Towards a better understanding of First Nations perspectives of monitoring, management, and values of Great Barrier Reef Sea Country

Sustainable us**E** **A**nd **B**enefits f**OR** Mari**NE** (SEABORNE)

August 2024

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Acknowledgement of country

CSIRO acknowledges the Traditional Owners of country throughout Australia and recognises their continuing connection to land, waters, and community. We pay our respects to them and their cultures, and to elders both past and present.

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Acronyms used across all SEABORNE reports

ABARES	Australian Bureau of Agricultural and Resource Economics and Sciences
ABS	Australian Bureau of Statistics
AIMS	Australian Institute of Marine Science
AUD	Australian Dollars
CAPOM	Cairns Area Plan of Management
CB	Contingent Behaviour
CBM	Contingent Behaviour Model
CBS	Contingent Behaviour Survey
CF	Commercial fishery
CM	Choice Modelling
CPUE	Catch per unit effort
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CS	Consumer Surplus
CV	Contingent Valuation
CVM	Contingent Valuation Method
CY	Cape York
DAP	Data Access Portal
DC	Demand Curve
DCE	Discrete Choice Experiment
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DES	Department of Environment and Science
DMS	Data Management System
EMC	Environmental Management Charge
ES	Ecosystem Service
ESVC	Ecosystem Service Value Chain
FNP	First Nations People
GOS	Gross Operating Surplus
GBR	Great Barrier Reef
GBRF	Great Barrier Reef Foundation
GBRMPA	Great Barrier Reef Marine Park Authority

GVP	Gross Value of Production
IMOS	Integrated Marine Observing System
KCB	Keppels Capricorn Bunkers
MB	Marginal Benefit
MC	Marginal Cost
MP	Marine Park
ND	No data
NRM	Natural Resource Management
PCCC	Port Curtis Coral Coast
PS	Producer Surplus
QDAF	Queensland Department of Agriculture and Fisheries
SC	Supply Curve
RIMReP	Reef 2050 Integrated Monitoring and Reporting Program
SEABORNE	Sustainable usE And Benefits fOR mariNE
SEEA EA	System of Environmental Economic Accounting, Ecosystem Accounting
SELTMP	Social and Economic Long-Term Monitoring Program
SNA	System of National Accounting
TCC	Total Cash Costs
TCM	Travel Cost Method
TO	Traditional Owner
TUMRA	Traditional Use of Marine Resources Agreement
WTA	Willingness to Accept
WTP	Willingness to Pay

Executive Summary

The Sustainable usE And Benefits fOR mariNE (SEABORNE) project

The **S**ustainable us**E** **A**nd **B**enefits f**OR** mari**NE** (SEABORNE) project is one of three human dimensions projects funded by the Reef 2050 Integrated Monitoring and Reporting Program (RIMReP) following a 2020 assessment of monitoring priorities and gaps (Great Barrier Reef Marine Park Authority, 2021)[1]. The objective of the SEABORNE project is to improve understanding about who is using the Great Barrier Reef (GBR; the Reef), how the Reef is being used and the benefits enjoyed from this use, focussing on existing data. Improved access to this information will assist management decision-making and enable the evaluation of progress made towards the following 'human dimension' objective from the Reef 2050 Long-Term Sustainability Plan (Australian Government 2021):

> ***Reef benefits*** *are sustained and maintained within the ecologically sustainable limits of the whole system as it changes for Reef dependent* ***users*** *and industries: recreational and tourism visitors; recreational and commercial fisheries; and research (****uses****).*

Focussing on the Cairns Area Plan of Management (CAPOM) and the Keppels Capricorn Bunkers (KCB) spatial areas, the SEABORNE project established and tested a proof of concept to organise existing data and quantify benefits derived from GBR ecosystem services by end users. Hereafter, this is referred to as an Ecosystem Service Value Chain (ESVC). End users included households, Reef-dependent businesses, Traditional Owners, and Governments. Through an ESVC lens, the project team looked at existing data sets to determine which data linked together to give a full account of value of an ecosystem service to an end user and which data provides additional information. This is a form of benefit transfer.

The ESVC approach is a linear approach. Working with First Nations people it became clear that this approach was not appropriate to understand the richness of interaction of First Nations people with the Sea Country of the Reef and the values generated from this. Therefore a different, more culturally appropriate approach was taken.

Understanding use and benefits of Sea Country by First Nations people – the approach

Several First Nations groups have Traditional Use of Marine Resources Agreements (TUMRA) - based management governance within the spatial focus area of the SEABORNE project. The Yirrganydji people represented by the Dawul Wuru Aboriginal Corporation, the Darumbal people represented by Darumbal Enterprises Pty Ltd, the Bailai, Gurang, Gooreng Gooreng, Taribelang Bunda People represented by the Gidarjil Development Corporation Ltd and the Woppaburra people represented by the Woppaburra Saltwater Aboriginal Corporation. All of these groups engaged in the SEABORNE project through a series of workshops.

[1] The other human dimensions projects are "Monitoring collective capacity and implementation" led by the Queensland University of Technology and "Integrated Reef Stewardship Monitoring" (PROTECT) led by the University of Queensland.

The workshops were designed to be flexible in their implementation but were aimed to facilitate discussion about:

1. Workshop participants' perspectives of the use and benefits provided to their people by their traditional Country, and to consider how well these differing worldviews align with the western science perspective underpinning SEEA EA;
2. Monitoring activities participants have been involved in on their Country to date; and
3. Participants' aspirations for monitoring and managing Country in the future, including identifying existing data gaps, and suggesting additional datasets and information that would be beneficial for their future caring for Country practices.

Key findings

Whilst each group's mental model of their connections to, and values of, their Sea Country vary, a key theme in each is the importance of culture, which underpins and overlaps almost all the uses of, and benefits from, Country that were identified. Key concepts and ideas emerging from each workshop are captured within Figure E2 (Dawul Wuru), Figure E3 (Darumbal), Figure E4 (Gidarjil) and Figure E5 (Woppaburra). Of note is also the non-linear reflection of the relationship between ecosystem services and people which is at odds with the standard western view of the flow of values from ecosystem services. A reconfiguring of the flow between ecosystems and people is proposed in Figure E6.

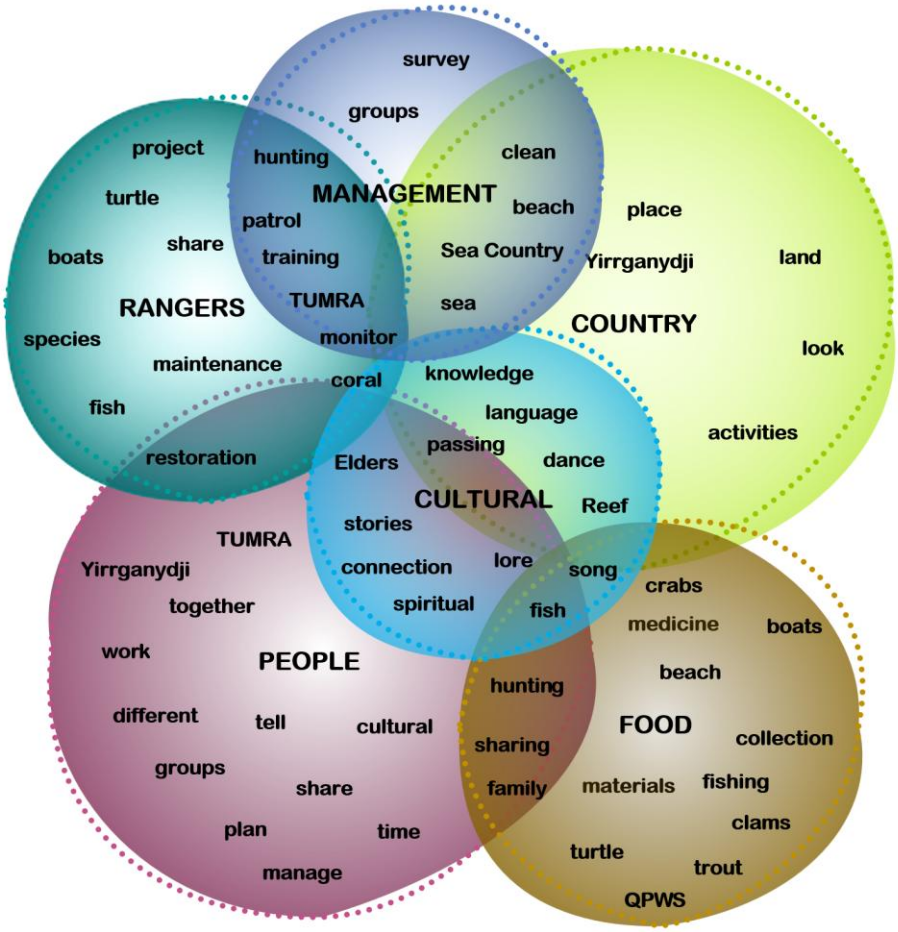


Figure E2: Key concepts emerging from workshop with Dawul Wuru Aboriginal Corporation

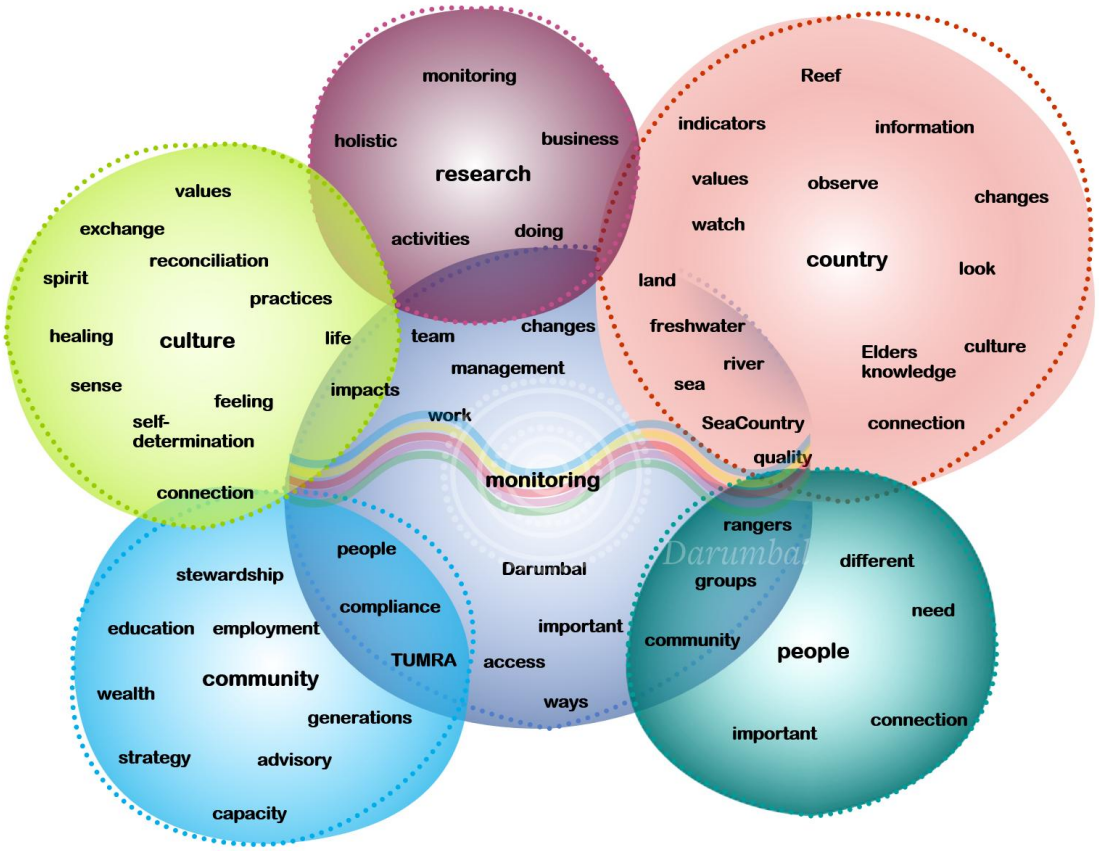


Figure E3: Key concepts emerging from workshop with Darumbal Enterprises Pty Ltd

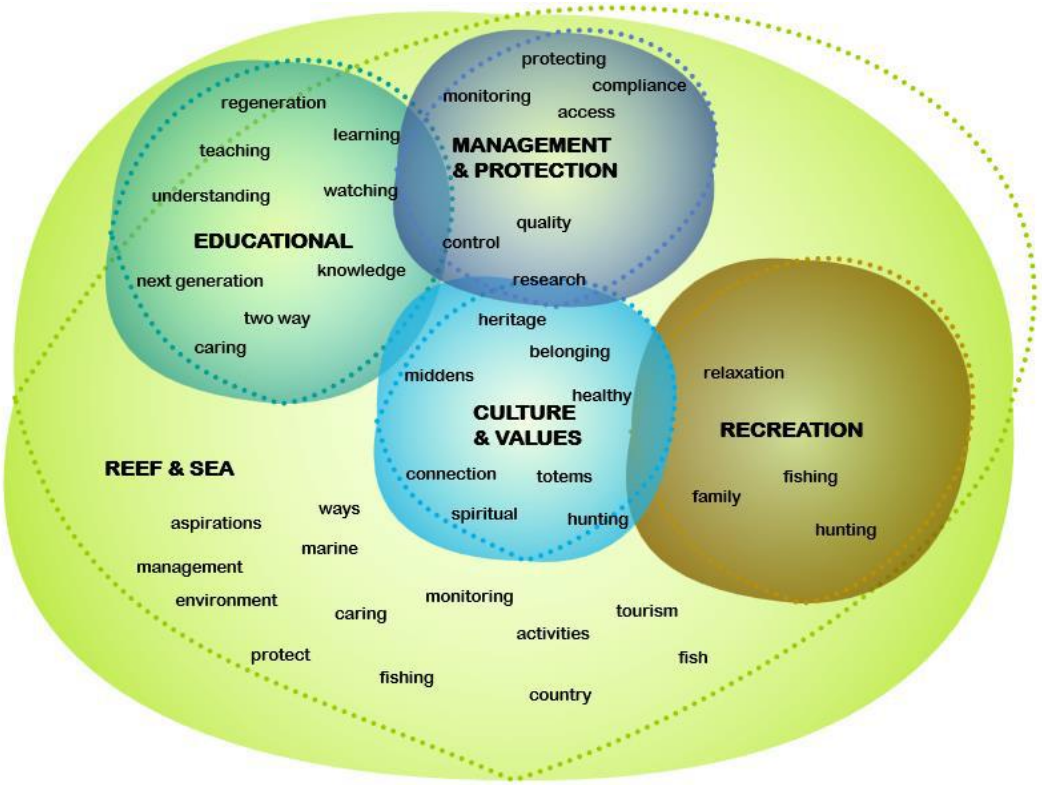


Figure E4: Key concepts emerging from workshop with Gidarjil Development Corporation Ltd

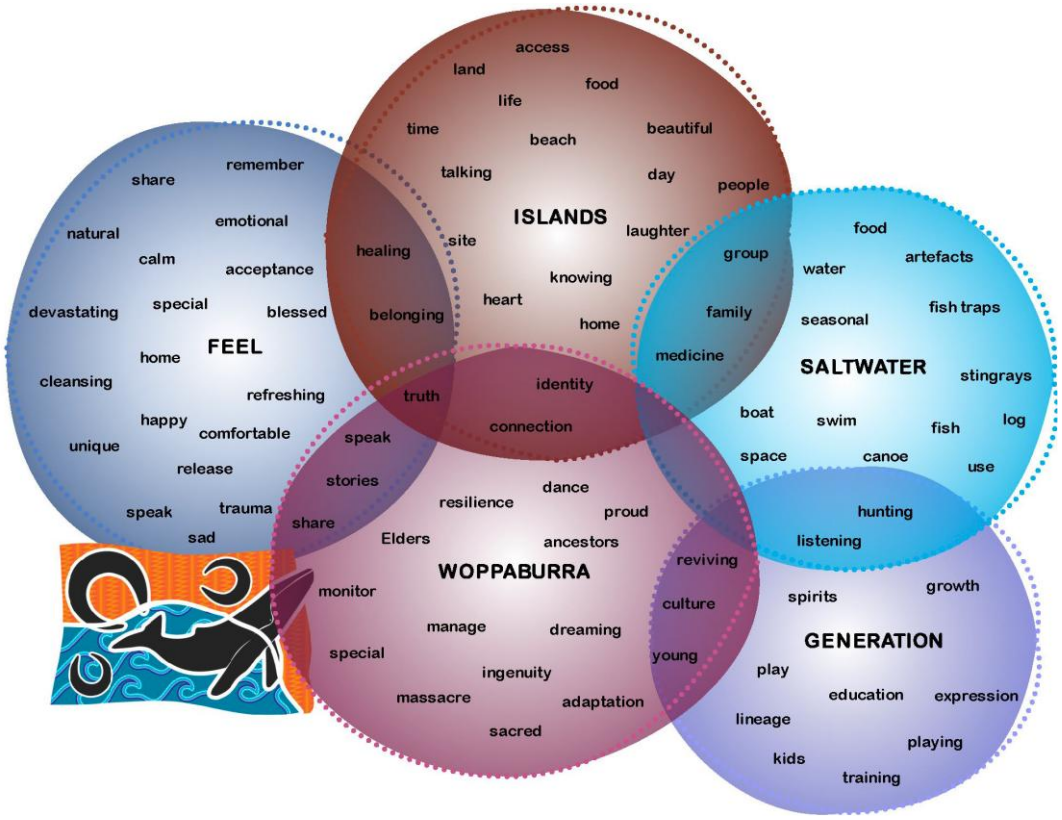


Figure E5: Key concepts emerging from workshop with Woppaburra Saltwater Aboriginal Corporation

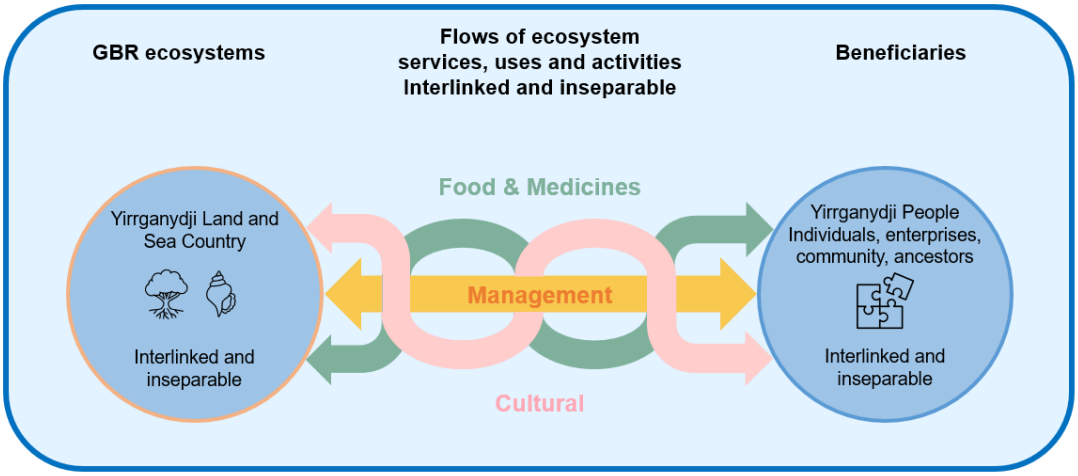


Figure E6: Revised model of flows between people and Country from Yirrganydji perspective that emerged from the workshop with the Dawul Wuru Aboriginal Corporation, depicting the two-way interconnected flows between interlinked and inseparable Land and Sea Country and People

Next steps

While the involvement of First Nations peoples in monitoring and research is increasing, and now includes co-design of activities in some instances, it remains very rare for these activities to be First Nations-led or driven by the needs of First Nations peoples. Furthermore, historically, the data collected by the research and monitoring programs across the Reef has been owned and

stored by the western science researchers and/or funders. Whilst in some instances First Nations groups are able to keep copies of the data they have helped collect, they are not the primary holders, and managers, of the data.

All Traditional Owner groups expressed ambitions to lead monitoring and management projects on Country in the future, to be in the position where they can determine what types of projects take place, where they take place, and what happens to the information.

1 Introduction

1.1 Introduction to SEABORNE

A key initiative of the Reef 2050 Plan is the Reef 2050 Integrated Monitoring and Reporting Program (RIMReP), launched in 2014. The RIMReP is a partnership between key Australian Government environmental management and science agencies including GBRMPA, DCCEEW, AIMS, IMOS, CSIRO, Qld DES and Traditional Owners of the Great Barrier Reef (GBR or the Reef from here on). The objective of RIMReP is to provide Reef managers with information to guide decisions, track progress against the Reef 2050 Plan, drive better alignment between existing monitoring programs and fill gaps in monitoring and modelling knowledge. RIMReP critical monitoring priorities funded by the Reef Trust Partnership (Australian Government Reef Trust and GBRF) projects include biophysical monitoring projects and those focussed on improving knowledge of the human dimensions of the GBR. Excluding ongoing investment in the Social and Economic Long Term Monitoring Program (SELTMP), the **S**ustainable us**E** **A**nd **B**enefits f**OR** mari**NE** (SEABORNE) project is one of three human dimensions projects funded by RIMReP following a 2020 assessment of monitoring priorities and gaps (Great Barrier Reef Marine Park Authority, 2021) .[2]

The objectives of the SEABORNE project are to improve understanding about who is using the reef, how the reef is being used and the benefits enjoyed from this use, FOCUSSING ON EXISTING DATA.

Consolidation of this existing data and use of this data to make information will not only assist in management decision-making but will also assist in reporting against the Reef 2050 Plan objective of:

> ***Reef benefits*** *are sustained and maintained within the ecologically sustainable limits of the whole system as it changes for Reef dependent* ***users*** *and industries: recreational and tourism visitors; recreational and commercial fisheries; and research (****uses****).*

The SEABORNE project went about understanding existing data in three ways:

1. A conceptual framework, called an ecosystem service value chain (ESVC) was developed and applied as a lens through which the large quantity of existing data could be filtered and rationalised
2. All data that fit into the ESVC framework was summarised in a metadata spreadsheet
3. Some data could be linked together to generate a new data point. New data points are included in spreadsheets and accompanying methods.

[2] The other human dimensions projects are "Monitoring collective capacity and implementation" led by the Queensland University of Technology and "Integrated Reef Stewardship Monitoring" (PROTECT) led by the University of Queensland.

1.2 Introduction to this report

The objectives of this report are to articulate the process adopted for exploring and increasing understanding of the flow of value between ecosystems and First Nations people. This report introduces and summarises the key findings of the SEABORNE work with First Nations groups, seeking their perspectives of the users and uses of Country, the benefits that emerge, and the monitoring and data collection activities that they participate in on their Country. Further detail is provided in the separate reports that each focus on SEABORNE workshops with individual groups, which are listed below.

This report is presented in three parts:

Part 1:	**The Ecosystem Service Value Chain Concept**
	Introduces the ESVC concept
Part 2:	**Exploring First Nations perspectives of connections to Country and monitoring programs, within CAPOM and KCB**
	Presents and discusses the methods adopted to explore the flow of services and values between ecosystems/Country and the Traditional Owners of the Country and introduces the First Nations groups who chose to participate in the project.
Part 3:	**The First Nations workshops, reports, findings**
	Steps through and summarises the key findings and outputs from the First Nations workshops. The detailed reports on each of these workshops have been published as separate reports and are listed within section 1.3 below.

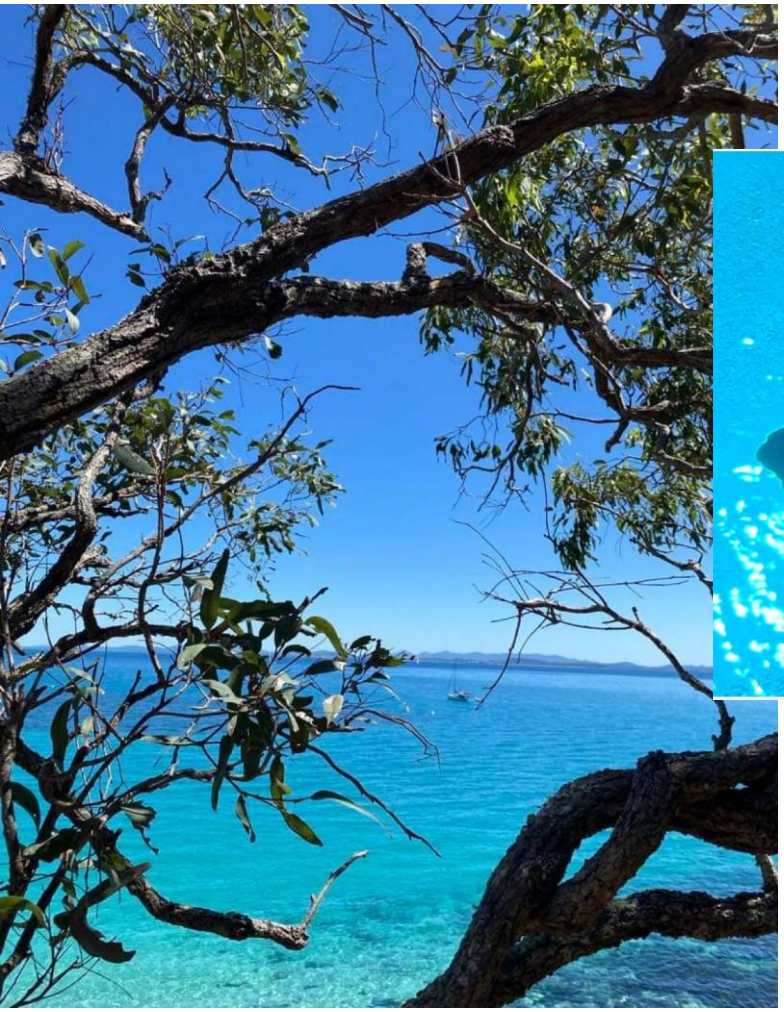
1.3 Links to other reports in the SEABORNE series

Other reports directly relevant to this report are:

- Literature review report Coggan et al. (2023) available at https://doi.org/10.25919/2qxx-bm07
- Report on the SEABORNE workshop with Dawul Wuru: Not publicly available
- Report on the SEABORNE workshop for Darumbal: Graham et al. (2024) available at https://doi.org/10.25919/mcn6-mv06
- Report on the SEABORNE workshop with Gidarjil: https://doi.org/10.25919/42p8-hp26
- Report on the SEABORNE workshop with Woppaburra.

Note, details on all reports can be found in the CSIRO online repository. Reports available for public viewing are also available on our website at SEABORNE (csiro.au).

Part I The Ecosystem Service Value Chain (ESVC) Concept



2 The Ecosystem Service Value Chain concept

Focussing on the Cairns Area Plan of Management (CAPOM) and Keppels Capricorn Bunkers (KCB) (Figure 1), the SEABORNE project took an ecosystem service (ES) approach to prioritising and understanding existing data.

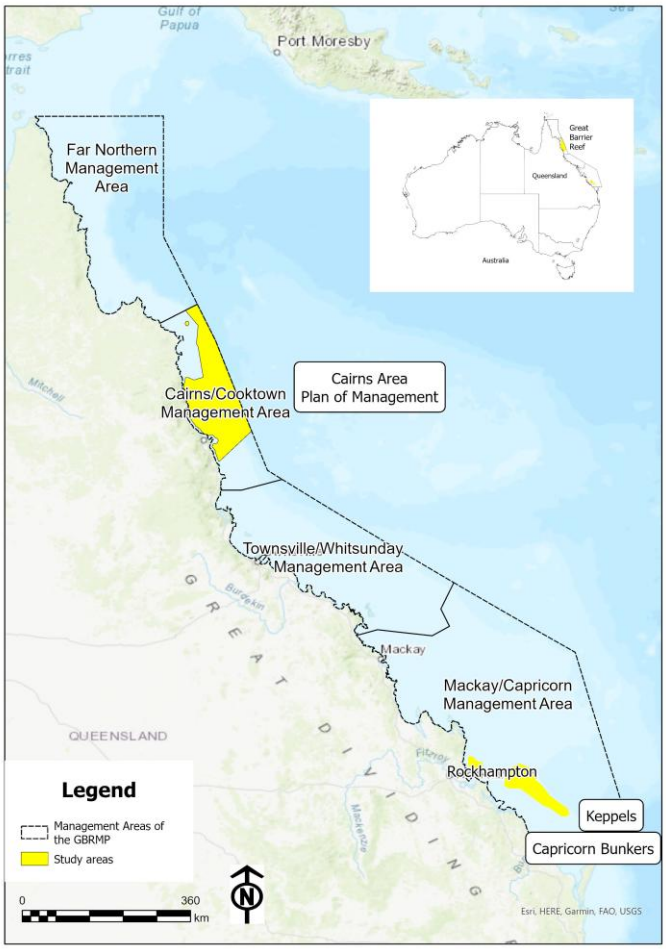


Figure 1: Map showing the two study areas (in yellow); the Cairns Area Plan of Management (CAPOM) and the Keppels/ Capricorn Bunkers (KCB).

Ecosystem Services are the direct and indirect benefits to human wellbeing (whether perceived by humans or not) that derive from functioning natural ecosystems (encompassing the ecological characteristics, functions and processes of those ecosystems) (Costanza et al., 1997, Costanza et al., 2017, Millennium Ecosystem Assessment, 2005). Therefore, an ES framework focuses on the benefits that flow to humans from the services provided by the world's ecosystems. The approach was developed from the concepts first published by Daily (1997) and Costanza et al. (1997).

Whilst the approach could be viewed as adopting a purely anthropocentric perspective, as the end focus is the contribution to human wellbeing; in reality, the ES framework is a systems-based approach, recognising that humans form part of a complex system that needs to be managed and used in a sustainable manner to ensure that the interlinked outcomes of ecological health and human wellbeing can be maintained (or improved) over time. That is, our natural environment (or natural capital) must be maintained to allow the sustained provision of flows of ES over time, thus helping to ensure enduring human well-being (TEEB, 2010).

Working with staff from The Reef Authority and with reference to the 2019 Outlook Report (Great Barrier Reef Marine Park Authority, 2019), 10 ecosystems were focussed upon and from these, ecosystem services were categorised as either cultural, provisioning or regulating. The focus ecosystems and their services are summarised in Figure 2.

Drawing on the concept of ecosystem services, the Ecosystem Service Value Chain (ESVC) (Figure 3) enables a visualisation of how an ecosystem service is used, who uses it, and what constitutes benefit from this use. Starting on the left side of Figure 3, the ESVC begins with the link (link a) for extent and condition of ecosystems[3]. Populating this first link with data was outside the scope of this research but will be critical to understanding the change in flow of benefits with a change in ecosystem quality in the future. The second link in the chain (link b) recognises that ecosystems generate either regulating, provisioning or cultural services[4]. Link c is where the SEABORNE project's value proposition begins. Links c and d are the links that connect the ecosystems to the economic value of the benefits derived from these ecosystems. Link c demonstrates that we need to find data that explains how people use the ecosystem services and link d demonstrates that we need data about the economic value of the benefit that is generated from the use of the ecosystem services. Figure 3 also visually depicts that the flow of value can be connected to specific end users – which can be categorised as households, industry, and Government[5,6]. The generic ESVC (Figure 3) also depicts how some data links together in a chain (those data points inside the dashed box) which then generates a total value data point (link e). Other data, which may be valuable in providing contextual information, does not necessarily fit into a link within the ESVC. The distinction between different types of data and their suitability to the ESVC is an important consideration, central to this report.

[3] The language of extent and condition comes from the United National Nations System of Environmental Economic Accounting Ecosystem Accounts (SEEA EA) full reference - UNITED NATIONS 2021. System of Environmental-Economic Accounting: Ecosystem Accounting (SEEA EA). White Cover Publication, Pre-Edited Text Subject to Official Editing. Being an accounting framework, the SEEA EA starts with accounting for the extent and condition of ecosystem assets (contiguous spaces of a specific ecosystem type characterized by a distinct set of biotic and abiotic components and their interactions), it then enables reporting of the flows of services from the extent of asset in its current condition and an accounting of the benefits that arise to beneficiaries. The SEEA EA approach seeks to understand the value of the contributions of the ecosystems alone to humans. In a pure SEEA EA account, the value of human inputs used to generate the benefit are removed. The SEABORNE project was not seeking to comply with SEEA EA, therefore data on extent and condition is not included nor have we attempted to remove the value of human inputs when looking at the flow of benefits of ecosystems to people. This could be done in the future but was out of scope for this project.

[4]Provisioning services are the products/raw materials or energy outputs like food, water, medicines and other resources from ecosystems. Regulating services are the services which regulate the ecological balance. Cultural services are the non-material benefits that people obtain from ecosystems, such as recreation and tourism. Intermediary services also exist but were not included in the SEABORNE project Intermediary services also exist but were not included in the SEABORNE project

[5] Whilst we recognise that Traditional Owners are also a type of end user, because the flow of value is nonlinear, the ESVC approach is not a correct representation for the flow of value in this context. The flow of value to traditional owners is discussed in a separate set of reports (report and workshop report 1 through to 4 represented in Figure 1).

[6] In this case research institutions fall under the category of Government

Figure 3 also visually depicts that the flow of value can be connected to specific end users – which, when viewed from a western science perspective, can be categorised as household, commercial and Government. This perspective informs many of the outputs of the SEABORNE project. However, we recognise that First Nations peoples form an important group of end users. We also recognise that from the perspective of First Nations beneficiaries, the flow of value between ecosystems and people is nonlinear. Thus, the ESVC approach is not a correct representation for the flow of value in this context. The flows of value between First Nations and their land and sea Country forms the focus of this report.

Whilst the SEABORNE project uses some language and terminology from the United Nations System of Environmental Economic Accounting Ecosystem Accounts framework (United Nations, 2021) (e.g. extent and condition), the SEABORNE project did not seek to develop data to be used in SEEA Ecosystem Accounting framework. See Footnote 3 for more information on this.

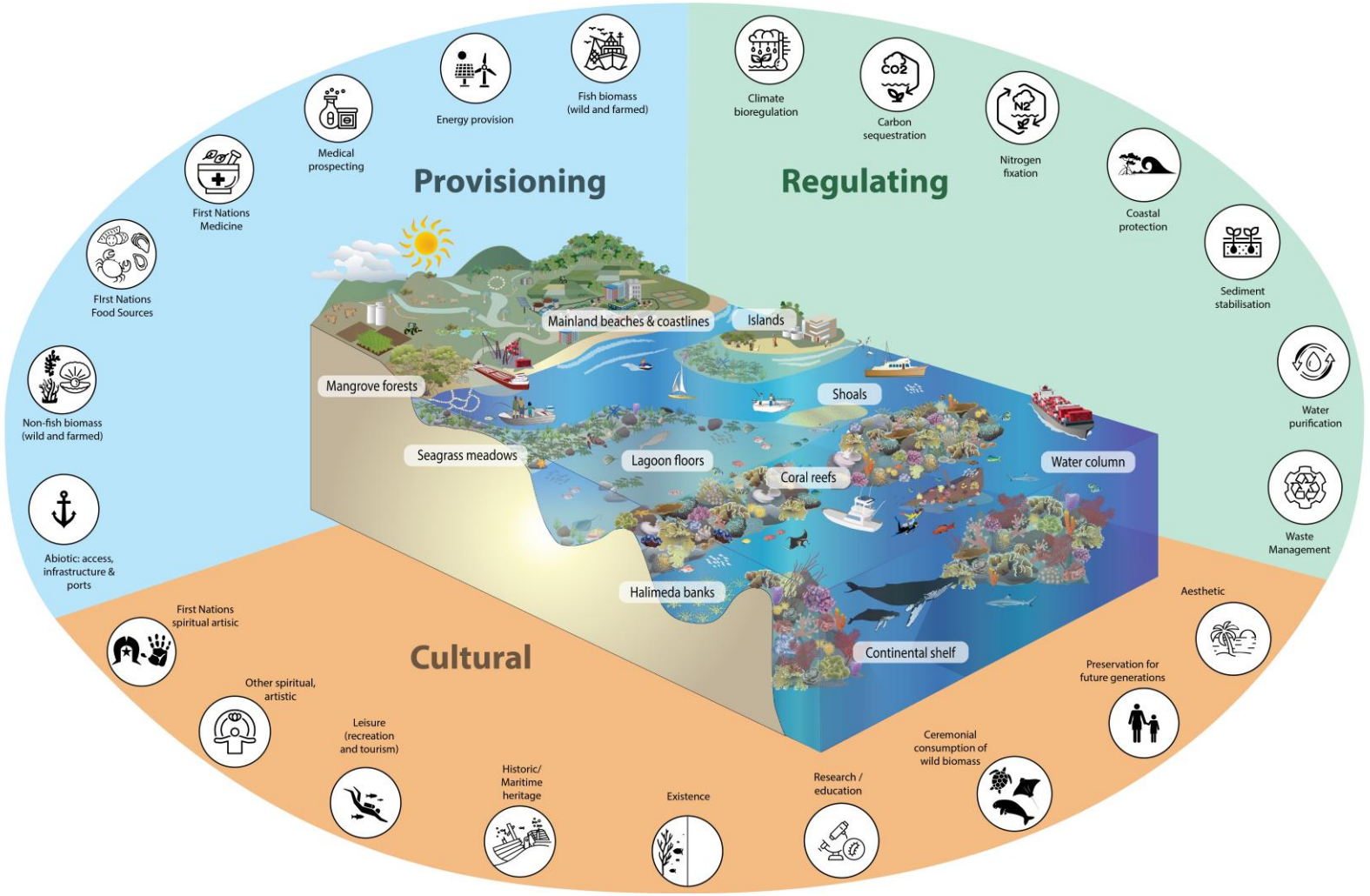


Figure 2: Priority ecosystems and their services focussed upon in the SEABORNE project

Source: De Valck et al. (2023)

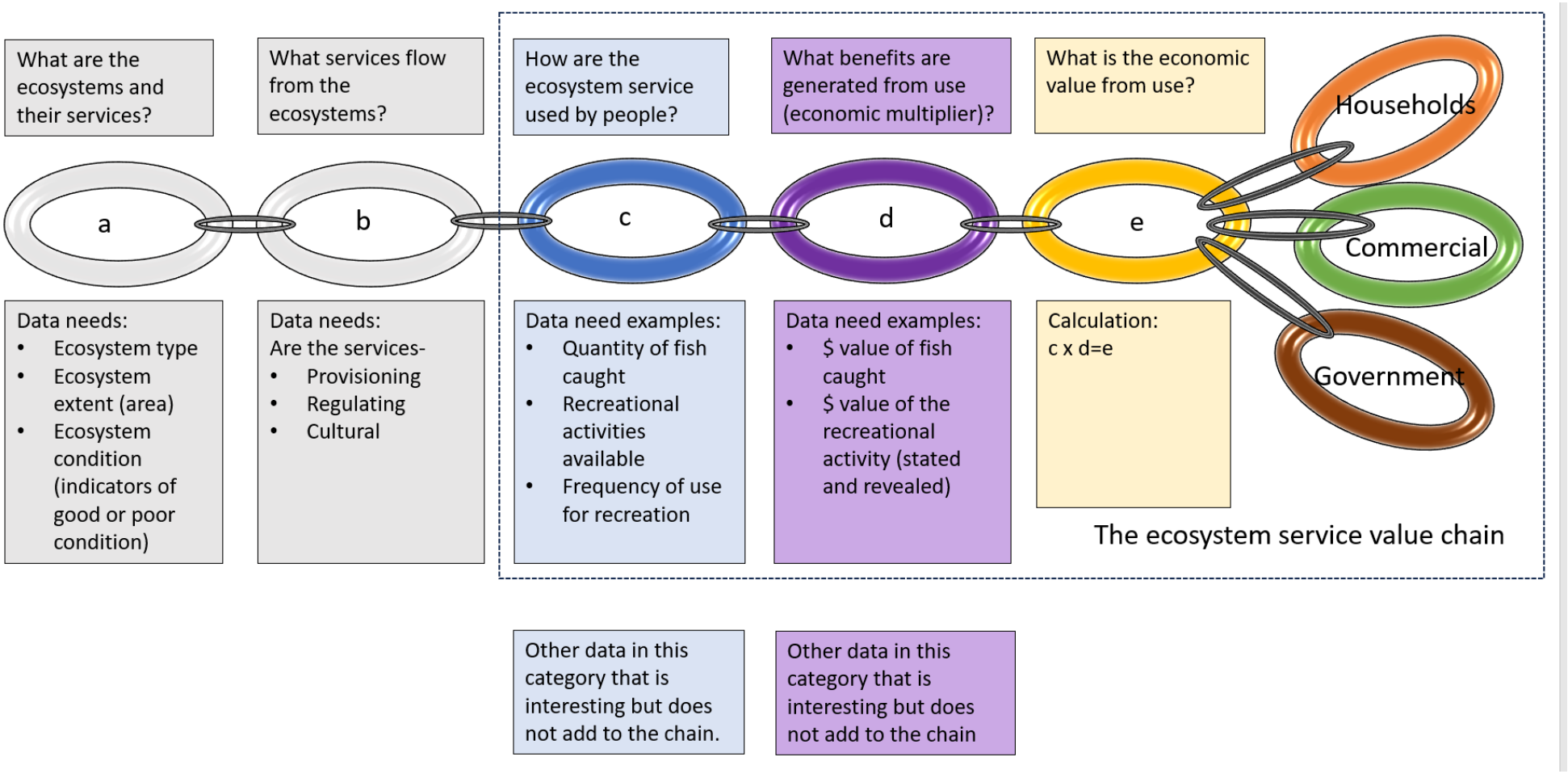
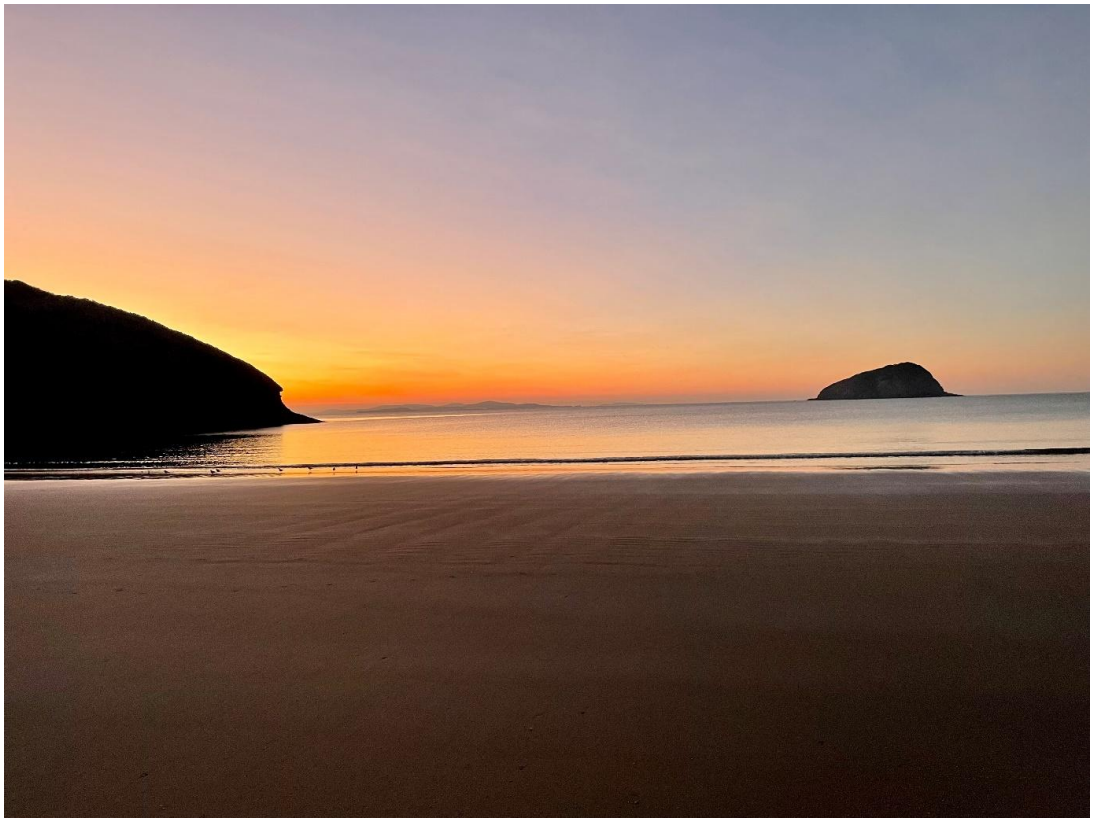


Figure 3: The Generic Ecosystem Service Value Chain (ESVC) concept

Part II Exploring First Nations perspectives of connections to Country and monitoring programs, within CAPOM and KCB



3 Introduction to Part II: Exploration of First Nations perspectives of connections to Country and monitoring programs, within CAPOM and KCB

In Part I the ESVC concept developed by the SEABORNE project was presented. As previously discussed, the objective of the SEABORNE project is to improve understanding about who is using the Great Barrier Reef (GBR; the Reef), how the Reef is being used and the benefits enjoyed from this use, focussing on existing data. The ESVC concept has been found to provide a useful model to structure and present the available data to provide this understanding of who is using the Reef, how they are using it, and the flow of benefits that result.

In Part II the question of who is using the Reef, how the Reef is being used and the benefits enjoyed from this use, are explored from the perspective of First Nations peoples within our two spatial focus areas of CAPOM and KCB (Figure 1). We first describe the context for our work, providing examples from the literature to illustrate previous research exploring First Nations perspectives (section 3.1). We then discussing matters that can arise when monitoring and data collection programs are conducted on the Country of First Nations peoples, including issues relating to Indigenous Cultural and Intellectual Property and to data sovereignty (section 3.2).

3.1 First Nations perspectives of connections to Country

As described previously, the ESVC concept (Figure 3) is built around the linear flow of benefits provided by ecosystems, known as ecosystem services, which provide benefits to people, to businesses and to society as a whole as represented by government (Figure 4). Within the ESVC model, the various beneficiaries of the flow of ecosystem services and benefits are shown at the right-hand side; First Nations peoples form a subset of Household beneficiaries, whilst First Nations owned and managed corporations form a subset of Commercial beneficiaries of the ESVC.

Australia's First Nations peoples have lived on and cared for their Country for more than 60,000 years (Rasmussen et al., 2011). First Nations peoples worldviews have developed over this time, being embedded within and defined by their relationships to their Country and to their people, where Country can be seen as kin or family (Graham, 1999, Salmón, 2000). Compared to the western science based worldview of the human - natural environment system, the First Nations peoples perspective adopts a holistic, spiritual, cultural, and nature-centric view (Pascual et al., 2022). First Nations peoples recognise the benefits provided to people from the natural environment, whether captured by the term ecosystem services or Nature' Contribution to People (Díaz et al., 2018). However, First Nations peoples worldviews also recognise the reciprocal benefits provided to the environment by the actions of people, (variously described as stewardship, conservation, management, caring for Country, peoples contribution to nature) (Matuk et al., 2020, Comberti et al., 2015). A further key difference frequently observed between First Nations peoples and western science perspectives relates to the separability or interconnectedness of the various components of the environment and of society, and of the flows between the two (Stoeckl et al., 2018). For example, the western science view of the flow of

ecosystem services from the Reef to the final beneficiaries is depicted in Figure 4, where the Reef is considered as a number of different and separable ecosystems (coral reefs, lagoon floors etc) and the various flows of ecosystem services are categorised within three main groups (provisioning, regulating and cultural), each of which can be further sub-divided into specific services (e.g. fish biomass, coastal protection, leisure activities etc). This linear and separable flow of benefits from separable ecosystems to people and businesses is encapsulated within the ESVC concept (Figure 4), but contrasts strongly with the circular, interconnected nature of the connections between people and nature as seen from First Nations perspectives depicted in Figure 5, based upon research partnering with northern Australian First Nations groups (Larson et al., 2023, Jarvis et al., 2022, Stoeckl et al., 2021).

Based upon this prior understanding of First Nations perspectives of peoples connections to Country, the SEABORNE project team did not seek to apply the standard ESVC concept to our work with First Nations peoples. Rather, researchers sought to work separately with a number of First Nations groups to explore their perspectives regarding the uses of and activities conducted on their sea Country, also touching on their perceived values of their sea Country, and the benefits that flow from people-Country connections.

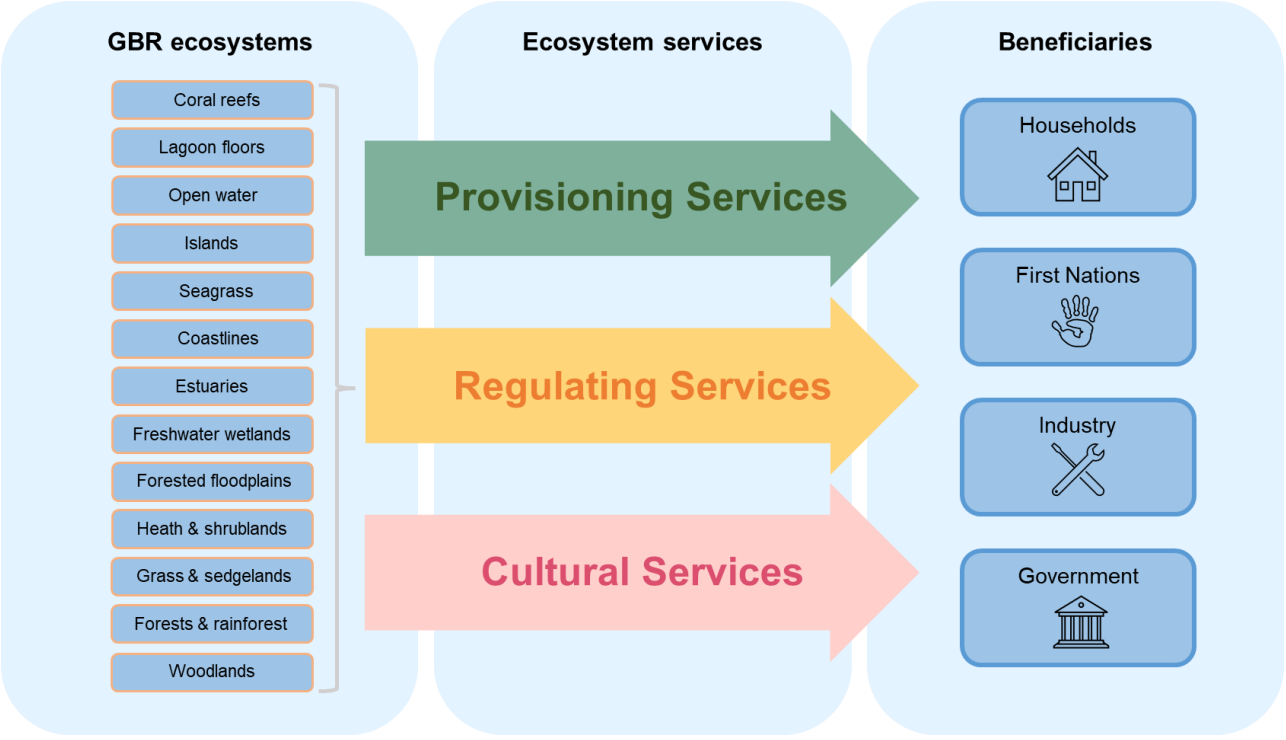


Figure 4: The generic ESVC concept (Figure 3) is underpinned by the concept of a linear flow from ecosystems to people.

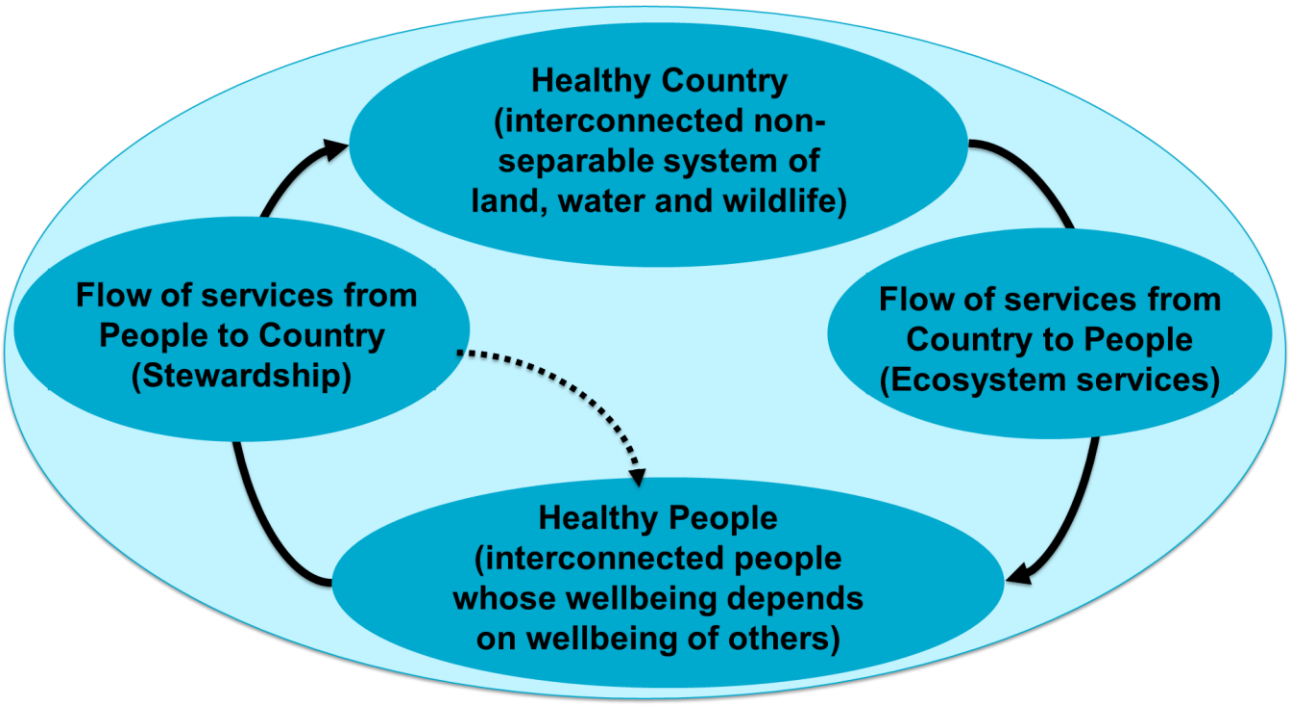


Figure 5: Depiction of the circular and inseparable flow of benefits between Country and people based upon previous work with First Nations peoples. Adapted from work reported in Stoeckl et al. (2018), Larson et al. (2023), (Stoeckl et al., 2021) and Jarvis et al. (2022).

3.2 First Nations monitoring and data regarding use and users of Country and resultant benefit flows

First Nations peoples have a wealth of traditional cultural and ecological knowledge, having sustainably managed their land and sea Country for many thousands of years. If monitoring programs could fully engage with First Nations peoples, and successfully weave their traditional knowledge systems with scientific knowledge systems, this collaboration is likely to enhance knowledge and management practices, (Tengö et al., 2017) enhancing the sustainable management and use of the Reef for the benefit of First Nations and non-Indigenous peoples alike. Such collaborations, which *when conducted appropriately* have been described as 'right way science', are thus mutually beneficial (McKemey et al., 2022).

When seeking to collaborate appropriately with First Nations peoples for research and monitoring activities on and about their Country, there are many different important factors that need to be considered; some are still to become generally accepted practices when implementing monitoring and collecting data across the Reef and its catchments. A discussion of key aspects of best practice is set out in section 3.2.1 and the context of monitoring within the GBR region is discussed within section 3.2.2.

3.2.1 Important considerations when collaborating for monitoring and data collection with First Nations peoples

Whilst all data collection activities should adopt the FAIR principles (Findability, Accessibility, Interoperability, and Reusability), when working with First Nations peoples it is also important to adopt the CARE principles (Collective Benefit, Authority to Control, Responsibility, and Ethics)

(Global Indigenous Data Alliance (GIDA), 2020). These complement the important principles of Free, Prior, Informed Consent (FPIC), sharing of benefits, and protection of Indigenous Cultural and Intellectual Property (ICIP), as backed by various UN declarations (UNDRIP, 2007, CBD, 1992, UN, 2014). ICIP issues go beyond ensuring that Indigenous knowledge is owned and used by, and for benefit of, the First Nations peoples, and includes desires to keep some aspects of cultural knowledge and data private rather than publicly available. Within the Reef and catchments region, specific guidelines have been developed to safeguard the Indigenous knowledge of the Traditional Owners of the region (Markwell and Associates Pty Ltd, 2020). Appropriate conduct of research and monitoring activities on First Nations peoples land and sea Country also invokes important questions of data justice (Robinson et al., 2023).

3.2.2 A very brief commentary on research, monitoring and data collection across the Reef and Reef catchments involving First Nations peoples

There are more than seventy First Nations groups whose land and sea Country encompasses part of the Reef and its catchments[7]. First Nations Peoples maintain strong connections to their Country, culture and heritage, and many groups aspire to, and are achieving, increasing involvement in the management and monitoring of their Country. The achievement of their aspirations is supported by GBRMPA, which is committed to increasing co-management of the Reef with the Traditional Owners of the region, alongside programs such as the Traditional Use of Marine Resources Agreements (TUMRAs)[8], and the Queensland Government's Indigenous Land and Sea Rangers program[9].

There have been very many different short and long-term monitoring and research projects and programs implemented over many years that have sought to measure, monitor and report on the health of different aspects of the GBR ecosystems, the different uses and users of the Reef and the benefits that flow from those uses. Many of these monitoring and data collection activities are directly or indirectly funded by Federal and/or State Government and are frequently managed by large western science focused research organisations including CSIRO and AIMS, the University sector, and by Government bodies such as the Great Barrier Reef Marine Park Authority (GBRMPA) and Queensland Parks and Wildlife Services (QPWS).

To date, the majority of research and monitoring activities across the Reef and the Reef catchments have been designed to meet the needs of Government, rather than being driven by First Nations peoples to meet their own needs for monitoring and managing their Country. However, the involvement of First Nations peoples within the monitoring activities has grown steadily over time, with First Nations people frequently involved as participants within monitoring teams. For two case study regions, the SEABORNE project sought to explore the activities that First Nations groups had been involved in and explored how these programs and projects fitted within the aspirations each group held for the future, for their country and their people.

[7] https://www2.gbrmpa.gov.au/learn/traditional-owners/reef-traditional-owners

[8] https://www2.gbrmpa.gov.au/learn/traditional-owners/traditional-use-marine-resources-agreements

[9] https://www.qld.gov.au/environment/plants-animals/conservation/community/land-sea-rangers/about-rangers

4 Introducing our First Nations partners, and the workshop held with these groups

We first introduce the First Nations groups who participated in this project in Section 4.1, then in Section 4.2 we summarise the workshop aims and activities and the context within which each of the workshops took place.

4.1 Introduction to the participating First Nations groups

The SEABORNE project researchers reached out to a number of First Nations groups within the CAPOM and KCB regions, seeking groups who were willing to be involved. Whilst there are a number of First Nations peoples who are responsible for managing TUMRA, the boundaries of only four TUMRA fell within the SEABORNE case study regions (see Figure 6). For each group approached, initial contact was made by phone and email with the relevant Aboriginal Corporation responsible for managing the TUMRA. For groups who expressed interest, the initial contact was followed by an online presentation by the SEABORNE researchers. These online meetings explained the aims, activities, and expected outputs and outcomes of the SEABORNE project. Sufficient details were provided to enable each group to make a free, prior, fully informed decision prior to consenting to be involved.

For those group that consented to partner with the project, contracts were negotiated to formalise the arrangements and to ensure the cultural and intellectual property rights of the First Nations peoples involved were appropriately protected. All activities of this project were conducted following the requirements of the CSIRO and JCU Human Research Ethics Committees. Research project approval was granted from CSIRO (reference CSIRO HREC 023/23) and from JCU (Reference JCU HREC H9163).

Following the initial engagement and consultations phase, four First Nations groups from the CAPOM and KCB regions agreed to participate within the SEABORNE project. Each of these groups are described within the following sections.

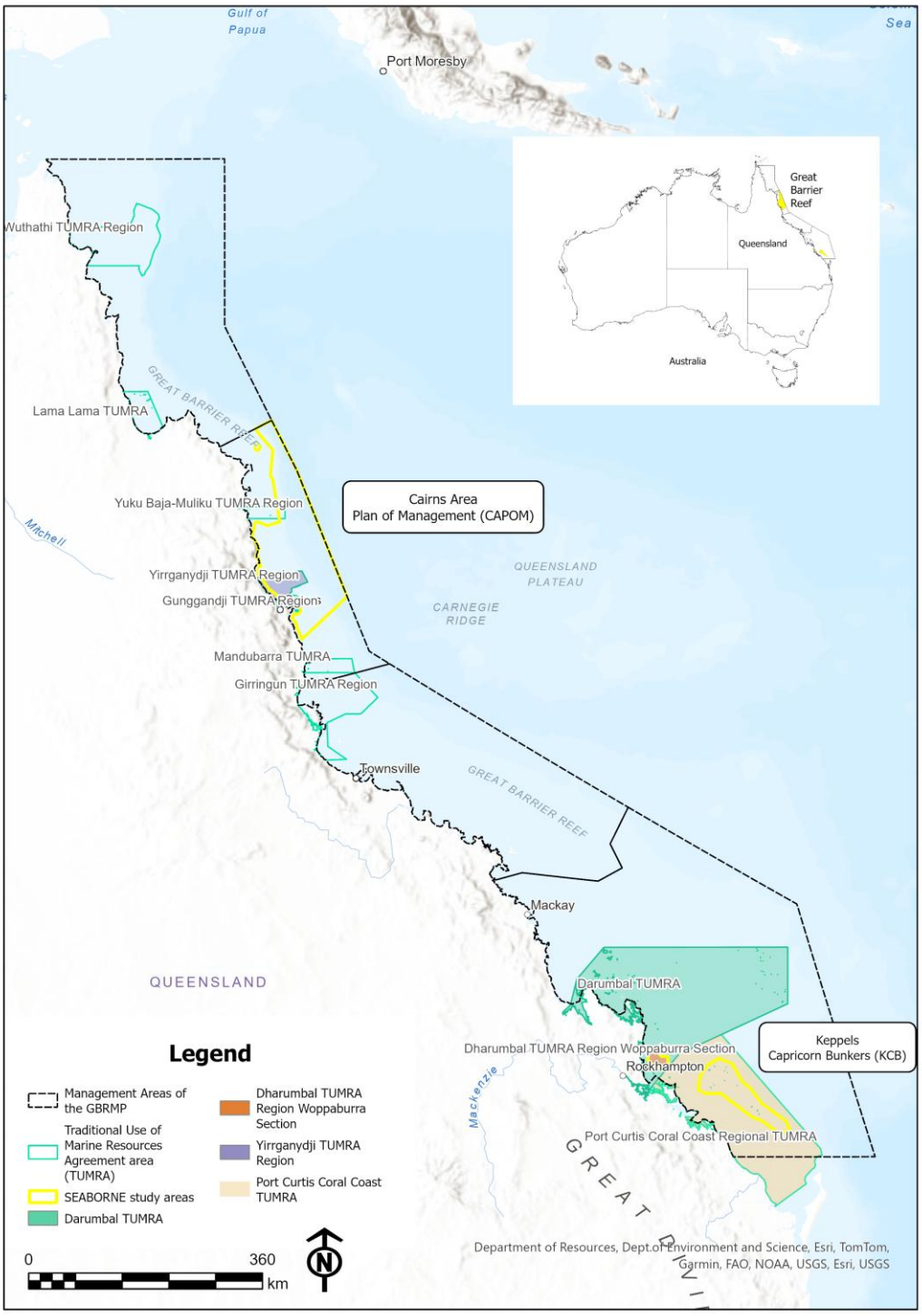


Figure 6: Map of GBR region indicating all TUMRA boundaries, highlight the TUMRA located within the SEABORNE case study regions.

4.1.1 Yirrganydji people represented by Dawul Wuru Aboriginal Corporation

The Yirrganydji people are one of four First Nation groups in the Cairns region with rights recognised over sea Country. The Yirrganydji Traditional Use of Marine Resources Agreement (TUMRA) (Figure 7) was accredited in April 2014, covering an area of sea Country between Cairns and Port Douglas. The Yirrganydji TUMRA is managed by Dawul Wuru Aboriginal Corporation and provides the Yirrganydji people with the ability to protect and care for their marine resources and

to assume a leadership role in improving social, economic, and cultural outcomes for the region. Dawul Wuru is an Aboriginal owned, managed and governed community organisation, established in 2010 to protect, secure, support and promote the rights and interests of local Aboriginal Traditional Custodians. In addition to managing the TUMRA, Dawul Wuru AC also manages the Yirrganydji Indigenous Land and Sea Ranger Program, the Junior and Cadet Ranger Program, the Estuarine Crocodile Monitoring Program, the On-Country Maintenance Program, and the Regional Indigenous Fashion and Textiles Showcase (RIFTS).

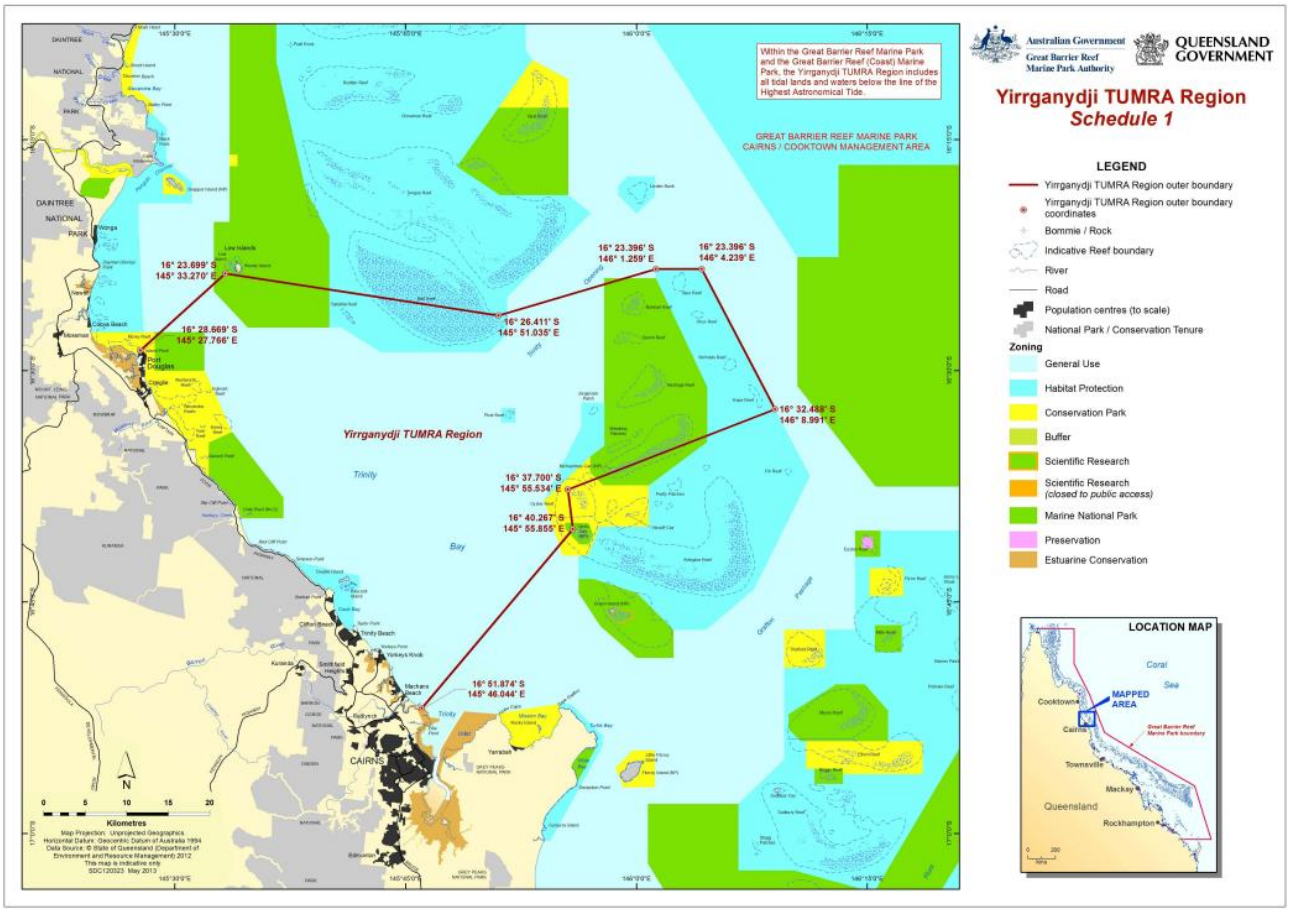


Figure 7: Map indicating location of Yirrganydji TUMRA (accessed 30th July 2023 from https://elibrary.gbrmpa.gov.au/jspui/handle/11017/3936)

4.1.2 Darumbal people represented by Darumbal Enterprises Pty Ltd

The Darumbal People are the Traditional Custodians of the Rockhampton and Capricorn Coast Area. Native Title was initially determined over part if their Country in June 2016, with their second claim over remaining Country in December 2023. The Darumbal Traditional Use of Marine Resources Agreement (TUMRA) is managed by Darumbal Enterprises (ABN 97 114 189 178), and was established by the claimants to the Darumbal People native title claim (Tribunal File No: QC97/21). The Darumbal TUMRA (Figure 8) was accredited in December 2021 for a duration of 15 years. It covers an area of approximately 36,606km2 of the Great Barrier Reef Marine Park; excluding the Woppaburra TUMRA area around Woppa (Great Keppel Island) and Konomie (North Keppel Island). The northern boundary extends from the Fitzroy River in the south, adjoining the Port Curtis Coral Coast Regional TUMRA, and includes all lands and islands (excluding the

Woppaburra TUMRA). The Darumbal TUMRA Working Group is made up of Darumbal Elders, Land and Sea rangers, and project administrative support staff.

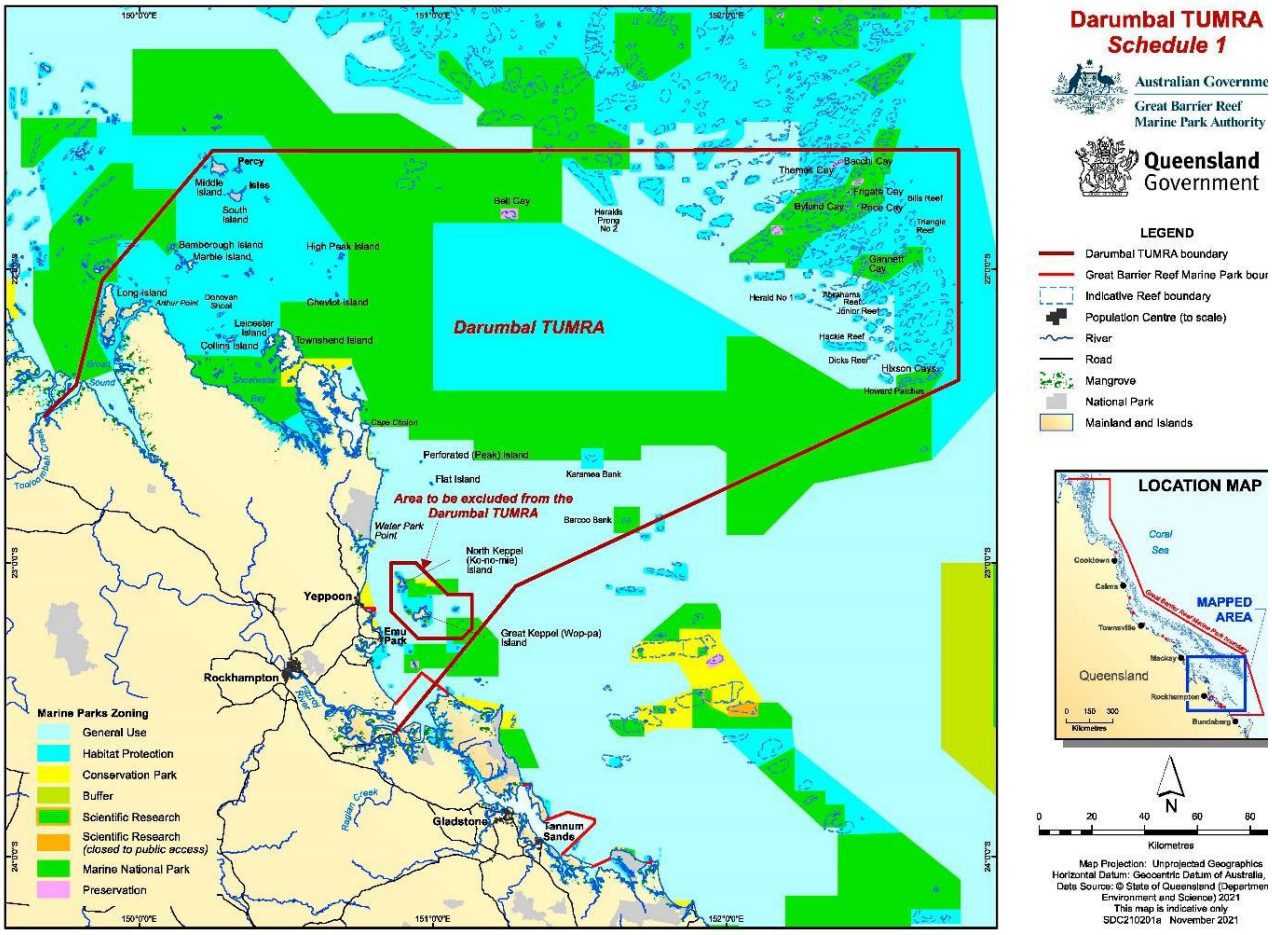


Figure 8: Map indicating location of Darumbal TUMRA (accessed 30th July 2023 from https://elibrary.gbrmpa.gov.au/jspui/handle/11017/3937)

4.1.3 Bailai, Gurang, Gooreng Gooreng, Taribelang Bunda People represented by Gidarjil Development Corporation Ltd

The Port Curtis Coral Coast (PCCC) First Nations groups include the Gooreng Gooreng, Bailai, Gurang and Taribelang Bunda people. Native title was determined for the Bailai, Gurang, Gooreng Gooreng, Taribelang Bunda People in November 2017, and their Registered Native Title Body Corporate is First Nations Bailai, Gurang, Gooreng Gooreng, Taribelang Bunda People Aboriginal Corporation RNTBC (ORIC Indigenous Corporation Number 8650). Their traditional Country spans the Bundaberg, Gladstone and North Burnett regions, covering approx. 19,583 km2 of land and 26,636 km2 of sea Country. The Gidarjil Development Corporation Ltd (ABN 6909493586) is a registered charity, working as an agent for the PCCC Traditional Owners. The Port Curtis Coral Coast TUMRA (Figure 9) was accredited in August 2011 and reaccredited in April 2019 for a duration of 10 years. It covers an area of approximately 26,386km2 of the Great Barrier Reef Marine Park. The TUMRA area extends from Burrum Heads, south of Bundaberg, north to and including the waters around Curtis Island off Gladstone.

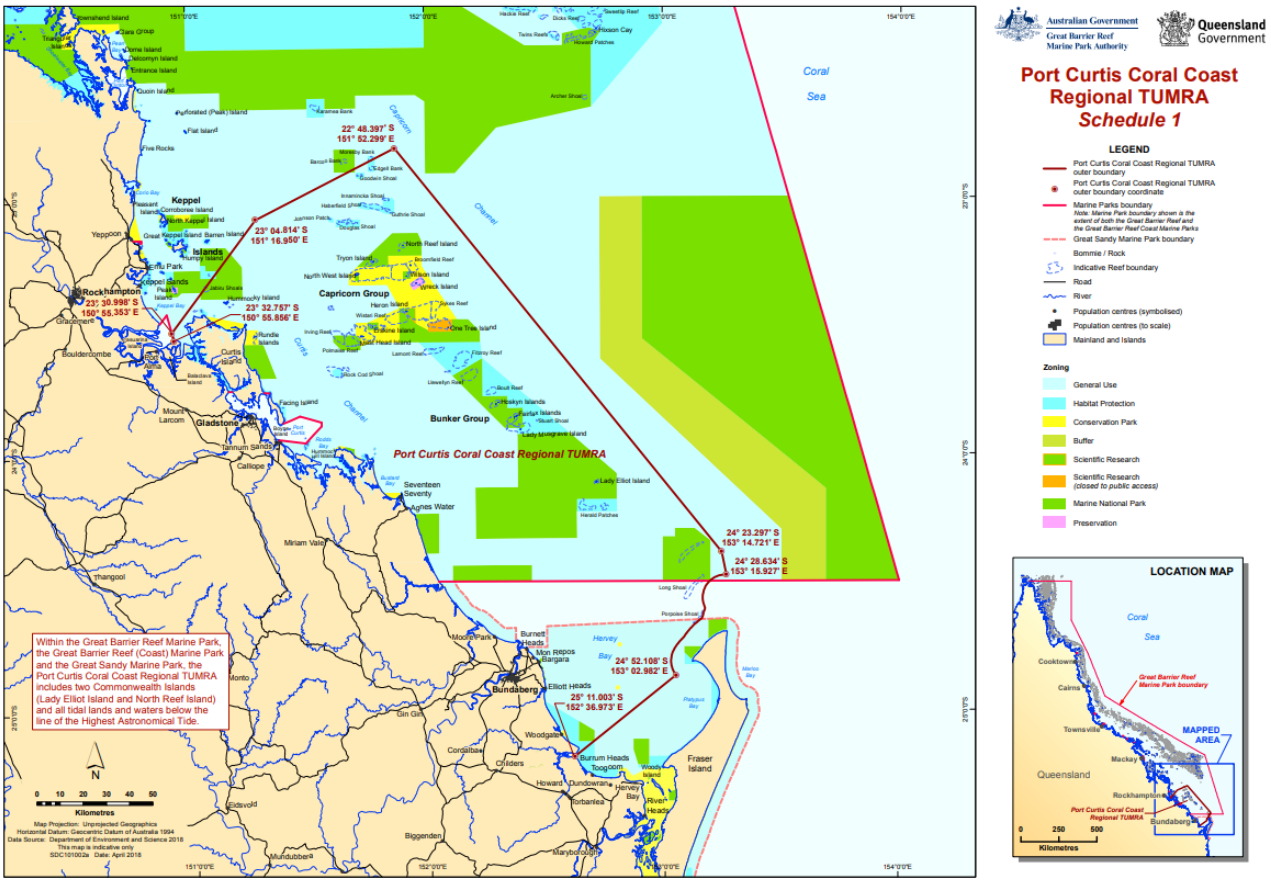


Figure 9: Map indicating location of Port Curtis Coral Coast TUMRA (accessed 15th November 2023 from https://elibrary.gbrmpa.gov.au/jspui/handle/11017/3922)

4.1.4 Woppaburra people represented by Woppaburra Saltwater Aboriginal Corporation

The Woppaburra People are the Traditional Custodians of the Sea Country off the coast of Rockhampton around the Keppel Islands, covering 17 islands including two major islands; Wop-pa (Great Keppel Island) and Ko-no-mie (North Keppel Island). The Woppaburra People lodged a Native Title Claim (Tribunal file no. QC2013/0081) in 2013 by the Woppaburra Applicant Group (Robert Muir Senior and Others v State of Queensland & Ors) and determination of the entire area was successful in 2021. The Woppaburra Traditional Use of Marine Resources Agreement (Figure 10) is managed by Woppaburra TUMRA Steering Committee (WTSC). The Woppaburra TUMRA was accredited in June 2014 and covers an area of approximately 561km2 of the Great Barrier Reef Marine Park for a 10-year term.

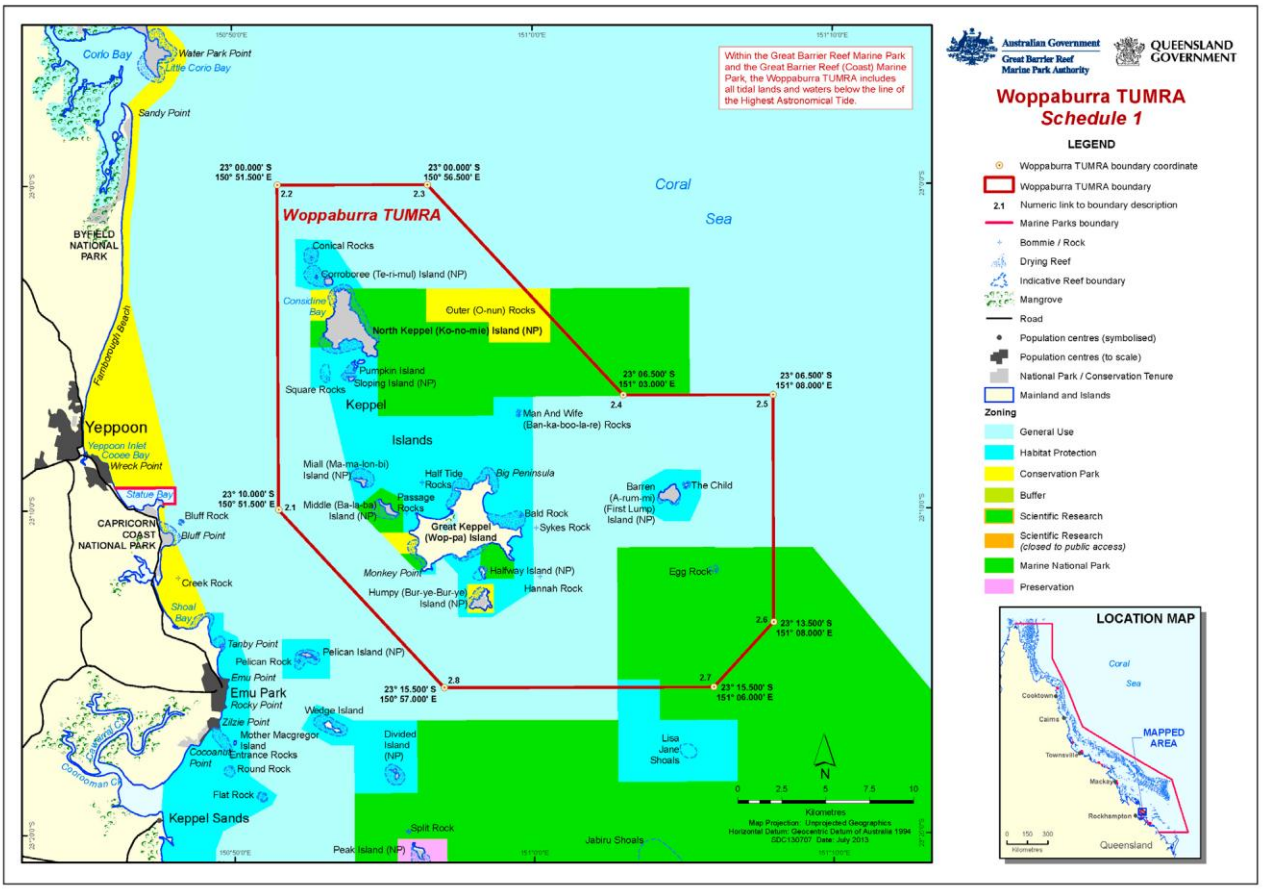


Figure 10: Map indicating location of Woppaburra TUMRA (accessed April 2024 from https://elibrary.gbrmpa.gov.au/jspui/handle/11017/3126)

4.2 Summary of First Nations workshops: aims, activities, contexts

Each workshop sought to address three key aims which are described below in section 4.2.1. The precise activities developed for the workshops were designed to be flexible, ensuring the agenda could be adapted to fit within the context within which the workshop was held, and the time available. However, the core activities at each workshop were consistent, and are described in section 4.2.2. The contexts for the workshops with the four groups are described in section 4.2.3. The findings and recommendations from the workshops are set out in the individual workshop reports, which are introduced and summarised in Section 5 of this report.

4.2.1 Workshop aims

We sought to partner with First Nations groups, each with land and sea Country along the coast of the GBR, seeking:

1) to explore their perspectives of the use and benefits provided to their people by their traditional Country, and to consider how well these differing worldviews align with the western science perspective underpinning SEEA EA;
2) to understand the monitoring activities they have been involved in on their Country to date; and

3) to explore their aspirations for monitoring and management of Country in the future, including identifying existing data gaps, and suggesting additional datasets and information that would be beneficial for their future caring for Country practices.

4.2.2 Workshop activities designed to address the three workshop aims

To address aim 1:

For each workshop, participants were requested to talk about their sea Country – talking about the many uses and benefit flows between their people and their sea Country, the activities that take place on their Country and the values that they hold with regard to their Country. Participants were requested to note ideas down on sticky notes, or if they preferred, to talk about their ideas for the facilitators to note down on their behalf. The sticky notes were placed on the butcher's paper as the ideas came to the participants, with no attempts to organise or theme the ideas initially, so that the flow of conversation was not interrupted.

When the flow of new ideas slowed, the participants were then requested to organise the sticky notes in a natural way that made sense to them, grouping similar values, activities or uses together. Discussions continued through the grouping process, and any new ideas that were generated were added to the sticky notes and included within the organising process. The participants were then asked to develop names that captured the concepts within each group, to identify that theme. Participants were encouraged to share their stories and explain the ideas and grouping of themes during and after the grouping process.

To address aim 2:

Workshop participants were encouraged to list and describe the formal ways that they, through their TUMRA and/or Ranger activities have been involved in monitoring their sea Country. They were asked to include monitoring programs that related to the health of their Country, and specific species found there, in addition to any monitoring of activities that take place on Country. Participants were also requested to talk about the different organisations they have worked with as part of these monitoring activities. The discussions generally extended beyond purely monitoring activities; participants were keen to describe their ways of caring, nurturing and managing Sea Country, many of which were practiced alongside or as part of their monitoring activities.

In some of the workshops post it notes were used to assist the participants to develop and record key ideas; in other workshops this activity was less structured and instead involved the participants within a group discussion on the topic.

To address aim 3:

As the final session of the workshop, participants were asked to think about their aspirations for future monitoring activities that they would like to lead or be involved in, based around where they see the existing gaps in data and activities. Participants then discussed their ideas, explaining how fulfilling these aspirations would assist with their managing and caring for Sea Country. As for the activities to address aim 2, some of the workshops used post it notes to assist the participants to develop and record key ideas; in other workshops this activity was less structured and instead involved the participants within a group discussion focused on aspirations and data gaps.

4.2.3 Workshop contexts: location and timing

One workshop was held with each of the First Nations groups who agree to partner with Seaborne researchers for this project. The workshops were organised in conjunction with the relevant corporations responsible for managing each groups' TUMRA activities. Summarised details of each workshop can be found within Table 1.

Table 1: Details of workshops held with First Nations partners for this project

CORPORATION WE PARTNERED WITH	WORKSHOP DATE	WORKSHOP LOCATION	CONTEXT	NUMBER OF PARTICIPANTS
Dawul Wuru Aboriginal Corporation	21st June, 2023	Cairns, on Yirrganydji Country	Full day dedicated workshop	10
Darumbal Enterprises Pty Ltd	26th June 2023	Emu Park, on Darumbal Country	Half day dedicated workshop	7
Gidarjil Development Corporation	2nd November 2023	Burnett Heads, on Port Curtis Coral Coast Country	Followed on from TUMRA meeting	17
Woppaburra Saltwater Aboriginal Corporation	18th November 2023	Brisbane. Not on Woppaburra Country	Followed on from Annual General Meeting	12

Part III Findings from First Nations workshops

5 Introduction to Part III

Part II described and documented

Summary of existing literature regarding FN perspectives

Introduced the FN groups we partnered with

Summarised the aims and objectives of the workshops held with our FN partners

Part III will provide a summary of the findings from those workshops. Further details of each workshop can be found in the specific workshop reports:

- Workshop with Dawul Wuru: Brian Singleton, Gavin Singleton, Melanie Mitchell, Warren Singleton JNR, Jai Singleton, Tulowah Prior, Matthew Skeene, Ashlyn Skeene, Warren Singleton SNR, Lloyd Singleton, Diane Jarvis, Victoria Graham, and Anthea Coggan with support from Dawul Wuru Aboriginal Corporation. Report on the SEABORNE workshop with Dawul Wuru Aboriginal Corporation, representing Yirrganydji Rangers & TUMRA Working Group. CONFIDENTIAL.
- Workshop with Darumbal: Graham, V., Mann, M., Warcon, L., James, H. G., Johnson, M., Watts, K., Hatfield, K., Mann, A., Jarvis, D and Coggan, A., with the support of the Darumbal TUMRA working Group. (2023) Report on the SEABORNE Workshop for Darumbal. CSIRO, Australia. https://doi.org/10.25919/mcn6-mv06.
- Workshop with Gidarjil: Jarvis, D., Tiger, L., Holden, M., Lawton, K., Parsons, J., Eade, D., Rowe, K., Saltner, E., Little, D., Saltner, E., Saltner, E., Blackman, J., Allen, M., Brown, D., Pippen, J., Purcell, D., Terare, S., Terare, E., Graham, V., Coggan, A., with the support of the Gidarjil Development Corporation Ltd (2024) Report on the SEABORNE Workshop for Port Curtis Coral Coast TUMRA and Gidarjil. CSIRO, Australia. https://doi.org/10.25919/mcn6-mv06
- Workshop with Woppaburra: Graham, V., Muir, R., Cummins, M., Van Issum, S., Boustead, B., Smith, V., Cummins, G., Bruce, M., Cummins Snr, G., McArdle, S., Jarvis, D., Coggan, A. (2024) Report on the SEABORNE Workshop for Woppaburra. CSIRO, Australia.

5.1 Workshop activity one: Exploring FN connections to Country and perspective of benefit flows between people and Country

During the first session during the separate workshops held with each of our partner First Nation groups, participants were requested to talk about their connections to their Sea Country, including: the many uses and benefit flows between their people and their Sea Country; the activities that take place on their country; and the values that they hold with regard to their Country. Ideas generated were then grouped by the First Nations participants into themes. The specific ideas and themes raised by each group were specific to their own peoples' worldviews and reflected the specific context of each group. Whilst some concepts and themes were specific to particular groups, similarities could be seen between some of the themes that emerged. This

suggests that there are some connections, uses and benefit flows that appear to relate to most First Nations peoples, whilst others are context specific.

Whilst the many uses and benefits of the Reef, and barriers that impact on use and benefits, are context specific, a key theme from all groups was their strong connection to their sea Country, and the importance placed by the groups on caring for their Country. The strong two-way connections between people and Country is encapsulated in the following quote:

> *"Land is nothing without people, people are nothing without Country"* [Dawul Wuru workshop participant]

The key concepts and ideas emerging from each workshop are captured within Figure 11 (Dawul Wuru), Figure 12 (Darumbal), Figure 13 (Gidarjil) and Figure 14 (Woppaburra). Whilst each groups' mental model of their connections to, and values of, their sea Country vary, a key theme in each is the importance of culture, which underpin and overlaps almost all the uses of, and benefits from, Country that were identified.

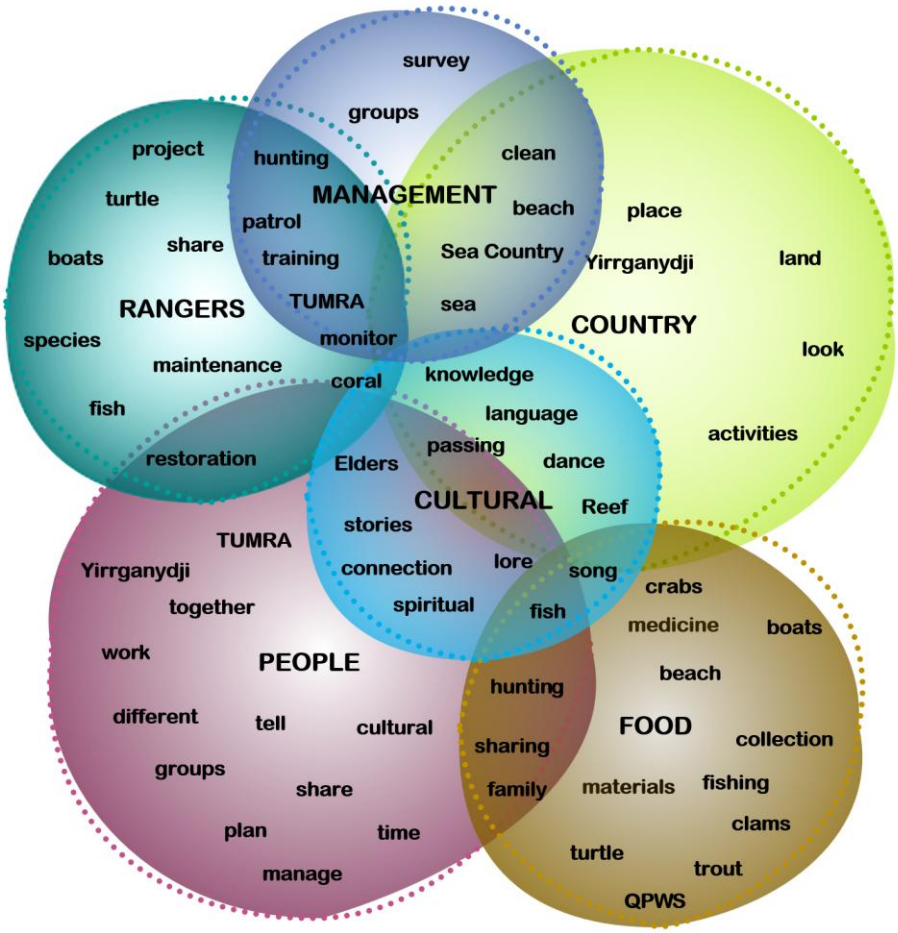


Figure 11 Key concepts emerging from workshop with Dawul Wuru Aboriginal Corporation

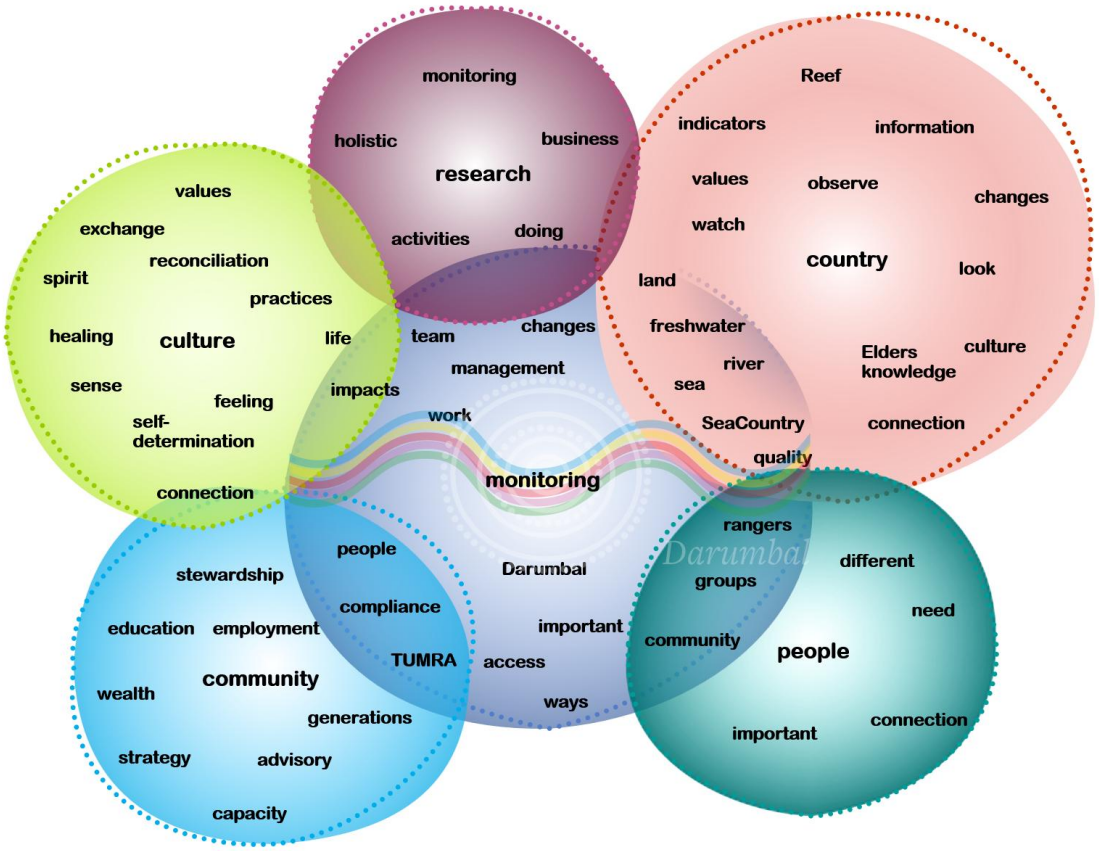


Figure 12 Key concepts emerging from workshop with Darumbal Enterprises Pty Ltd

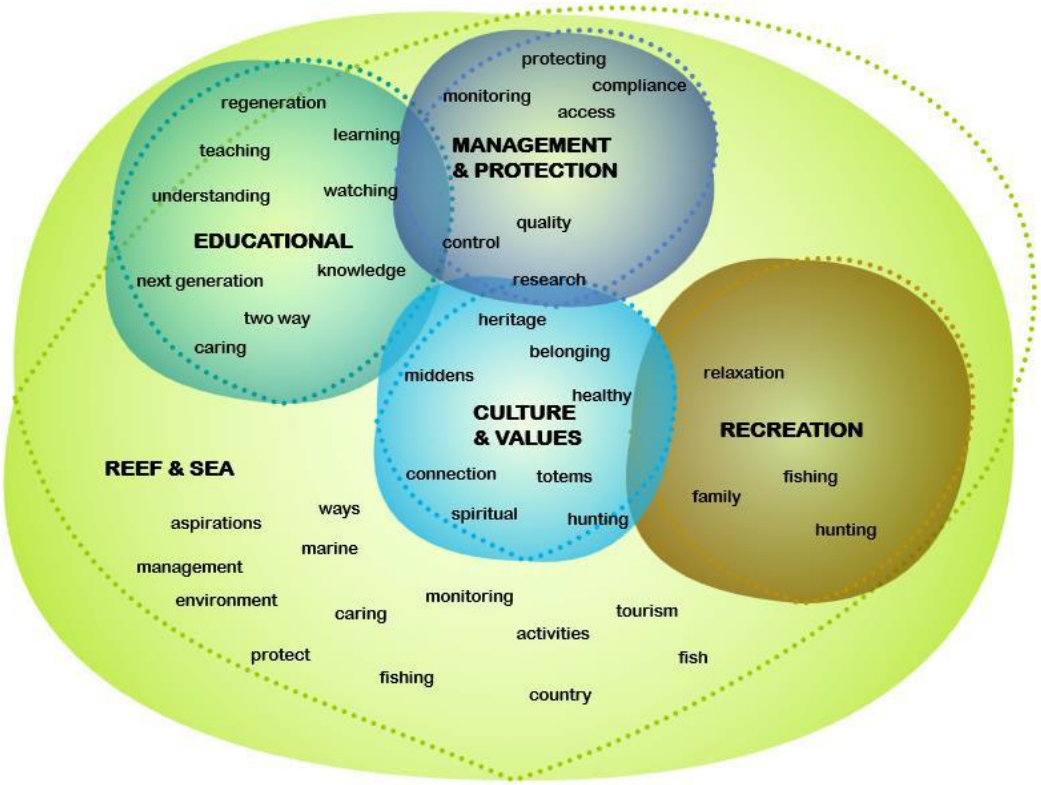


Figure 13 Key concepts emerging from workshop with Gidarjil Development Corporation Ltd

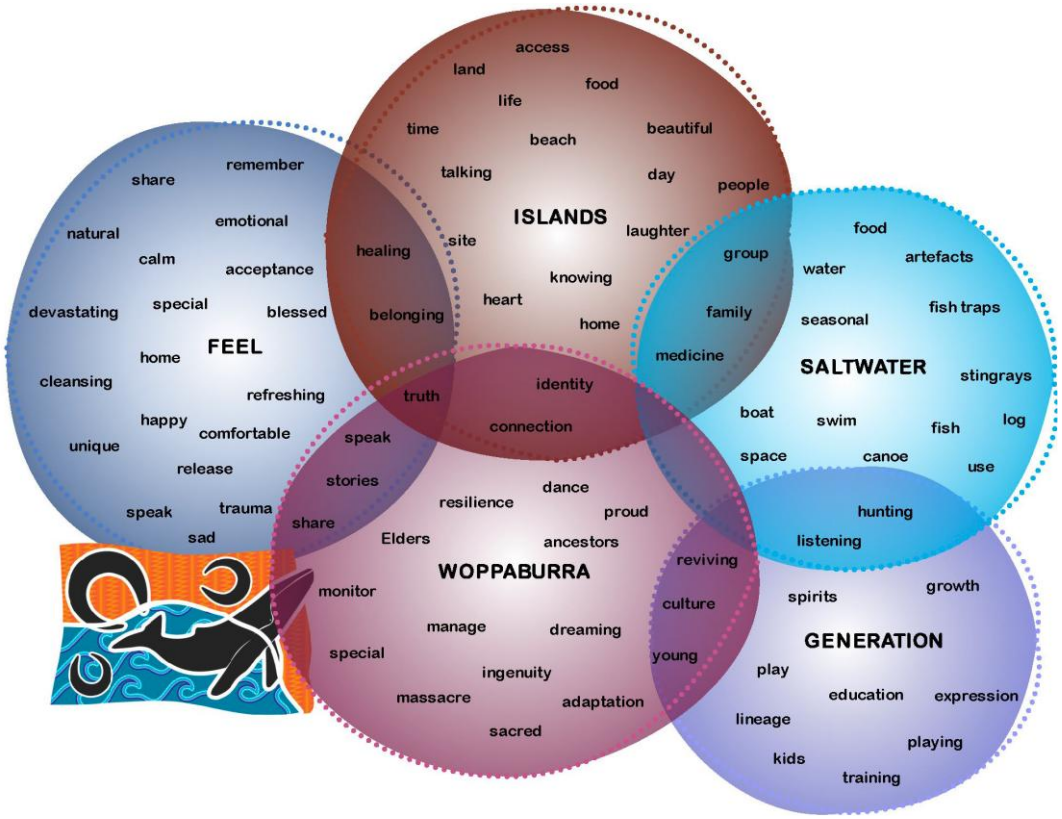


Figure 14 Key concepts emerging from workshop with Woppaburra Saltwater Aboriginal Corporation

Furthermore, it was clear that none of the groups considered the flow of services between nature and people to be separable, rather the system is considered holistically, comprised of interlinked and inseparable components. For example, from the Yirrganydji perspective, people and the environment are considered intrinsically interlinked; the connections between environment and people from the Yirrganydji perspectives described by the Dawul Wuru workshop participants is shown in Figure 15.

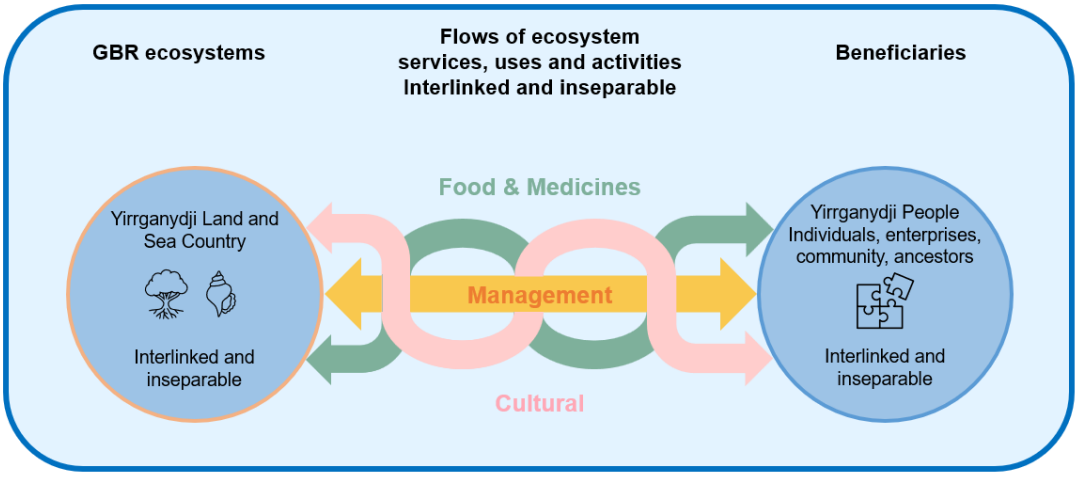


Figure 15 Revised model of flows between people and Country from Yirrganydji perspective that emerged from the workshop with the Dawul Wuru Aboriginal Corporation, depicting the two-way interconnected flows between interlinked and inseparable Land and Sea Country and People

Further details and discussion can be found within the detailed reports on the workshops with each of the groups.

5.2 Workshop activity two: Exploring current and recent monitoring activities

During the second session during the separate workshops held with each of our partner First Nation groups, participants were requested to talk about the recent (last few years) Sea Country monitoring and management activities that they had been involved in. They were also asked about the various organisations that they had partnered with for these various activities.

The discussions revealed that each of the First Nation groups had been involved in a very wide range of monitoring and management activities across land and sea Country. Key terms used by the groups to describe their activities are shown in (Figure 16). The activities could be broadly grouped as follows:

- General Reef related programs – Eye on the Reef, Reef Guardians
- Coral health
    - Coral monitoring
    - Assisting with coral spawning
    - Reef restoration activities such as MARRS stars and other programs that seek to promote coral restoration.
- Crown of Thorns related– including monitoring and eradication activities
- Compliance monitoring
- Water quality monitoring

- Fauna and flora monitoring, including bird surveys, turtle monitoring, mangroves monitoring.

More details on the specific management and monitoring activities conducted by each group can be found in the detailed workshop reports. A key feature common to all groups was that the vast majority of management and monitoring activities are conducted by the groups in partnership with other organisations; partnerships are summarised in section 5.2.1. Of key interest to project SEABORNE is the type and availability of data generated by these activities. The programs and data are discussed further within section 5.2.2.

Figure 16 Word cloud presenting the key terms used by the First Nations groups to describe their monitoring and management activities, as described by the participants during the workshops.

5.2.1 Partnerships for monitoring and management

The groups revealed that they had partnered with very many organisations across a wide range of management and monitoring activities. The most mentioned partnerships were with JCU, GRMPA, AIMS and with State and National Parks organisations, particularly Queensland Parks and Wildlife Service. The key partners are represented within (Figure 17). Partners included a wide range of organisations, which could be categorised as follows:

- Research organisations e.g. CSIRO, universities, AIMS
- Government organisations at Federal, State and Local levels
- Other Reef Traditional Owner groups, individually and as part of regional alliances
- For profit organisations such as tourism operators, Cairns Airport

- Conservation organisation such as Tangaroa Blue.

Figure 17 Word cloud presenting the organisations that have partnered with the First Nations groups for monitoring and management activities, as described by the participants during the workshops.

Whilst the groups were appreciative of the opportunities offered by their partners, there was a clear aspiration to move forwards to a position where the First Nations groups are leading the partnerships and making the decisions (discussed further below within section 5.3 on aspirations). Weaknesses of the current models noted by the groups included:

- Prioritisation: Monitoring priorities of the community may differ to those making management decisions who are not living on Country. Community priorities may be more holistic, long term and grassroots (e.g., employment and other flow on benefits), whereas priorities of others may be species-specific and compliance focussed. Partners may also prioritise different locations to those that would be preferred by the First Nations groups, for example focusing on sites considered high value to the tourism industry rather than locations of high priority to First Nations people.

> *"When people make policy decisions about Country without being on Country, the meaning is lost"* [Darumbal workshop participant].

- Trust and commitment to genuine partnership: A lack of trust in managing agencies was noted by some groups, which can be exacerbated by high staff turnover in partner organisations. Good partnerships require strong and trusting personal relationships which take time and effort to build and maintain.

> *"If they want genuine partnerships, relationships, they need to take the time. Everyone can say that you're busy, but you can put time aside to do that kind of stuff"* [Darumbal workshop participant].

- Activities conducted separately, lack of holistic management: Different projects and activities involve engaging with different partners, who separately drive the activities. Silo rather than integrated approaches reduce opportunities for projects to complement each other and deliver synergies.
- Traditional owners can report non-compliance but lack enforcement powers: First Nations groups play an important role in compliance, but can only monitor and report back to their partners. That is, they can provide the eyes and ears, but have no regulatory or enforcement powers themselves.

5.2.2 Data from management and monitoring activities

The table below (Table 2) refers to the programs and activities specifically mentioned by each group within the workshops. It is important to note that this table is unlikely to be fully comprehensive, each of the groups are likely to be, or have been, involved in many other activities beyond those described in the limited time available in the workshop. Thus, this should be interpreted as a limited subset of activities, indicating the broad types and variety of activities that the groups participate in.

Table 2 Summary of monitoring and management programs described during workshops with First Nations groups

Types of monitoring activities	Dawul Wuru	Darumbal	Gidarjil	Woppaburra
General programs – Eye on the Reef, Reef Guardians, Local marine advisory committee		✓		
Coral - Reef restoration (RRAP, MARRS stars), coral spawning, coral monitoring	✓		✓	✓
Crown of Thorns related	✓	✓		
Marine Park compliance related	✓	✓		✓
Water quality related		✓	✓	✓
Fauna and flora				
- **Turtles**	✓		✓	
- **Birds**	✓			✓
- **Seagrasses**		✓	✓	
- **Other fauna**	✓			✓
- **Other non-fauna**	✓		✓	✓
Terrestrial – monitoring/managing general environment health, rubbish, feral/pest species, weeds, compliance	✓	✓	✓	

Two major issues/challenges to monitoring and managing Country were noted by participants: issues of physical access for monitoring, and issues of access to the data collected by the monitoring activities.

- Physical access: It was noted that limited access influences all monitoring and caring activities on sea Country, including islands. Examples include:
    - The Woppaburra participants talked about how difficulties in travelling to their Country from where they live, and the cost of travel, combine to provide barriers to being on Country.
    - Yirrganydji participants describes how they need to partner with tourism or research partners to enable them to access sea Country.
    - Gidarjil participants described problems in being able to access sea Country from land, lack of access to cultural heritage sites, and lack of access to parts of their river and sea Country.
- Data access: It was noted that with many projects, whilst the Rangers are involved in the monitoring and data collection activities, the actual recording of data is done by the partners, who then hold the primary data. Whilst in most instances this information is shared back with the Rangers in meetings and within reports, this is likely to be in summarised form. Thus primary data held by First Nations groups is limited.

Potential issues of data sharing were also noted. When data is collected in partnership with other organisations, funded by the partners, the contractual arrangements often restrict rights to share the data more widely. This can act as a further challenge to data access.

Workshop participants identified a number of gaps in existing monitoring programs, as follows:

- Details of recreational and commercial fishing activities within their sea Country, and impact of this on health of Country
- Details of tourists and cruise ships visiting their sea Country, and impact of these visitors
- More holistic (less species specific) monitoring of fauna and flora

5.3 Workshop activity three: Exploring aspirations for the future

Aspirations could be classified as: short to medium term ambitions, many of which are already being actively worked towards; and longer-term blue sky thinking ambitions.

An example of the transition over time was provided by Dawul Wuru. The group clearly articulated that they would like to be at least involved, and ideally taking the lead, on all activities on their Country. It was noted for activities like the Crown of Thorns Starfish (CoTS) culling, initially the tourism industry had performed the work. Over time Traditional Owners have become involved in partnering with others for doing work like this, including monitoring and culling, with training provided as necessary to enable this to happen. Thus, the shorter-term aspiration is to build capacity and gain experience from partnerships. Then in the longer term, they envisage being able to play the leading role in collaborations and partnerships, or being able to initiate work independently, rather than working in partnerships led by other organisations.

Woppaburra participants also talked about pathways, explaining how, for them, a focus on training the next generation of Woppaburra youth was a high priority objective. This involves providing a development pathway for junior rangers to learn the skills required for achieving longer term aspirations. Further, the Woppaburra participants shared their vision of the different states they hoped to visit on their journey from the present to their desired future. The present situation is captured by the phrase "Tide out: just surviving". The following stages "Rising Tide: Stuck in the middle" and "High Tide: Steering from afar" map out a route to Woppaburra peoples increasingly gaining access to and have an increasingly strong voice in influencing what happens on their Country, culminating in the final "King Tide: Making waves for Woppaburra" where they have a strong presence on and control over Country, and over their future.

Darumbal participants expressed their desire for leadership in monitoring activities. They described an important priority, to integrate traditional forms of knowledge, such as the "Elders database" with contemporary datasets, to support management decisions via the "third dimension". They described how bringing different types of knowledge together was both a challenge and a priority.

Gidarjil participants explained how they should be fully involved in all stages of decision making and management of their Country. This should be applied from initial consultation through to the implementation of monitoring and management (caring for Country) activities that take place on their Country and about their Country. They explained how the Traditional Custodians should be empowered to lead these activities, and furthermore they should have full access to the data that is collected by these activities on their Country.

Darumbal participants recommended greater co-operation and collaboration across First Nations groups to share resources, knowledge and ideas, bringing together their different resources and challenges, to drive more holistically aligned monitoring towards the big picture Reef 2050 goals.

Longer term / blue sky aspirations for all four groups included the key goal of First Nations people leading and overseeing management of all activities on their sea Country, including setting the monitoring and management priorities. The workshop discussions indicated that that the First Nations groups are currently playing an important and growing role in monitoring and caring for their land and sea Country, and that their TUMRAs have contributed to this growing role. However, there is a clear appetite for the role and the autonomy of the role to grow further, to enable First Nations peoples to lead such work and have control over the projects that they are involved in.

5.4 Key recommendations emerging from the workshops

Whilst the involvement of First Nations peoples in monitoring and research is increasing, and now includes co-design of activities in some instances, it remains very rare for these activities to be Indigenous led or driven by the needs of the Indigenous peoples. Furthermore, historically, the data collected by the research and monitoring programs across the Reef has been owned and stored by the western science researchers and/or funders. Whilst in some instances First Nations groups are able to keep copies of the data they have helped collect, they are not the primary holders, and managers, of the data.

All groups expressed ambitions to lead monitoring and management projects on Country in future, to be in the position where they can determine what types of projects take place, where they take place, and what happens to the information.

Further resources (including land, a permanent base, boat(s), and access to appropriate training) are required for the Groups to be able to achieve their ambitions, including the support required to enable investment in upskilling and increasing capacity, and developing additional capabilities for leadership and for service delivery.

5.5 Important limitation and recommendation for further research

It is important to note that each individual workshop report, and hence this summary report, is based on the perspectives and knowledge of a sub-group of the broader First Nations communities. Thus, it is recommended that further work be conducted that engages with the broader communities to validate and confirm the perspectives and information shared by the workshop participants.

It is also important to note that the activities and aspirations of each of the four First Nations groups are not limited to those described within this report. Consultations with the broader communities may result in additional aspirations emerging; furthermore, First Nations capabilities and aspirations continue to evolve over time.

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