management Plans

Table 6.2 and Table 6.3 also show the Indigenous specific research subjects and priorities from the IPA and Other Non-IPA Management Plans. These subjects and or priorities have been aligned with the new thematic Hubs and relevant Missions as identified in the material released by the Minister for the Environment on 27 March 2020 on NESP 2 (DAWE, 2020a).³²

Table 6.2 shows that:

- 28 out of the 38 IPAs have research subjects or priorities that can be aligned with the Resilient Landscapes Research Hub with lead responsibility for the threatened / migratory species and threatened ecological communities' mission;
- 11 out of the 38 IPAs have research subjects or priorities that can be aligned with the Marine and Coastal Research Hub with lead responsibility for the Protected places management mission;
- 6 out of the 38 IPAs have research subjects or priorities that can be aligned with the Climate Systems Research Hub with lead responsibility for the Climate adaptation mission;
- None of the IPAs have identified research themes or questions that can be aligned with the Sustainable Communities and Waste Research Hub with lead responsibility for the Waste impact management mission).

Table 6.3 shows that:

- The research priorities of three (3) of the Management plans can be aligned with the Resilient Landscapes Research Hub with lead responsibility for the threatened / migratory species and threatened ecological communities' mission;
- The research priorities of one (1) of the Management Plans can be aligned with the Climate Systems Research Hub with lead responsibility for the Climate adaptation mission.

Table 6.4, Table 6.5 and Table 6.6 lists the subjects relevant to three of the four new NESP2 research Hubs.

Table 6.4: Subjects relevant to NESP2 Resilient Landscapes Research

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

³² <https://www.communitygrants.gov.au/grants/national-environmental-science-program-nesp-2>

The impact of natural disasters and the integration of traditional knowledge into accepted management practices
Establish a database to store scientific baseline data and Ecological Knowledge and monitoring activities, expand and manage database with natural and cultural traditional knowledge about plants, animals, Country and culture
Impacts of new land uses in or near IPAs
Extent and detail of Aboriginal heritage, engineering and archaeological channels and villages relating to eel aquaculture in South-west Victoria.

Table 6.5: Subjects Relevant to NESP2 Marine and Coastal Research 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.

Table 6.6: Subjects Relevant to NESP2 Climate Systems Research 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

No IPA Management Plans identified research subjects or priorities that could potentially fall within the new NESP2 Sustainable Communities and Waste Research Hub, apart from the issue of marine debris impacting on coastal waters and marine reserves.

6.11 Findings and Conclusions

This Chapter examined the Management Plans for most of the 76 declared IPAs around Australia and the Healthy Country Management Plans for seven other non-IPA locations to ascertain what Indigenous environmental and climate science research themes and questions could be gleaned from them.

The recognition of an IPA by the Australian Government is a response to a declaration process initiated by the Traditional Owners (TOs) and/or custodians and depends on assurances that the ‘right people for Country’ can speak for that Country and have been consulted and give their free, prior and informed consent for the dedication to be made. However, it is noted that while IPAs are recognised by the Australian Government, there is no legislative framework for IPAs, and as Grace (2018:2) notes, their treatment by

State and Territory governments varies both within and between jurisdictions depending on the underlying land tenure and/or classification as Crown land or as part of the conservation estate. This means that despite the Commonwealth's dedication of an area as an IPA, they remain extremely vulnerable to external pressures and changes in land use and access that are well beyond the control of the management body for the IPA.

Most IPA Management Plans are based on a management approach consistent with the relevant IUCN Protected Area Management Category. The TOs invest considerable time and effort in preparing their IPA management plans because they will be responsible for the management of the IPA once the declaration is made. IPA Management Plans therefore carry considerable authenticity from the Traditional Owners when it comes to identifying how an IPA place is to be managed, what the threats are, what management approaches and techniques will be applied and what the research priorities might be for that area. They are therefore a very rich source of information.

This kind of analysis of the IPA and other Healthy Country management plans has never been done before. As a result, the analysis reveals some interesting insights, not only about environmental and climate science research themes and questions of concern to the TOs and /or managers, but also about the state of the management plans and the management of the areas they are intended to protect for present and future generations for the benefit of all Australians.

SGSEP found that 46 IPA management plans were publicly available. SGESP is also aware of management plans for two other IPAs, but as these are not publicly available, they are not included in this analysis. This means there are 18 IPAs that do not have management plans. The bulk of the 46 management plans were prepared before 2015 and most of them have about a five-yearly review cycle embedded in them. This means that many of them are due for renewal, but without an active program of renewal this is unlikely to happen in the foreseeable future.

A significant challenge for IPAs is the very limited financial resources available to support their management activities in order to achieve their conservation outcomes. IPA's currently receive core funding from the Australian Government under the IPA Program, but this is insufficient to meet the conservation objectives in their management plans, and there is little or no funding to renew their management plans at regular intervals. The pressure to deliver multipurpose outcomes through existing financial resources or through other funding sources, such as juvenile justice programs, creates a situation whereby existing resources are stretched to the limit and the core conservation purpose of IPAs risks being undermined (Grace, 2018).

The analysis of the IPA and other Healthy Country management plans for environmental and climate science research themes or questions can be categorised into two broad matters.

- Firstly, many of the management plans express major concerns about access to IK or ICIP and the necessity for formal agreements or protocols for scientific researchers undertaking research on IPAs to protect indigenous knowledges from misuse.
- Secondly, several of the management plans identify a wide range of threats and other management issues that require further research.

In relation to the first matter, SGSEP finds that Indigenous peoples are expressing serious concerns about the ways in which their IK and ICIP are being used by researchers. The concerns are twofold. Firstly, getting the relationships right and agreeing on the protocols for engagement are necessary before getting to the topics that need to be researched. Secondly, there is an apparent lack of understanding by researchers and end-users about the two-way nature of relationships between Indigenous and non-Indigenous knowledge systems. That is not to say that these concerns relate directly to research undertaken by the NESP Hubs *per se*, because many of these management plans were written about five or more years ago. But the small number of Aboriginal and Torres Strait Islander stakeholders that SGSEP was able to consult or meet with via electronic means, also strongly reflected these concerns. The issues associated with better protection of IK and ICIP and the two-way nature of relationships between Indigenous and non-Indigenous knowledge systems in environmental and climate science research are discussed in Chapter 7.

On the second matter in relation to specific Indigenous research themes and questions, many of them fall within three of the four new Hubs to be established under NESP2: Resilient Landscapes, Marine and Coastal and Climate Systems. While none of the management plans identified research priorities or subjects that could potentially fall within the new NESP2 Sustainable Communities and Waste Research Hub, that may just be a product of the fact that there are no significant IPAs in close proximity to any of our major urban centres or inner regional areas. It certainly does not mean that there are no localities closer to our major cities or inner regional areas that cannot be considered worthy of IPA status.

However, the outcomes of our examination of research themes and questions in the IPA and other management plans has a high level of cross-over with the findings on research priorities for IPAs across northern Australia identified by the NAER Hub in their research project (Hill *et al* 2016). We agree with the participants in the NAER Hub research project, that the outcomes about research priorities and the economic values of IPAs apply to broader Indigenous land management activities across northern Australia (and possibly elsewhere in Australia also), and not just to the IPAs (NAER Hub, 2016). SGSEP therefore concludes that there is considerable merit in undertaking a meta-analysis of the IPA's and their management plans to ascertain a better understanding of their value to the IBRA and IMCRA, the management threats the managers have to grapple with and to elicit their research themes, questions and priorities.

SGSEP also concludes that almost 25 years on from the first IPA, it may be time to revisit key aspects of the program with a view to scaling up the management support to review their management plans on a cyclical basis with clear links to Australia's biodiversity conservation strategy and international obligations to the Convention on Biological Diversity, and commensurate with the significant conservation, cultural, social and health and wellbeing benefits delivered by IPAs. SGSEP also agrees with Grace (2018) that where requested by Indigenous peoples, better policy and legal mechanisms need to be developed that would enable the conservation purposes of the dedications to be protected for their long term future, and that means be found to confirm and strengthen the ability of native title holders to leverage their native title rights and interests to undertake land management activities.