3

SHARING OUR KNOWLEDGE IN CARING FOR COUNTRY

Authors:
Graham Atkinson, Patricia Marrfurra McTaggart, Gerry Turpin, Rachel Buissereth, Bush Medijina®, Lisa McMurray, Rowan Foley, Nyangumarta Warrarn Aboriginal Corporation RNTBC, Yamatji Marlpa Aboriginal Corporation, Dr Aunty Patsy Cameron, Les Schultz, Cissy Gore-Birch, Emma Woodward, Dennis Chungalla, Heather Wungundin, Mary Aiken, Jean Malay, Bernadette Williams, Tim Cranbell, Josephine Forrest, Marmingee Hand, Ross James, Elizabeth Jingle, Olive Knight, Nathan Lennard, Valerie Lennard, Ileen Malay, Lindsay Malay, Wallace Midmee, Stuart Morton, Chloe Nulgit, Patricia Riley, Ina Shadforth, Jane Bieundurry, George Brooking, Sherika Brooking, Willy Brumby, Victor Bulmer, Virgil Cherel, Ashley Clifton, Sam Cox, Matt Dawson, Alistair Hobbs, Duran Hobbs, Camelia Juboy, Patricia Juboy, Annette Kogolo, Barry Lennard, Con Lennard, Deon Lennard, Nelita Malay, Zenneth Malay, David Marshall, Herbert Marshall, Lezeka Millindee, Diane Mowaljarlai, Andrea Myers, Thomas Nnarda, Joy Nuggett, Lloyd Nulgit, Pansy Nulgit, Anne Poelina, Daniel Poudrill, Joe Ross, Jimmy Shandley, Sandy Skeen, Gordon Smith, Mervyn Street, Pauline Thomas, Bronson Wongawol, Harry Yungabun, Fitzroy High School Students (Arosha Sunfly, Cyntala Cook, Kaunell Shaw, Taliesha Collard, Yvonne Collard), Rosemary Hill, Ilisapeci Lyons, Nat Raisbeck-Brown, Pia Harkness.

HIGHLIGHTS

- Overcoming the trust barrier between traditionally-driven world views and western scientific world views
- Intellectual property: Who owns, controls and has the authority to share Indigenous knowledge with outsiders?
- Cultural protocols must be respected, to enhance trust in sharing of Indigenous knowledge
- Protecting against the misappropriation or misinterpretation of Indigenous knowledge is critical
- Mutually respectful engagement with researchers and other outsiders has potential to provide opportunities for shared story telling
- Opportunities are emerging for sharing knowledge and culture through Indigenous-led enterprises

We document, record and share our knowledge of Country in many different forms including: books and databases about plants and animals (ethnobotany[111], ethnozoology andbiocultural records[112]); via films and maps; by way of artworks and installations; through online collections; and via emerging digital technologies. Sharing knowledge in this way is never simple. In sharing knowledge for which we are custodians or owners, we are accountable to our ancestors; Elders and other members of the language group; and family. Some knowledge is only for the family line. If we share knowledge that is sacred or special there will be consequences – we or other people who record that knowledge or see it – might fall sick or suffer in other ways.

3.1 BUILDING TRUST FOR KNOWLEDGE SHARING AND RECORDING

Patricia Marrfurra McTaggart, a senior Ngen'giwumirri Elder, linguist and custodian of extensive bio-cultural knowledge from the Daly River region of the Northern Territory, told us of her experiences in sharing knowledge (Case Study 3-1). Patricia is a highly skilled biological scientist, weaver, hunter, fisher and gatherer, and is knowledgeable in several Aboriginal languages and dialects. She has engaged with many academics and external research practitioners over the years to share and co-document her extensive biocultural knowledge[12,24,113-115], and likewise supported Elders from other language groups to document their own plant and animal knowledge[116]. Patricia has further chosen to share her knowledge through: engaging with groups from the armed forces to teach them bush skills; teaching visiting university student groups about Indigenous knowledge systems; and running her Fi Tours, in which visitors learn about the complexities of Ngan'gi culture and life through the deceptively simple analogy of weaving Merrepen (Pandanus grass), and making something from nothing.

Patricia's motivations for engaging with different researchers are clear. In describing her reasoning for working on her co-authored book Ngan'gi Plants and Animals, she said[115] (p.6):

> *I wanted to write down all of the Ngan'gi knowledge about plants and animals for the children to have in the future. I wanted to go deep into my culture and try to understand the plant and animal knowledge like my Elders. I wanted to preserve the Ngan'gi names and the whitefela names together in a book to keep it strong.*

CASE STUDY 3-1

Building trust to share our knowledge our way

Authors: Patricia Marrfurra McTaggart and Emma Woodward

- Custodians of knowledge feel an obligation and responsibility to the ancestors to treat knowledge the right way
- There is a process to sharing knowledge which may require complex negotiations
- It takes time for trust to build between knowledge holders and outsiders before knowledge might be shared

Engaging with researchers and other outsiders in place provides opportunity for sharing of knowledge through story telling. However, the information and knowledge Patricia chooses to share is not owned by her. She is the custodian for that knowledge, a strong link in the continuing chain of Ngan'gi biocultural knowledge reaching from the Dreamtime and finding an everchanging path as it is renewed and reconfigured into the future. Patricia's role as a keeper of that strong and sometimes sacred knowledge is underpinned by a stong personal obligation to the Old People to treat it with care. This is a defined cultural responsibility for Patricia that has grown since she was formally handed the role at a meeting of senior Elders when she was a younger woman, and from which point began a more intense period of learning through the Elders.

Patricia recounting stories of fishing for prawns as a young girl: describing the knowledge she and select members of her family hold for finding the prawns; successful techniques for fishing; and containing the animals once caught. Photo: Emma Woodward

Patricia's responsibilities as a senior knowledge holder are all encompassing. She is in ongoing conversation with her ancestors, seeking permission to share knowledge, and in turn the ancestors hold her and other Ngan'gi people accountable to the care and maintenance of knowledge through their actions. The obligations and responsibilities individuals have to the ancestors, in terms of maintaining Ngan'gi connection to Country and ensuring it stays strong, extends to them enacting (and thereby nurturing) their knowledge of hunting, fishing, gathering, seasonal cycles, weather phenomena, and the complex relationships between people, plants, animals and places.

One of the first intense engagements with a researcher, who came from outside the community, was with a government ethnobotanist who expressed an interest in working with senior Ngan'gi knowledge experts to document their plant (and animal) knowledge. Over time the Elders who were involved in these discussions grew their trust in Patricia to play the role of the conduit between the Elders and the enthnobotanist.

They placed their trust in her to share Ngan'gi knowledge ('their' knowledge) with this outsider. Patricia believes that the Elders were watching her before and during this period to see if she demonstrated good judgement and decision making through her selection of specific information to share with outsiders. This period of observation allowed them to build trust in Patricia. Now, most of those Elders have passed way; Patricia is recognised as an Elder, and researchers and others are directed to her by other community members. She feels the weight of expectation of the Elders recently passed, and the ancestors, when making decisions about sharing knowledge. Allowing the time for understanding to grow with outside research

partners, supports the possibility of Patricia building the trust that is required for her to feel confident that shared knowledge will be used the right way – according to her direction.

When asked what *Our Knowledge, Our Way* means to her, Patricia explained:

The first word that came into my head is trust. People will withhold, and listen and watch how someone acts. (We) sit back and watch and listen. It takes a while for people to understand why someone has come (to the community). You have to build trust … people slowly build trust.

Trust will not form and and no engagement will result if people do not attend to social and cultural protocols, for example sitting too close, or touching/bumping Elders. This process of testing someone may take a few visits:

Some of the Old People, I would hear them mumbling 'this man doesn't hear what we are saying. Doesn't believe us. Maybe he should go away and come back again, next time he might get it.'

Knowing what and how Indigenous knowledge documented in the research will be used is crucial. Patricia is concerned about others appropriating Ngan'gi knowledge, language and culture:

When we hear other people use our language and words it makes us cringe inside. How dare they use our language? You have to earn the privilege.

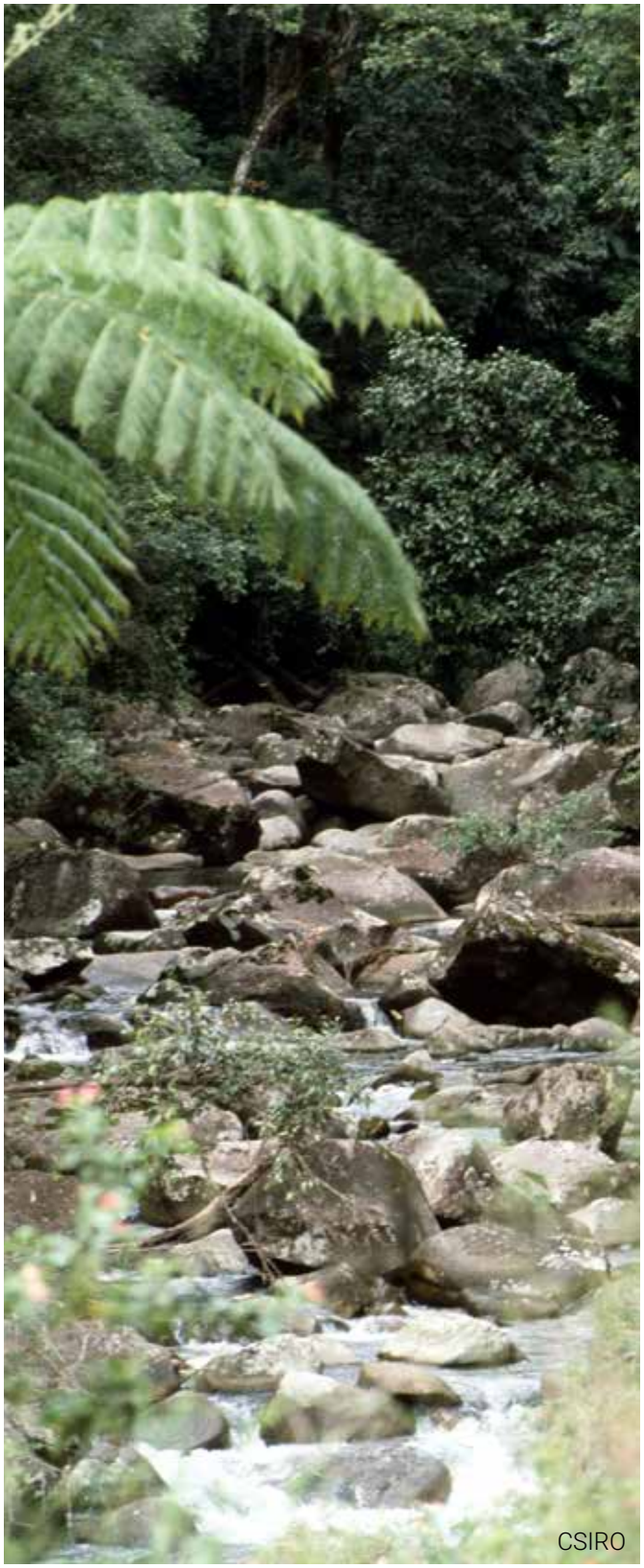
Patricia also enjoys delving deeper into her own knowledge system:

When people like Glenn Wightman (NT Government ethnobotanist) also wanted to talk about plants and animals, what are their names, what are they used for, this was very interesting. It made me wake up deep inside. It woke up old memories, old knowledge, things we did in the past. Things we wanted to keep strong.

Speargrass (*Sorghum intrans*) is a strong indicator species in Ngan'gi Country: many of the season names reflect the life-cycle stage of the grass. Photo: CSIRO

Patricia and her family harvesting Miwisamuy (*Flueggea virosa*): hunting and gathering activities on Country with researchers and other visitors provide a critical opportunity for learning Ngan'gi knowledge and culture.
Photos: Emma Woodward

Gerry Turpin is a Mbabaram Traditional Owner and Award-winning scientist who manages the Tropical Indigenous Ethnobotany Centre (TIEC) at the Australian Tropical Herbarium in Cairns, and spends his days learning from Aboriginal Elders. TIEC is an Indigenous-driven centre that aims to record and document the knowledge and store it for future generations (Case Study 3-2).



CSIRO

CASE STUDY 3-2

Medicinal plants of the Mbabaram people

Authors: Gerry Turpin and Rachel Buissereth

- Indigenous-driven ethnobotany centre led by Aboriginal ethnobotanist
- Bioactivity of medicinal plants project
- Validation of traditional medicinal uses
- Partnership with scientists

Mbabaram Country stretches west from Herberton to Almaden and south from Dimbulah down to Mount Garnett in far north Queensland, Australia. Mbabaram Aboriginal people were originally moved off our Country because of mining and pastoral leases. We have worked hard to get our Country back, and have successfully completed eight of nine native title claims. Today, there are only 300 words left in our language and only a small fraction of Mbabaram people remain on their land.

Mbabaram Land Managers surveying Mbabaram medicinal plants on Country. From left to right: Jordan Turpin, Jermaine Turpin, Valmai Turpin, Gary Congoo, and Cheryl Douras. Photo: Gerry Turpin

A day in the field

With the Tropical Indigenous Ethnobotany Centre acting as a cultural broker, a group of young Mbabaram men and women conducted a survey of plants previously identified by Mbabaram Elders as being traditional medicines. The group learned the skills necessary to identify plants, collect samples, and use Geographic Information Systems (GIS) to record the location, habitat, soil, and geology of the plants. After the collection of these data, plant samples were pressed, tagged and submitted for processing. Through these methodologies, young Mbabaram people learned new skills while spending time out on Country with members of their community.

Mbarabam Elders on our Country. Photo: Gerry Turpin

Working with scientists

Four Mbabaram representatives visited the National Institute of Complementary Medicine at Western Sydney University to observe the testing procedures and meet the participating researchers. Extracts of 18 plant samples were tested for their microbial and antioxidant activity against four different microorganisms. It was found that four samples were able to kill bacteria effectively at low and high concentrations and two samples showed higher levels of antioxidant activity than Vitamin C. Throughout the project, researchers agreed to keep the identity of the samples anonymous to protect Indigenous rights to the knowledge. Likewise, the results of the study were published under joint authorship with Mbabaram people. The co-research methods conducted throughout this study exemplify equitable collaboration between Indigenous people and researchers and provide a foundation for future partnerships.

Visiting the labs at the National Institute of Complementary Medicine, Gerry Turpin and Jordan Turpin. Photo: Tropical Indigenous Ethnobotany Centre

Building on our work with the National Institute of Complementary Medicine, we are exploring the potential of the bioactive materials for wound management together with the Australian Institute of Tropical Health and Medicine at James Cook University.

Want to know more?
Here are some useful links:

- The Living Knowledge Place
  http://www.livingknowledgeplace.com.au/ausmap.php
- Tropical Indigenous Ethnobotany Centre
  https://www.jcu.edu.au/australian-tropical-herbarium/research-and-programs/tropical-indigenous-ethnobotany-centre-tiec
- Books of Aboriginal knowledge of plants and animals, Northern Territory
  https://nt.gov.au/environment/native-plants/aboriginal-knowledge-plants-and-animals

3.2 OUR KNOWLEDGE FOR ENTERPRISE AND ECONOMIC DEVELOPMENT

There are extensive opportunities for sharing of knowledge and culture through the appropriate development and marketing of bush products and on-Country experiences based on our local knowledge.

3.2.1 Bush products

Many of us are pursuing enterprise development on Country, including seeking opportunities to build from our extensive knowledge of plants and animals, to create new and innovative bush-derived products.

The Indigenous-led bush products sector is gaining momentum in Australia, with diverse enterprises adopting different business models to realise success according to their individual goals. The sector incorporates a wide range of enterprises including bush foods, native plant derived industries (seed harvesting, nurseries, cut flowers etc.) and the development of botanicals-based products including bush medicines, essential oils, and health and beauty products.

The Australian bush foods industry is valued at $20 million annually, however it's estimated that Aboriginal and Torres Strait Islander people make up only 1-2 percent of the market presence. The first Bush Foods Symposium was held in Sydney in November 2019, with the aim of increasing Indigenous participation in the growing bush foods industry[117]. Developing enterprises based on Indigenous ecological knowledge creates opportunity for being on Country; strengthens knowledge through sharing (including with youth); and facilitates community engagement. We know that building enterprises and products based on shared Indigenous knowledge requires us to make decisions about those plants and animals the right way, with our businesses often underpinned by a strong *cultural ethic*.

The Yiriman Women's group, working in the Kimberley region of Western Australia, are building Yiriman Women Bush Enterprises[ai] to realise social, cultural and economic goals. The group engages with Elders from four language groups across the Kimberley, and seeks to work with at risk youth, taking them on Country to learn from their Elders through harvesting ingredients to be used in the on-Country development of their skincare range. They promote participation and being on Country, to heal on Country.

They have developed strong protocols for managing their knowledge about plants and bush products. They know there is a need to be strong in knowledge: sharing when there is a need to share; protecting when they need to protect; and extending, using scientific knowledge, when appropriate. These protocols include being in the right relationship with family and with Country.

Figure 3.1. Bush products created by the Yiriman Women's group. Photo: Emma Woodward

ai https://www.yirimanwomen.org/

CASE STUDY 3-3

Bush Medijina®

Author: Bush Medijina®

- Indigenous-led and controlled sustainable, independent enterprise that supports women, culture and community
- Traditional preparation of skincare products supports preservation of traditions and knowledge for future generations
- The enterprise has a strong focus on governance and advocacy, specifically supporting women

We are an Aboriginal owned and run enterprise based in Groote Eylandt, Northern Territory and supported by the Anindilyakwa Services Aboriginal Corporation[118].

Our vision is to be a sustainable, independent enterprise that supports our women, our culture, our community and our future. We support Warningakalina women, to share our culture with others, and to preserve our traditions and knowledge for future generations.

We want to grow our business from a small seed to a giant tree, so it can stay strong, just like our culture

Gayangwa Lalara OAM

We harvest local plants including Merrika (Broad Leaved Wattle), Dumburumba (Native Sandalwood), Mawilyaburna (Liniment), Mamarra (Small Leaved Paperbark), and Mamaburra (Wild Peach Tree), and using recipes passed down to us by our mothers, aunties and grandmothers, we hand-make our skincare products, which we sell online across the globe.

We are governed by an all-female board, and the entire team is made up of women: about eighty percent of us are Indigenous. The enterprise creates regular governance, leadership and women's advocacy opportunities for the team and the wider community throughout the year.

See more: https://bushmedijina.com.au/

Founding member of Bush Medijina®, Gayangwa Lalara, OAM. Photo: Bush Medijina®

Collecting Merrika (Broad Leaved Wattle) (left) and Mawilyaburna (Liniment) (right) to create skincare products. Photo: Bush Medijina®

A selection of Bush Medijina® skincare products and marketing material. Photo: Emma Woodward

3.2.2 Eco-cultural Tourism

Eco-cultural tourism offers opportunities for renewing, strengthening and sharing knowledge, whilst also obtaining economic benefit. There is a growing demand from international and domestic visitors to experience Indigenous culture, and also to visit remote and undeveloped places on Country, as these places are often seen by outsiders as being *wild* and *untouched*. Indigenous eco-cultural tourism enterprises incorporate a range of cultural elements into their visitor experience, including bush skills demonstrations; knowledge of plants for food, bush medicine, arts and craft; hunting, fishing and gathering techniques; and songs and stories of Country. Some tour operators also talk with their clients about experiences with colonisation including the Stolen Generation, and the importance of reconciliation. This adds to the education experience for visitors to Country.

Gooniyandi people run cultural tours in the Mimbi Caves of the Kimberley region, WA. They offer a cultural experience built upon a visit to the Mimbi caves, rich in Aboriginal rock art; sharing of dreamtime stories and knowledge of local bush medicines; a visit (for women only) to the highly significant birthing cave site; and sampling of bush tucker including damper made with native seed.

Sampling bush tucker is a popular aspect of many Indigenous eco-cultural tours, with the subsequent selling of bush tucker related products, sampled as part of the tour, a great way to increase engagement and build enterprise opportunity. Broome-based tourism operator and Nyul Nyul man Robert Dann has been able to expand his business, based on the success of the boab-nut based iced tea drinks he serves to his Kimberley tourism clients. He now uses Boab nuts to create unique products including iced tea, boab ginger beer, boab beer and cosmetic ointments. The business, Bindam Mie, employs local Indigenous people to pick, then process the nuts at a commercial kitchen in the WA regional town of Broome. Boab seeds are used to create oils for use in beauty products and the pulp is ground into a powder for food and beverages.

3.2.3 Indigenous Carbon Economy

There are many different approaches in terms of how Indigenous organisations are participating or aspiring to participate in different aspects of Australia's carbon economy. For example, Indigenous Peoples are building enterprises founded on their knowledge of traditional fire management and experience in burning Country the right way. In northern Australia Indigenous fire methodology, based upon a systematic mosaic approach to early dry season burns across Country[5], has demonstrated both greenhouse gas abatement (compared to uncontrolled wild fires) and carbon sequestration benefits. These two outcomes of traditional fire management practice have created a significant opportunity for engaging in the carbon market.

In northern and central Australia, after securing land tenure, many Indigenous organisations have established land and sea management units, through which carbon market opportunities can be pursued[65]. In other regions of Australia, particularly in the south, Indigenous organisations do not have secure tenure but are looking to secure payment for carbon offset management services through their land and sea management units[65]. In other more remote regions Indigenous organisations have secured land tenure but lack infrastructure such as a ranger group and associated support to develop the economic opportunities offered by carbon offset schemes[65]. A key challenge in the design and evaluation of programs to support enterprises founded upon traditional fire management is the inclusion of culturally-appropriate governance arrangements[65].

CASE STUDY 3-4

Indigenous-led verification and impact measurement of environment, social and cultural values of carbon farming

Authors: Lisa McMurray and Rowan Foley, Aboriginal Carbon Foundation

- For Indigenous-led approaches to be embraced, the narrative around who an expert is needs to be redefined
- Western research methodologies and evaluation practice can be decolonised by developing an evaluation approach that is *of, for, by and with us*
- When the space is created for Indigenous people to lead this work, opportunities for leadership are embraced and an Indigenous voice about the core benefits of carbon farming is amplified

Indigenous carbon farming is an emerging industry and opportunity for on-going 'untied'[aj] income generation for Indigenous communities. Australian Carbon Credit Units (ACCUs) can be generated using the savanna burning methodology administered by the Clean Energy Regulator. The Australian Government through the Emissions Reduction Fund will buy ACCU for 'lowest cost abatement'. However, if carbon farming demonstrates environmental, social and cultural core-benefits then the voluntary market will purchase the ACCU with core benefits for a premium price.

Up until now verification of core benefits has been largely anecdotal and observational. The Aboriginal Carbon Foundation (AbCF) secured funding through the Carbon Plus Fund of the Queensland Government's Department of Environment in 2016 to conduct research and development of a core benefits verification approach. AbCF however, saw an important opportunity in this funding to develop an unorthodox Indigenous-led methodology, where the narrative of an expert is redefined.

The development of this framework involved conversations, community workshops, stakeholder consultations, formal peer review, piloting in two Cape York communities: Mapoon and Kowanyama, and the creation of an industry reference group for the associated Australian Skills Quality Authority (ASQA) approved training course in the measurement of core benefits. The research and development of this Indigenous-led approach took two years.

As the Indigenous carbon industry grows and is recognised as a viable way for the private sector to offset its carbon emissions, the demand for rigorous and independent core benefits measurement will also grow; particularly if companies are claiming to meet UN Sustainable Development Goals (SDGs). Usually this verification

Ranger verifiers Sarah Barkley and Jason Jia interviewing Kowanyama Land and Sea Office Manager John Clark, AbCF staff member Lauren Bowyer documenting.
Photo: Aboriginal Carbon Fund

Kowanyama Traditional Owners using picture cards to identify the most significant core benefits from their carbon farming project.
Photo: Aboriginal Carbon Fund

Ranger verifier Jason Jia facilitates a conversation to determine the key questions the group wishes to know about their identified core benefit of 'their carbon project bringing together western and Indigenous sciences'.
Photo: Aboriginal Carbon Fund

aj Income without any prescribed parameters as to its spending.

would be conducted by an external consultant, most probably a non-Indigenous person in a 'fly in, fly out' manner. AbCF however, has used this opportunity to build Indigenous ownership and leadership of the verification process.

The verification process enables evaluation capacity development of the people closest to carbon farming. Without measurement skills and ability, the participants and affected communities will remain dependent on the involvement of external people who are not as well placed to collect, interpret or communicate accurate and meaningful information about any project's core benefits. Furthermore, First Nations researchers and evaluators have drawn specific attention to the need to decolonise western research methodologies and evaluation practice by developing an evaluation approach that is *of, for, by and with us*.

In practice, this Indigenous to Indigenous philosophy sees verification of core benefits conducted by a team of trained Indigenous experts including rangers, Traditional Owners and community members from across the region where savanna burning is implemented. This principle prevents the extraction of information by external agencies to be used and interpreted without the understanding of, or any required benefit to, the affected community. The approach safeguards Indigenous data sovereignty and ensures the people verifying have strong cultural and project-based knowledge.

Customised picture-based, text light tools facilitate decision relating to:

- what core benefits will be verified
- what information do you wish to know about the core-benefits
- who can you speak with (and in what ways) to attain this information
- what existing information is there to support the triangulation of the data collected.

We suggest that when Indigenous people voice that their carbon projects are working for them, achieving the outcomes that they value most, and when they have the relevant evidence to support their claims, then the environmental, social and cultural core benefits can be verified through this authentic and innovative approach.

3.3 WORKING WITH INDIGENOUS LAND AND SEA MANAGEMENT PROGRAMS AND INDIGENOUS PROTECTED AREAS

The national, state and territory governments have invested substantial resources to support our caring for Country through a range of initiatives referred to here as Indigenous Land and Sea Management Programs (ILSMPs). These programs have supported the employment of many Indigenous land and sea management rangers, with work plans (for example those contained in Healthy Country Plans) developed in consultation with government representatives[119,120]. In 2019, over 900 Indigenous land and sea management rangers were employed under Australian Government-funded programs. Recent research has shown that this investment in ILSMPs makes a significant contribution to regional economies, with the impacts of investment commonly exceeding that of other key regional industries such as agriculture and mining[71].

Rangers' work is diverse and involves many activities: managing fire; controlling weeds and feral animals; monitoring threatened species; removing ghost nets; picking up tons of rubbish washed up on beaches; looking after cultural sites; and more. Rangers do fee-for-service work and some of them run businesses[25,61,63]. Some rangers work on biosecurity and border protection, identifying the illegal movement of people and goods, including foreign fishing[121].

Indigenous Protected Areas (IPAs) are areas of Indigenous community owned and managed lands protected in Australia[ak]. They form the second largest component of Australia's National Reserve System (NRS): nearly 45 percent of the NRS, covering approximately 67 million hectares, and over eight percent of Australia.

ak Interactive spatial data and information about IPAs from the 2016 State of the Environment report is available from https://soe.environment.gov.au/theme/overview/land/topic/overview-state-and-trends-land#terrestrial-protected-areas-and-Indigenous-protected-areas-in-2011-and-additions-for-2016--80156

> The Indigenous Protected Area program was established in 1997 to support Aboriginal and Torres Strait Island Peoples to choose when, where and how they will manage their own Country, combining traditional knowledge with western science.

As of 2019 there were 75 IPAs, with most of them dedicated under International Union for Conservation of Nature (IUCN) Categories 5 and 6, which promote a balance between conservation and other sustainable uses to deliver social, cultural and economic benefits for local Indigenous communities.

Different Indigenous groups have different visions and values for their IPAs. For Yolŋu Traditional Owners and Custodians the overriding value of their IPA is:

> as a cultural space in which terrestrial and marine components, cultural beliefs, practices and obligations as well as animals, plants, ecosystems, and ecological services are integrated in a holistic world-view of "Country"[122].

For Dambimangari Traditional Owners and Custodians, they state their vision as:

- Dambimangari Country is managed by our rules and Dambimangari should have the last word over Dambimangari Country
- We keep our traditional knowledge alive and pass it on to our young people
- We look after animals, plants and cultural places on Dambimangari Country using our traditional knowledge and western research
- We return to Country to live on our Country, work on our Country and have access to our Country
- We control people accessing our Country and have our rangers guide them
- We give our young people education, training, employment and business opportunities on county to look after Country[123] (p8).


Gregory Heath

Indigenous knowledge is vital in IPA management and management plans[90,124]. For example, the Nyangumarta Warrarn IPA, dedicated by the Nyangumarta Traditional Owners and officially recognised by the Commonwealth of Australia on the 23rd of April 2015, is a large area of 28,420 km^2 located in north Western Australia. The biodiversity and cultural resources of the many habitats within the IPA are managed by the Nyangumarta Rangers, who have recently collaborated in the production of a booklet about traditional ecological knowledge (Case Study 3-5).

Indigenous knowledge features in many IPA and Healthy Country management plans and activities around Australia[125]. Some exciting examples include:

- Southern Tanami Indigenous Protected Area Storybook Plan of Management (Warlpiri and English)[al]
- Walalakoo Healthy Country Plan[am]
- Links to Indigenous sea Country management plans[an].

al http://walyaku.org.au

am https://maps.northwestatlas.org/files/montara/links_to_plans/WA/WA_3_Walalakoo_Healthy_Country_Plan_2017_2027_Nyikina%20Mangala%20IPA.pdf

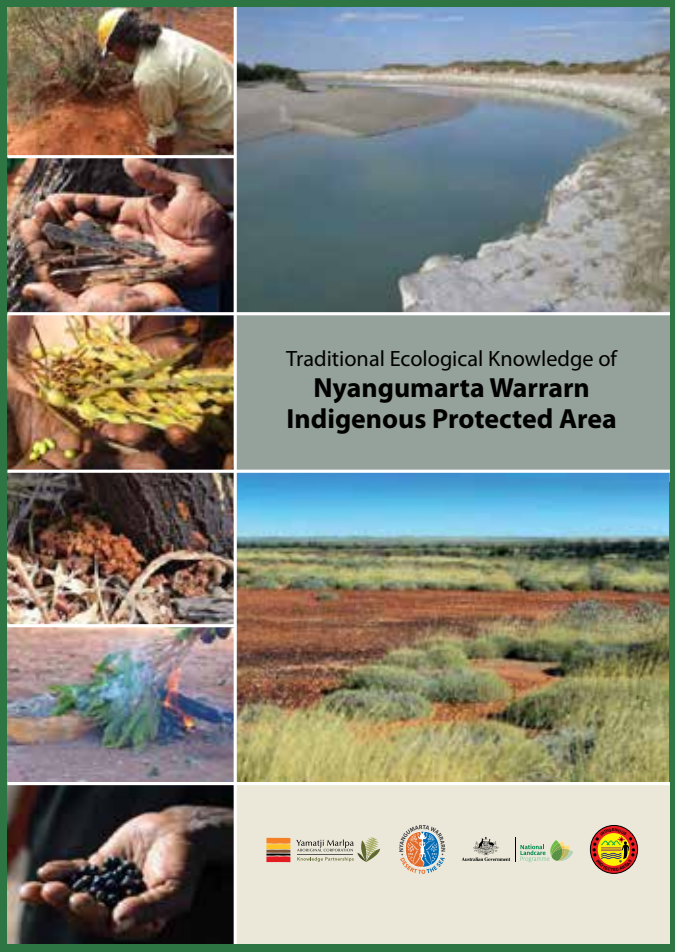
an https://northwestatlas.org/nwa/indigenous/guide

CASE STUDY 3-5

Traditional ecological knowledge of Nyangumarta Warrarn IPA

Authors: Nyangumarta Warrarn Aboriginal Corporation RNTBC and Yamatji Marlpa Aboriginal Corporation

- Traditional ecological knowledge documented to support management of Country, and protect knowledge from being lost as Elders pass away
- Project provided a critically important opportunity for rangers and Elders to come together on Country and share knowledge about Country



The Traditional Ecological Knowledge of Nyangumarta Warrarn Indigenous Protected Area booklet, this project was funded by the Australian Government's National Landcare Program and Indigenous Protected Area Program.

With the support of Yamatji Marlpa Aboriginal Corporation (YMAC), the Australian Government's National Landcare Program, and the Indigenous Protected Areas Program, the Nyangumarta Warrarn Aboriginal Corporation has published a compilation of traditional ecological knowledge (TEK) of the Nyangumarta Warrarn Indigenous Protected Area (IPA).

The booklet is a collection of ethno-botanical information passed down through generations of Nyangumarta people. More than 80 plants were collected, and descriptions of 70 species appear in the book. The data was collected during two surveys of Nyangumarta Country in 2014 and 2015.

Driven by an increasing concern about the loss of knowledge held by Elders when they pass away, the Nyangumarta community worked with Elders to record their knowledge of plants (for foods, medicines, ceremony, artefacts and other purposes) within the IPA. The Yamatji Marlpa Aboriginal Corporation, who has provided support to the Nyangumarta land management program, including training of rangers, organised two ethno-botanical field surveys that involved both Elders and rangers. Given that no Traditional Owners remain living on Country, this was a critically important opportunity for rangers and Elders to come together on Country and share knowledge about Country.

Witchetty grubs in roots of Jimpirriny (Desert Poplar). Photo: Volker Mischker

3.4 WORKING IN CO-MANAGED PROTECTED AREAS

In recent decades, Indigenous Peoples have engaged in various forms of co-management with governments of national parks and other protected areas[126,127]. This has occurred as Indigenous Peoples have progressively demanded greater access to, and decision-making power, over their traditional lands[128]. Some governments have responded to this call by aligning their policy approaches to support co-management[127,128]. Numerous examples of Indigenous-led co-management found across Australia in World Heritage Areas[129], cultural heritage places[74], Traditional Use of Marine Resource Agreements[130], and other arrangements[131], are bringing Indigenous knowledge to the front.

In central Victoria, for example, the Dhelkunya Dja Land Management Board (DDLMB), established under the *Dja Dja Wurrung Recognition and Settlement Agreement 2013* between the state and the Dja Dja Wurrung Clans Aboriginal Corporation, has recently prepared a management plan for six parks and reserves that puts Dja Dja Wurrung knowledge at the forefront. In the words of Mr Graham Atkinson AM, Chairman of the DDLMB:

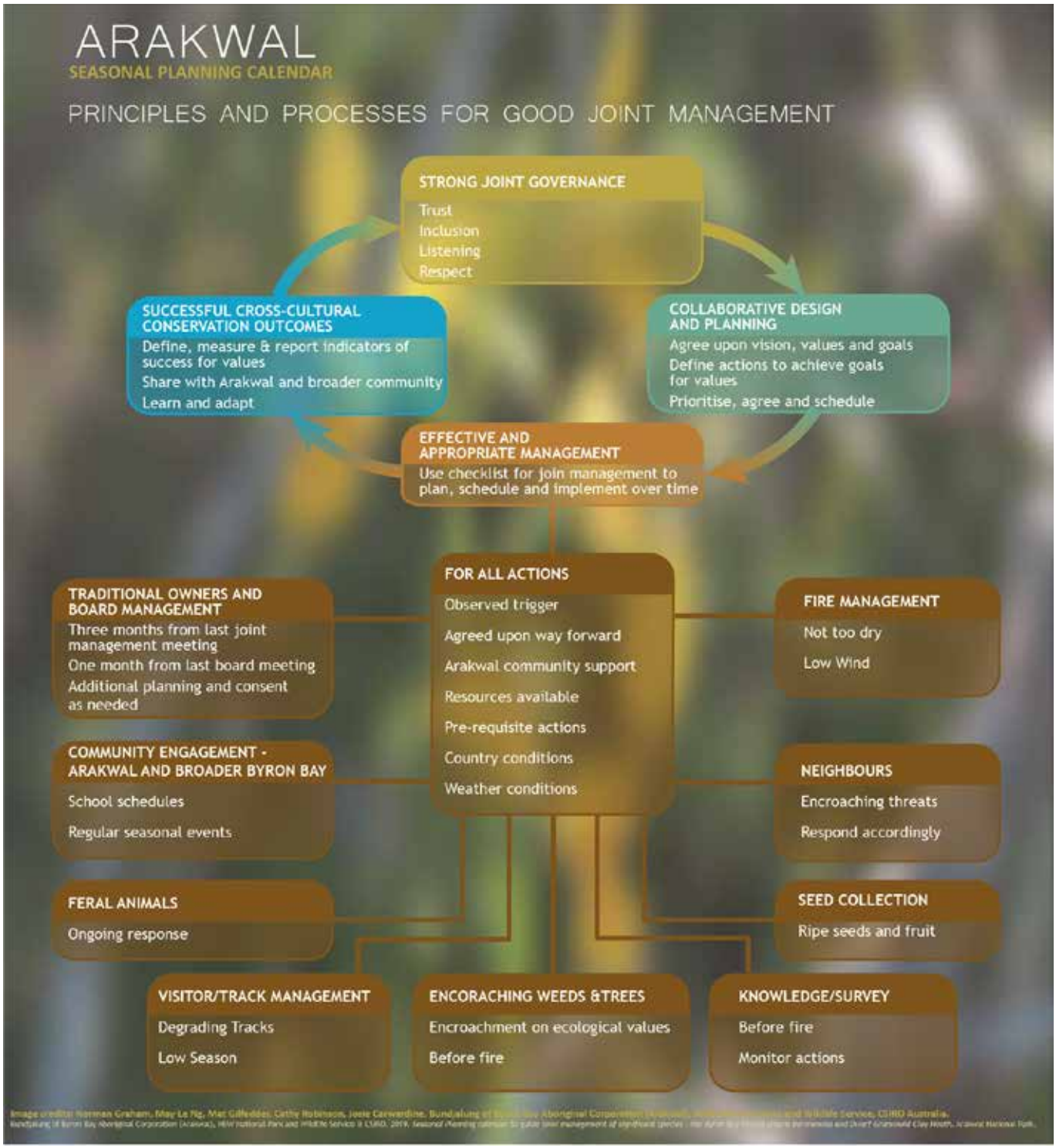
The notion of Joint Management here recognises that the Traditional Owners, the Dja Dja Wurrung people, have a significant connection to their Country, and in turn, have inherent rights and responsibilities to care for their Country … This is where new fire regimes, built on the knowledge of old fire regimes, can be trialled to reach a benchmark in biodiversity and utilise this important tool in reshaping the land for future generations. This is where traditional ecological knowledge and modern-day science can bridge ecological knowledge systems to reinvent a methodology to manage Country in a way that is inclusive, evolutionary, sustainable and holistic.

Graham Atkinson[54] (p.xi)

In New South Wales, Bundjalung of Byron Bay Aboriginal Corporation (Arakwal) have produced a four stage cycle of principles and processes for good joint management, which uses multiple sources of knowledge to adapt the four pillars of good management from the IUCN's Green List of Protected Areas into a co-management setting. The approach highlights the importance of joint governance based on trust, inclusion, listening and respect. It includes a checklist and triggers for decision making to guide when and how to implement high priority management actions (Box 3-1). In the words of Norman Graham, (Ranger – NSW Parks and Wildlife Service) and Bundjalung of Byron Bay Traditional Owner:

> It is great to appreciate the positives. This helps us to stay focused and bring our day to day work up to these frameworks and tie it back to what do on the ground. It brings the words to life. We can use these goals and past work to refresh and rejuvenate ourselves. We can follow this pathway that we set and still enjoy and be happy about our work and achievements on looking after Country. This work benefits you as an individual and the country: we are following those Healthy Lifestyle: healthy Country ideals.

Box 3-1 Arakwal principles and approaches for good joint management.



Indigenous knowledge also features in many other management plans and activities through the different pathways to co-managed parks around Australia[128]. Some exciting examples include:

- Daintree National Park Management Plan[ao] (Qld)
- Yawuru Birragun Conservation Park[ap] (WA)
- Joint Management Plan for the Dja Dja Wurrung Parks[aq] (Vic)

ao https://parks.des.qld.gov.au/managing/plans-strategies/pdf/daintree-national-park-management-plan-2019.pdf

ap https://www.dpaw.wa.gov.au/images/documents/parks/management-plans/ybcp_mangement_plan_web.pdf

aq http://www.dhelkunyadja.org.au/the-plan/joint-management-plan

CASE STUDY 3-6

Joint management speaking through Tebrakunna Country, Tasmania

Author: Dr Aunty Patsy Cameron

This case study demonstrates a number of best practice principles:

- Establishing and maintaining strong partnerships through mutual respect and trust
- Following guidelines set by key stakeholders
- Ensuring Aboriginal cultural activities are community controlled
- Maintaining regular communications between business enterprise and local Aboriginal organisation
- Monitoring precious cultural heritage landmarks and places of significance
- Providing appropriate advice both ways
- Upholding strict cultural values of what is shared knowledge and what is secret/sacred

Tasmanian Aboriginal dancer Jason Thomas, Mannalargenna Day 2019. Photo: MJ Anders

To protect Aboriginal knowledges and to manage and promote cultural experiences on Country 'right way', this case study offers insights into the relationship between a private business enterprise and not-for-profit Aboriginal community-based organisation, Melythina Tiakana Warrana (Heart of Country) Aboriginal Corporation (MTWAC).

The area involved is extremely important to Tasmanian Aboriginal people, even though it is a private property and operating farm. A rim of sand dunes interspersed by copse of coastal heathland embraces the remains of ancient campsites, hunting grounds and burial places of the First People who belonged to this Country for thousands of generations. This headland known as Tebrakunna (Cape Portland) is the homeland of the Pairrebenner/Trawlwoolway clanspeople, whose last great leader, Mannalargenna, was an important figure in colonial Tasmania. Many Tasmanian Aboriginal people today trace their heritage directly to Tebrakunna Country through the ancestry to Mannalargenna and his four daughters.

While coastal margins comprising wetlands, endangered species habitats, a wildlife sanctuary and culturally sensitive places are protected under appropriate Tasmanian Acts, a greater expanse of the Cape Portland farm property is not covered under a protected area status. Tebrakunna land is owned by the government-business enterprise of Hydro Tasmania, who in turn lease it to the Woolnorth Windfarm Group to operate 56 wind turbines, with a large portion of the property operating as a beef cattle farm.

The Tebrakunna Visitor Centre (TVC) is located on the property at Cape Portland farm. The small, semicircular building sits under a majestic wind turbine and overlooks Bass Strait. The TVC commands magnificent views over the Bass Strait islands that dominate the horizon from west to east. The TVC was designed, funded and built by the Woolnorth Windfarm Group in partnership with the regional Aboriginal community organisation Melythina Tiakana Warrana (Heart of Country) Aboriginal Corporation (MTWAC).

Tasmanian Songman Uncle Ronnie Summers, Mannalargenna Day 2016. Photo: MJ Anders

Musselroe Windfarm on Mannalargenna Day 2019. Photo: Hilary Burden

Women's Business Circle twining string on Mannalaregnna Day 2019. Photo: Hilary Burden

This partnership was established at the early development stage, before construction began on the windfarm some six years ago. There is no formal written agreement between the business enterprise and MTWAC, moreover, from its inception to the present day, co-management between the two entities is based on mutual understandings, trust and respect. This relationship has strengthened over time because of a commitment by management of the windfarm to acknowledge the cultural, social and spiritual importance of Tebrakunna to MTWAC, and the responsibility that goes with it.

It was of vital importance to MTWAC that the interpretation of the lifeworld of the ancestors, who lived at Tebrakunna for thousands of generations, be managed by Aboriginal custodians. It is also important that the story of Tebrakunna Country, from the deep past to the present day, acknowledges the continuity of cultural connections to the land. The trust relationship between MTWAC and the Windfarm Group is extended to visitors, where, perhaps the only type of its kind, the TVC is not daily staffed and relies on visitor honesty in experiencing our cultural heritage. In six years no damage, loss or vandalism has occurred at TVC because of the dignity and respect that Country engenders for all people who visit there.

The TVC, which is open every day throughout summer and four days a week during the winter months, offers a unique educational experience about the history and culture of the clan who lived, and continue to connect, here. It also tells the story of the windfarm operations. Woolnorth Windfarm engages a cleaner and groundsman to keep the TVC clean and the grassed areas mowed and weed free. MTWAC members visit the TVC regularly to help weed the surrounding culture gardens, plan new projects and offer guided information tours for visitors at the site. For easy access to the wider community, the grounds of the TVC are separated by an electric fence from the surrounding beef cattle lease.

On the first Saturday of December each year Mannalargenna Day Celebrations is offered to Aboriginal people and the wider community on the grounds of TVC. This event commemorates the lifeworld of a great ancestor who belonged here and who died in exile from his homeland in 1835. It is also a day to celebrate the survival of Tasmanian Aboriginal people. Mannalargenna Day is organised by MTWAC with financial and in-kind support from Woolnorth Windfarm management who coincide an Open Day with the event.

Tasmanian Aboriginal dancer Jarrod Hughes, Mannalargenna Day 2019. Photo: MJ Anders

Men's Business Circle on Mannalargenna Day 2019. Photo: MJ Anders

3.5 WORKING WITH FIRE

In Australia, biodiversity and landscapes which have adapted to Indigenous burning practices over the millennia, have not responded well to recent fire regimes introduced by Europeans[132]. Coordinated cross-ranger group customary burning practices in Australia's north are now recognised as delivering best practice savanna burning methodology[112,133].

Indigenous knowledge and practice of fire as a management tool is further informing broader Australian understanding of wildfire prevention (and protection of life and property); carbon sequestration; and reduction in greenhouse gas emissions. Indigenous understandings of fire as a management tool is providing an alternative to the (predominantly non-Indigenous) perspective of fire as only a destructive force within the landscape. Indigenous land and sea management practice is continuing to influence a shift towards the adoption of diverse knowledges, specifically Indigenous knowledge, in the formation of management options.

CASE STUDY 3-7

Ngadju fire knowledge

Authors: Les Schultz and Emma Woodward

Adapted from *Ngadju kala: Ngadju fire knowledge and contemporary fire management in the Great Western Woodlands*, by Suzanne M. Prober, Emma Yuen, Michael H. O'Connor and Les Schultz[134].

- New era of Ngadju leadership in contemporary management of Country based on traditional burning knowledge and practices
- Small-scale burning needed to protect old growth forests and important places
- Ngadju need to be included in decision making for long-term, best practice approaches based on integration of Ngadju fire knowledge and western fire management

Buldania Rocks fire training day.
Photo: Suzanne Prober

> Ngadju don't want:
> Other knowledge + Ngadju knowledge > Fire Management Plan
>
> Ngadju do want:
> Other knowledge + Ngadju knowledge > Discussion at table > Go out bush to check > Fire Management Plan

As a land management tool, fire has a more select role in Ngadju Country than in other regions such as the tropical savannas. In 2012 senior Ngadju man Les Schultz initiated a research project to document Ngadju fire knowledge and explore aspirations of Ngadju around fire management, as a foundation for moving toward a new era of Ngadju leadership in contemporary environment management of Country. Ngadju Country covers a significant part of the region known as the Great Western Woodlands in south-western Australia. Through discussion amongst Ngadju Elders, it was revealed that Ngadju historically burnt the Country at a very fine geographic scale, and on varying time scales, according to the natural vegetation mosaic of the landscape.

Ngadju Country is unique. Up north is different to here … if you burn the gimlets (joorderee) or salmon gums (marrlinja) it takes hundreds of thousands of years to come back. So Ngadju didn't burn much in the old growth woodlands. Some areas need to be burnt a lot, but not everything does. Ngadju just burn in specific places.

Ngadju Country was actively burnt, to maintain open hunting grounds and camping areas, encourage green pick, facilitate travel, and protect people, important places and resources from fire. While some areas including the spinifiex and spear grass grasslands required regular burning, 'only a small area needs to be burnt at any one time – perhaps the size of a football field'.

In those areas of Ngadju Country dominated by fire resistant vegetation selective small scale burning, together with active management of fuel loads through the plentiful use of timber for campfires and clearing the ground around important trees and other assets, helped ensure that very slow growing old growth trees were protected from uncontrolled fires. From the 1970s until recently, Ngadju people were frightened away from burning Country, as a result of Australian ('white man') laws becoming stricter. Following the success of the Ngadju native title claim to their Country, as well as amendments to the Conservation and Land Management Act 1984 (WA) enabling joint management and customary activities on state government managed estates, opportunity for re-engagement in fire management practices (including the lighting of campfires on Country which was previously prohibited) has emerged.

In developing a long-term approach to Ngadju involvement in managing fire on Country, Ngadju are clear that they need to be 'at the table' for Ngadju fire knowledge and western fire management approaches to be integrated for best practice outcomes. Small scale burning was also used to protect other important places including rockholes: caves; sacred sites; and water trees from wild fire.

3.6 MANAGING AND MONITORING COUNTRY WITH DIGITAL TECHNOLOGIES

Many of our Indigenous communities, groups and organisations are collecting, storing and sharing their cultural knowledge in digital forms (section 2.6). These technologies are also transforming and diversifying the ways in which we keep our Indigenous land and sea management knowledge strong.

Ranger groups are using a range of hand held digital devices (iPads; iTracker; tablets) to document change on Country. Some of this data collected on-Country is uploaded automatically (dependent on Internet access) to national data aggregators such as the Atlas of Living Australia (ALA). Collaboration with the ALA has led to development of a multilingual app (TracksApp[ar]) that allows Indigenous rangers working with the Central Land Council to track threatened species, such as the Bilby, in both English and Warlpiri. This type of App recognises and supports the tracking skills and knowledge developed, maintained and used by Indigenous Peoples to manage Country for many thousands of years, and links these observations with other managers' and scientists' data in real time.

Other digital technologies being employed by Indigenous rangers include sensor technology to track herds of feral pigs, cattle and buffalo. Aak Puul Ngangtam (APN) and Kalan Enterprises in Cape York Peninsula, Queensland, and Djelk Land and Sea Rangers in Arnhem Land, Northern Territory are currently working with partners to develop low-cost tracking devices and an environmental sensor network using the Internet of Things. This network is able to provide near real-time tracking of feral animals, and monitoring of the environment they're utilising to develop more effective management options.

Further, Aboriginal rangers and Traditional Owners working to manage the extensive Warddeken Indigenous Protected Area in the Northern Territory are using motion sensor camera traps to build understanding of mammal biodiversity on Country. This information is guiding management practices, and providing the most comprehensive snapshot of biodiversity to date in their unique part of the world.

Drones and remote sensing technology[as] are also being increasingly adopted by Indigenous land and sea managers to check condition of more remote Country and sacred sites that would otherwise not receive regular monitoring due to limits to on-ground access.

ar https://biocollect.ala.org.au/trackshub

as https://vimeo.com/374286893

3.7 PARTNERING TO SOLVE ENVIRONMENTAL ISSUES

Indigenous land and sea managers are working on a wide range of environmental issues including: loss of biodiversity; threatened species; stressed aquatic ecosystems; invasive species; and climate change[112]. Understandably, western scientists, policy makers and planners are becoming increasingly interested in the contributions our knowledge can make to their work[114,135]. Both knowledge traditions are valued by Indigenous resource managers on Country, *who are always at work in their implementation and integration*[3] (p.88).

In the Murray-Darling Basin for example, the Murray Lower Darling Aboriginal Nations and the Northern Basin Aboriginal Nations have developed partnership agreements with the Murray Darling Basin Authority. Together we partnered to establish the National Cultural Flows Research Project[at] which focused on the Murray-Darling, but was developed to benefit Indigenous groups across Australia. This partnership was Aboriginal-driven, and based on key research principles[au] that ensured our inherent rights as Traditional Owners was at the forefront of all work. The project established three approaches as the pathway to cultural flows in Australia:

- Water rights for First Nations
- Laws to increase First Nations' influence over water landscapes
- Effective inclusion of First Nations in water governance[136].

Good partnerships are underpinned by mutual trust, respect, listening and inclusion. We have worked in and partnered with many different environmental non-government organisations (ENGOs) to share our knowledge for caring for Country. Some of the ENGOs have caused problems for Aboriginal people – e.g. running campaigns for traditional territories to be protected as national parks without the consent or involvement of Traditional Owners. Others have really helped Traditional Owners achieve goals for their Country – e.g. preventing mines, like Jabiluka in the Northern Territory, from being established. Some of our partnerships with ENGOs have resulted in recognition of our rights and ownership over millions of acres of our Country[137]. Bush Heritage is an example of an ENGO really focused on working to develop Aboriginal partnerships that deliver positive outcomes for Aboriginal people (Case Study 3-8).

at http://culturalflows.com.au/index.php?option=com_content&view=article&id=16&Itemid=125

au http://culturalflows.com.au/index.php?option=com_content&view=article&id=18&Itemid=127

CASE STUDY 3-8

Bush Heritage: working as National Aboriginal Engagement Manager

Author: Cissy Gore-Birch

- Bush Heritage partners with Aboriginal people for the long-term
- Aspires to be a culturally competent organisation
- Indigenous knowledge is really respected and highly valued
- Opportunities to leverage deep change across environmental organisations and Australian society more broadly
- Empowering, effective, strategic experiences working with Bush Heritage

Cissy Gore-Birch, National Aboriginal Engagement Officer, Bush Heritage. Photo: NAILSMA

My role is Senior Executive National Aboriginal Engagement, working within Bush Heritage Australia. We have 26 partnerships with Aboriginal people, 15 on conservation reserves and 11 on Aboriginal lands. Bush Heritage is committed to being a culturally competent organisation in all our dealings with Aboriginal people. That means improving our practices right across all sectors within the organisation. We have a cultural competency framework for the organisation and have rolled out cross-cultural training across Australia, developing tailored sessions for the different sectors within our organisation.

Bush Heritage sees the value of our Aboriginal partnerships, we are working closely with our partners on reserves and off reserves, at all levels within the organisation. We have Aboriginal employment targets and our Aboriginal staff have really been able to cut through and be a part of the strategic directions and made a huge difference in the direction of Aboriginal Partnerships nationally.

My knowledge and understanding, and Indigenous knowledge more broadly, is really respected. I feel confident, able to contribute, listened to and respected. Bush Heritage really value each staff member and their experience, their knowledge and understanding, dedication, contribution and commitment. I've become a lot more empowered, and more aware of systems, processes and procedures and decision making that empower us, becoming more effective and strategic, while keeping my values and my integrity as an Aboriginal woman, a mother and a passionate driver of making a change for our people.

Bush Heritage is there as an ENGO partner for the long-term, it's not short term. We have resources in place to really partner with Aboriginal people to support their social, cultural and environmental values. We have great partnerships across Australia, for example working with Olkala, Wardekken, Bunuba, Karajarri, and many others.

Bush Heritage has learnt from our Aboriginal staff and our partnerships the importance of genuine relationships, building the trust and believing in the work we do. We were here 60,000 years ago. Aboriginal people have their own governance, cultural governance, to understand that is important. Each group has their own decision making through skin, through

kinship, through the different ways we engage, get information, understand and respect those systems.

Being in this position with a leading national environmental non-government organisation has also given me wider opportunities to influence local, regional, state and national conversations. I've sat on many boards and committees in the past and have prioritised to only sit on the Threatened Species Scientific Committee, the Indigenous Reference Group for the Northern Australian Environmental Resource Hub, the Kimberley Development Commission Board, Kimberley Foundation Australia and my local Prescribed Body Corporate – Balanggarra Aboriginal Corporation: being an advocate for our people within conversations about conservation and land management, water, and governance.

One of my main passions is getting more young people and more women involved in conservation and land management leadership, decision making and governance. For example, NAILSMA and WWF are working with Mimal, a Women Rangers' Forum. We need to make space for the younger generation of people wanting to come up, to show them what is happening behind the scenes. We are making decisions today that are really going to affect young people, they need to be part of these conversations and decisions. We need to show young people professions where they can really make a change – some might want social change, some want to engage in politics, others climate change, so many different options. It's about really investing in young people today so they can be really engaged in their future.

The current policies, legislations and the Constitution related to our people, land and sea, water, conservation and land management, and economic development doesn't allow us to really shine and take ownership of what's important for our people. Systemic racism is alive and kicking. Until we are serious about owning this issue as a nation, making a difference for our people and acknowledging our First Nations people, nothing will change – it's time for 'truth telling'. The current organisations working within the land, sea, conservation and environment sector need to work in collaboration and not in *competition*. We are working towards the same goals … let's reflect, rethink and re-adjust why we work in this field and to re-check what our Traditional Owners are saying and how we are really making changes within and influencing others. This industry should not be taken for granted, each and everyone of us have a responsibility to look after Country and speak the truth.

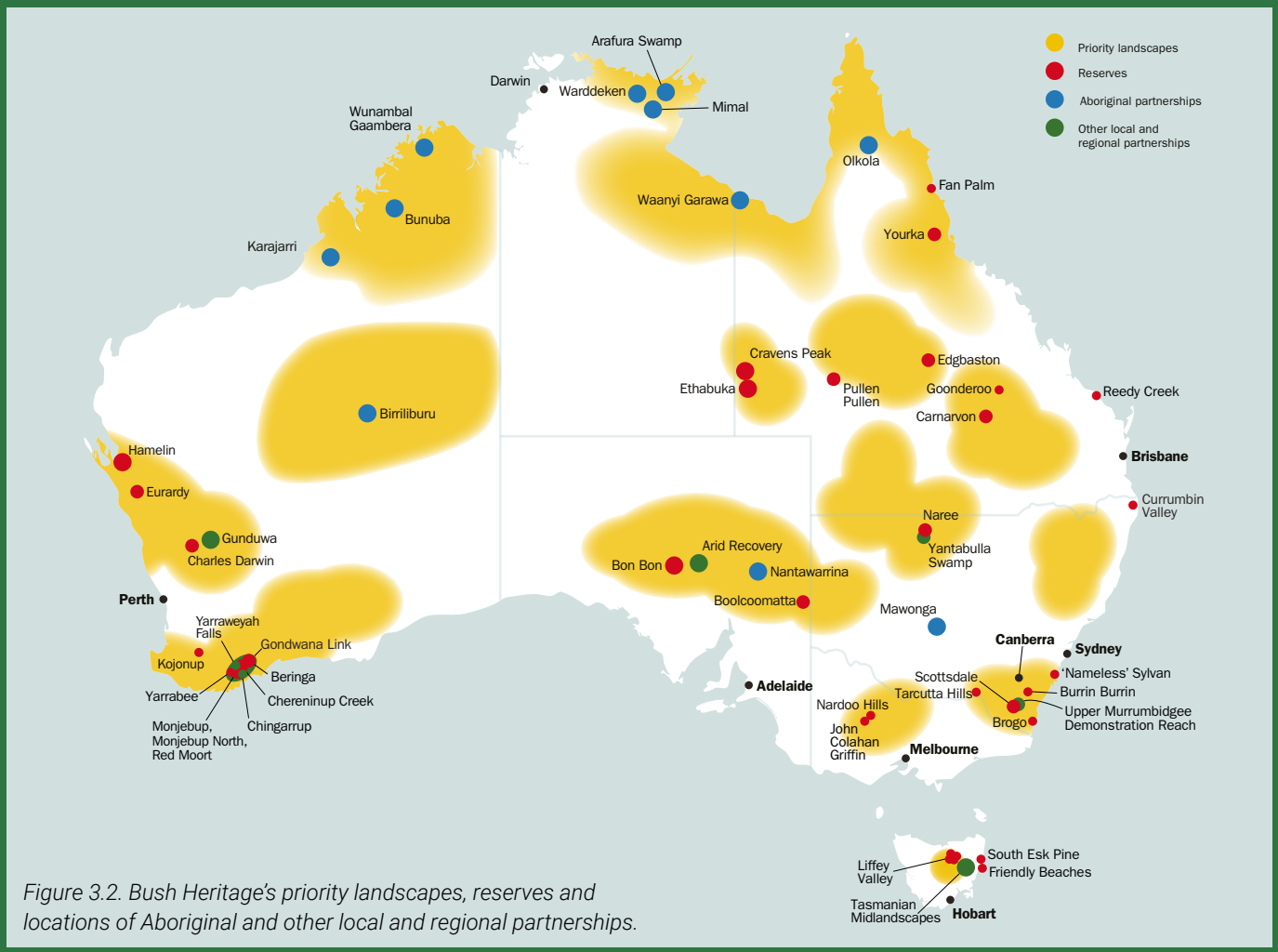


Figure 3.2. Bush Heritage's priority landscapes, reserves and locations of Aboriginal and other local and regional partnerships.

CASE STUDY 3-9

Weaving Indigenous knowledge and science: the KISSP approach

Authors: Gina Lincoln and Rachel Buissereth

- Tradtional owners led research on their Country
- Traditional Owners and researchers co-produced invaluable resources to guide future research co-operation in the Kimberley and elsewhere
- The project worked with an existing network of Indigenous saltwater managers – and researchers went above and beyond when visiting communities

The Kimberley Indigenous Saltwater Science Project (KISSP) was one of 25 research projects developed as part of the Kimberley Marine Research Program, through the Western Australian Marine Science Institution. At the outset of the planned body of research in the region, community-driven mechanisms/processes for researcher engagement with Traditional Owners in the Kimberley were lacking, and opportunities for Traditional Owners to direct research on their Country was absent. Traditional Owners wanted some control of research being undertaken on Indigenous owned and managed sea Country in the Kimberley region. Negotiations were held between representatives of the Traditional Owner groups and senior managers of WAMSI, to determine a body of work that would be led by Traditional Owner groups. Representatives from the Wunambal Gaambera, Balanggarra, Dambimangari, Bardi Jawi, Nyul Nyul, Yawuru and Karajarri people came together to develop a regional research project, steer the Indigenous-led project (the Kimberley Indigenous Saltwater Science Project), to create a strong and united voice.

Countrymen from the Kimberley talking about the regional turtle and dugong plan. February, 2019.
Photo: Kimberley Land Council

KISSP produced invaluable resources that will help the work of weaving Indigenous and scientific knowledge across Kimberley saltwater Country, with relevance in other areas:

- **Module 1:** Understanding How to Bring Knowledge Streams Together[av]
- **Module 2:** Guidelines for Collaborative Knowledge Work in Kimberley Saltwater Country[aw]
- **Module 3:** Guide for Researchers[ax]
  Links to Kimberley Saltwater Country Research Proposal form:
  - > www.klc.org.au/research-facilitation
  - > www.wunambalgaambera.org.au/research-protocol-and-permits
- **Module 4:** Regional Framework for Traditional Owners Monitoring Kimberley Saltwater Country[ay]
- **Module 5:** Toolbox for Saltwater Monitoring in the Kimberley (Toolbox database)[az]
- **Module 6:** Pilot training package for Kimberley Indigenous rangers: Monitoring for Management[ba].

av https://www.wamsi.org.au/sites/wamsi.org.au/files/files/Indigenous%20Knowledge_Mobilising%20Indigenous%20Knowledge%20Report_WAMSI%20KMRP%20Project%201_5_1%20_Austin%20et%20al%202018_FINAL.pdf

aw https://www.wamsi.org.au/sites/wamsi.org.au/files/files/Indigenous%20Knowledge_Guidelines%20for%20working%20with%20multiple%20knowledges%20report_%20WAMSI%20KMRP%20Project%201_5_2_Austin%20et%20al%202017%20FINAL.pdf

ax https://www.wamsi.org.au/sites/wamsi.org.au/files/files/Guide%20to%20Collaborative%20Science%20on%20Kimberley%20Saltwater%20Country%20V17_3_2.pdf

ay https://www.wamsi.org.au/sites/wamsi.org.au/files/files/Indigenous%20Knowledge_Regional%20Framework%20Report_WAMSI%20KMRP%20Project%201_5_4%20Dobbs%20et%20al%202017_FINAL.pdf

az https://drive.google.com/drive/folders/1P4kBubuX3X9PzwvH4DrYxZSrPHiwAhea?usp=sharing

ba https://drive.google.com/open?id=1WFXG29DA3fA0GZgbpW10SrSqep0bQ1WQ

Module 3, the Guide for Researchers, includes a step-wise protocol for researchers[138], based on six stages (Figure 3.3).

To achieve these outcomes, community champions from each of seven saltwater Kimberley communities led the development of a participatory meeting in their home community. Supported by their hand-picked KISSP research team, all agendas were driven by Indigenous community members. In addition to these community meetings, knowledge was shared through dozens of interviews with Indigenous community members, rangers, Traditional Owners and western scientists as well as online surveys and community-based interviews by Indigenous rangers. The project working group closely steered the project and oversaw their research team, where members were updated on each other's activities and kept outcomes on target. The project was limited by time and resources.

Figure 3.3. Simplified collaborative research cycle, Kimberley Indigenous Saltwater Science Project

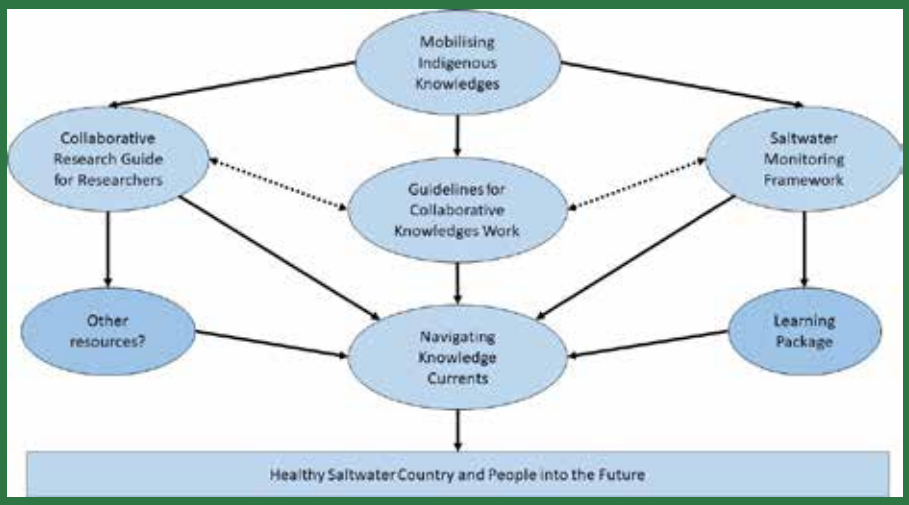


Figure 3.4. How the KISSP products fit together. Credit: KISSP Working Group

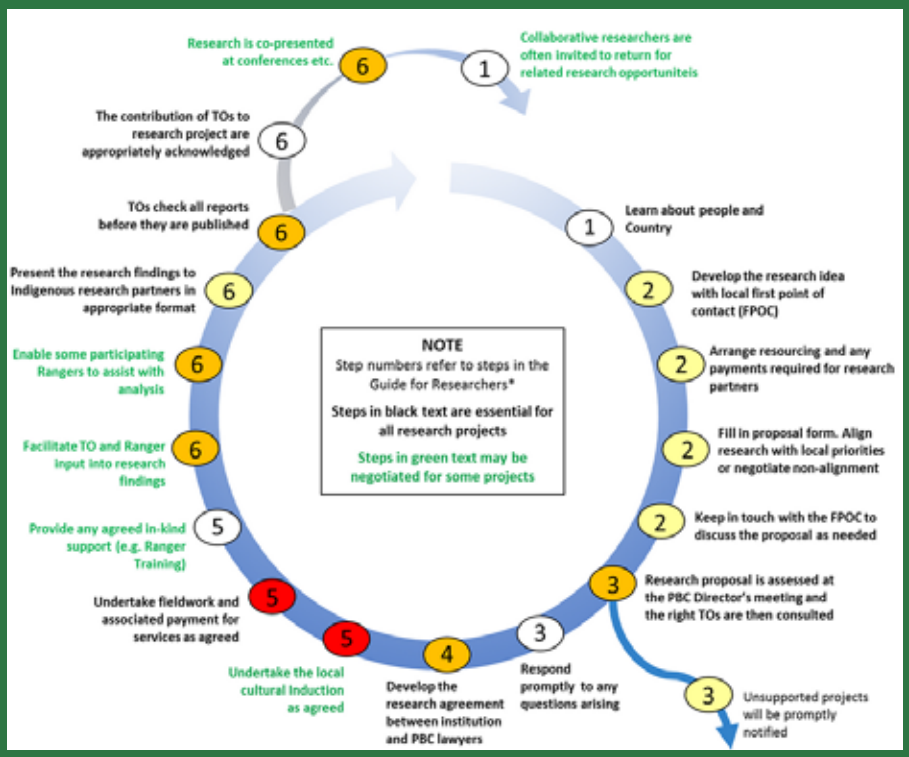


Figure 3.5. Detailed collaborative research cycle from the Kimberley Indigenous Saltwater Science Project

Researchers went above and beyond when visiting communities, and although funding was allocated to host the meetings, community members agreed to conserve project resources by forgoing payment. Most community champions were also PBC chairs or community leaders and thus were limited for time. However, their multidisciplinary skill sets, community standing and cross-communication skills worked strongly in favour of the project.

The KISSP project worked within an existing network of Indigenous saltwater managers to drive the project outcomes[139]. The modules were only able to emerge through the regions' Indigenous governance and the willingness of trusted researchers and local people to work collaboratively with each other. Each of the seven native title groups working with the project, maintained a strong engagement and control over the project deliverables, making the KISSP project a strong example of collaboration between Indigenous Peoples and researchers, and the process of weaving Indigenous and western knowledge systems[140,141]. The legacy of the KISSP deliverables continues to provide benefit for Kimberley people and Country. In recognition of the tangible benefits to saltwater Country management of having a regular, supported forum and open communications between geographically distant communities, the seven KISSP groups have grown to nine native title holders with representation on the Kimberley Indigenous Saltwater Advisory Group. 'People got a lot closer after the project', finding strength in their support network.

KISSP working group and partners Broome. November, 2017.
Photo: Kimberley Land Council

3.8 KISSP AND THE MULTIPLE EVIDENCE BASE APPROACH

- Multiple Evidence Base approach trialled to co-generate mutual learning and knowledge production across knowledge systems
- Key outcome: development of new saltwater monitoring framework founded on Indigenous as well western science views of healthy saltwater Country
- Key learning: creation of knowledge partnerships can mobilise Indigenous knowledge and support co-production of new knowledge

The The Kimberley Indigenous Saltwater Science Project (KISSP) sees benefits from voluntary adoption of the Multiple Evidence Base (MEB) approach for knowledge sharing. The overarching aim of KISSP was to facilitate best practice knowledge production to look after Kimberley Saltwater Country. A MEB approach to collaboratively mobilising Indigenous knowledges (IK) and western scientific knowledge was trialled through KISSP, as one approach available to Indigenous people and their partners to share, use and co-produce the best available knowledge-base for decision-making, management and monitoring of Kimberley Saltwater Country. MEB recognises that different knowledge systems have their own histories, contexts, and methods for validating what it known to be true[141]. Bringing knowledge together is often best approached and thought about as a process of weaving, rather than integrating (Figure 3.4)[140].

One key outcome of bringing multiple knowledges and disciplines together was the development of a new saltwater monitoring framework that attended to the Indigenous values underpinning Indigenous understanding of Healthy Country, and not purely a western science view of what constitutes healthy saltwater Country.

A key learning that occurred through the engagement was that the creation of knowledge partnerships, through working in the intercultural space, can mobilise IK and support the co-production of new knowledge. This creation of a third space, which all partners step into to form new knowledge together, avoids pitching knowledge holders and producers against each other. The *weaving knowledge systems* graphic (right) was adopted as a tool for first building understanding between the multiple Indigenous and non-Indigenous partners in the project about bringing multiple knowledges together to manage Kimberley Saltwater Country.

The tool depicts graphically the notion of *science and other knowledges* being woven together to build a more comprehensive knowledge-base than could be achieved by any one knowledge system alone. At an early workshop involving all partners in the collaboration, the various strands of knowledge that are depicted as being mobilised in the figure were described as being like a tree – each of the roots of knowledge growing together to support each other to produce fruit on the branches.

As the purpose of the research engagement was to mobilise diverse and disparate knowledges to co-generate mutual learning across knowledge systems, the graphic was deemed to be a great representation of what the group was trying to achieve. It was reported by one participant that the graphical tool was subsequently used by Indigenous partners to explain to new partners entering into the project the aim of the group – to draw on multiple knowledge systems to find the best way of managing Kimberley saltwater Country.

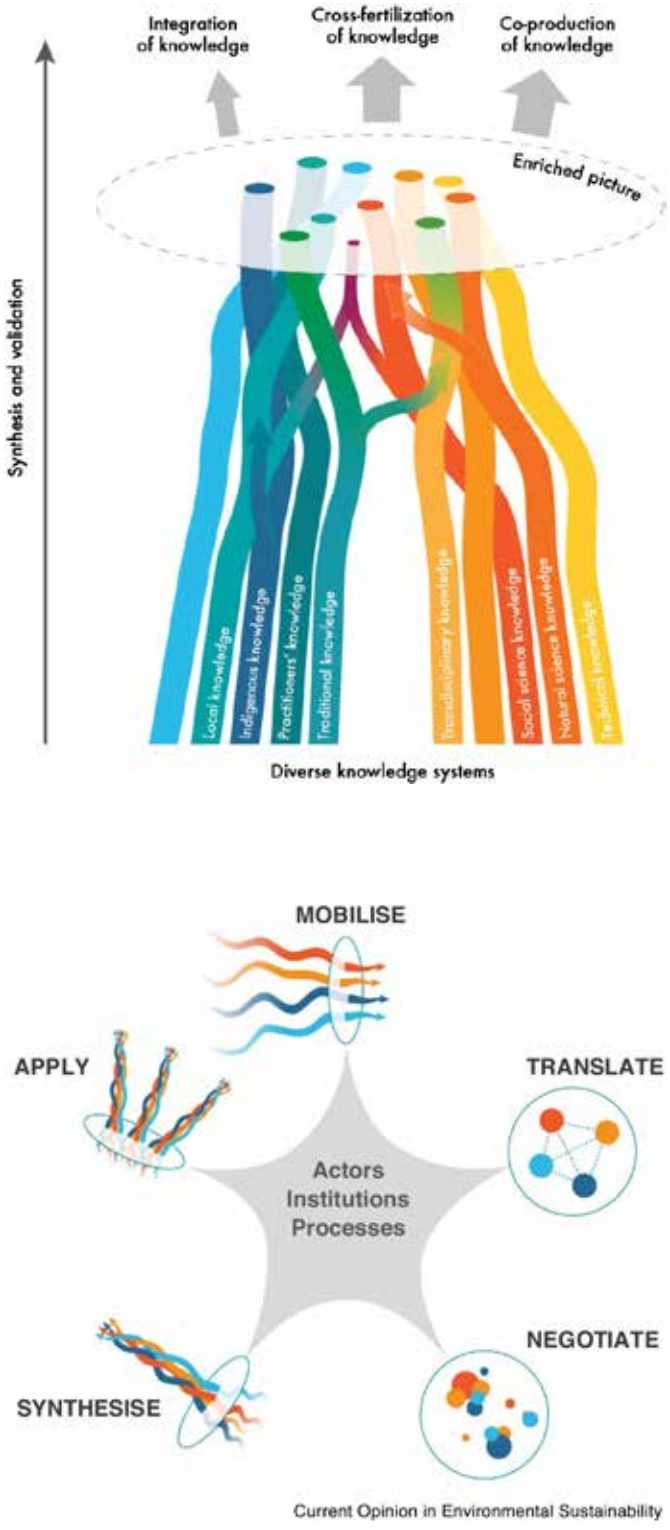


Figure 3.6. The concept of weaving knowledge systems (above) and the Multiple Evidence Base approach (below)[140,141].

3.9 SHOWING AND SHARING KNOWLEDGE IN THE FITZROY RIVER CATCHMENT – CO-DEVELOPED CASE STUDY

Authors: Dennis Chungalla, Heather Wungundin, Mary Aiken, Jean Malay, Bernadette Williams, Tim Cranbell, Josephine Forrest, Marmingee Hand, Ross James, Elizabeth Jingle, Olive Knight, Nathan Lennard, Valerie Lennard, Ileen Malay, Lindsay Malay, Wallace Midmee, Stuart Morton, Chloe Nulgit, Patricia Riley, Ina Shadforth, Jane Bieundurry, George Brooking, Sherika Brooking, Willy Brumby, Victor Bulmer, Virgil Cherel, Ashley Clifton, Sam Cox, Matt Dawson, Cissy Gore-Birch, Alistair Hobbs, Duran Hobbs, Camelia Juboy, Patricia Juboy, Annette Kogolo, Barry Lennard, Con Lennard, Deon Lennard, Nelita Malay, Zenneth Malay, David Marshall, Herbert Marshall, Lezeka Millindee, Diane Mowaljarlai, Andrea Myers, Thomas Nnarda, Joy Nuggett, Lloyd Nulgit, Pansy Nulgit, Anne Poelina, Daniel Poudrill, Joe Ross, Jimmy Shandley, Sandy Skeen, Gordon Smith, Mervyn Street, Pauline Thomas, Bronson Wongawol, Harry Yungabun, Fitzroy High School Students (Arosha Sunfly, Cyntala Cook, Kaunell Shaw, Taliesha Collard, Yvonne Collard), Ro Hill, Ilisapeci Lyons, Nat Raisbeck-Brown, Rachel Buissereth, Pia Harkness

- Traditional Owners and scientists sought ways of bringing together scientific and Indigenous knowledge for making decisions on Country
- Participatory mapping methods were used for showing and sharing scientific and cultural knowledge, and provided a space for Traditional Owners from different parts of the catchment to share their stories and speak for Country
- The project provided an important opportunity for Traditional Owners from throughout the Fitzroy River catchment to come together, strengthen their relationships and build trust
- By sharing traditional knowledge and learning western and political knowledge together, Traditional Owners reported feeling empowered to use these knowledges to inform management and development decisions on Country in the future

In the Kimberley's Fitzroy River region, Traditional Owners and scientists have been working together on a project supported by the National Environmental Science Program (NESP) to help Indigenous land managers find better ways to use both scientific and Indigenous knowledge (IK) for making decisions for Country. Traditional Owners and scientists learned together and co-developed different ways of showing and sharing knowledge. The project was supported through collaborative research agreements with ten different Traditional Owner Groups through their relevant organisations.

Traditional Owner Partners

Bunuba Dawangarri Aboriginal Corporation

Garawa Traditional Owners

Jaru Claimant Group

Kija Claimant Groups

Warrwa Claimant Group

Gooniyandi Aboriginal Corporation

Tiya-Tiya Aboriginal Corporation

Waanyi Traditional Owners

Walalakoo Aboriginal Corporation

Yungngora Aboriginal Corporation

Together we developed three different types of participatory mapping methods. First, adults and children from these groups came together to build a huge 3D model of the Fitzroy River catchment and to discuss the future of the river. Second, we used an interactive projector on a table to look at spatial data in more detail than the 3D model allowed. Finally, we worked together to make influence maps, to think about the ways different groups of people are connected along the River. Based on those maps we considered ways that we can create more power for ourselves, as building blocks to a future where we have more say on what happens on our Country.

Learning together

[the research is] … very valuable. Since starting with the project, made me aware of a lot of things. Learning about the river from scientists, I'm learning from Elders, learning from other groups, they've given me a lot of insight about my Country

Traditional Owner Workshop Participant, 2018

The 3D model was good for involving youth and adults, and showing and discussing where important places are in the catchment, and what's happening where. Different information layers were projected onto the map, and pins, beads and stickers were used to mark locations and explain stories (importantly these can be removed to protect knowledge). We used these tools to explore concepts around water flow, water rights, the importance of flood and fire, and the various types of conservation and development areas that exist or are proposed along the river (Figures 3.7 and 3.8).

- Traditional Owners and Researchers begin the 3D Map Project[bb]
- Showing and Sharing Knowledge in the Fitzroy River Catchment[bc]

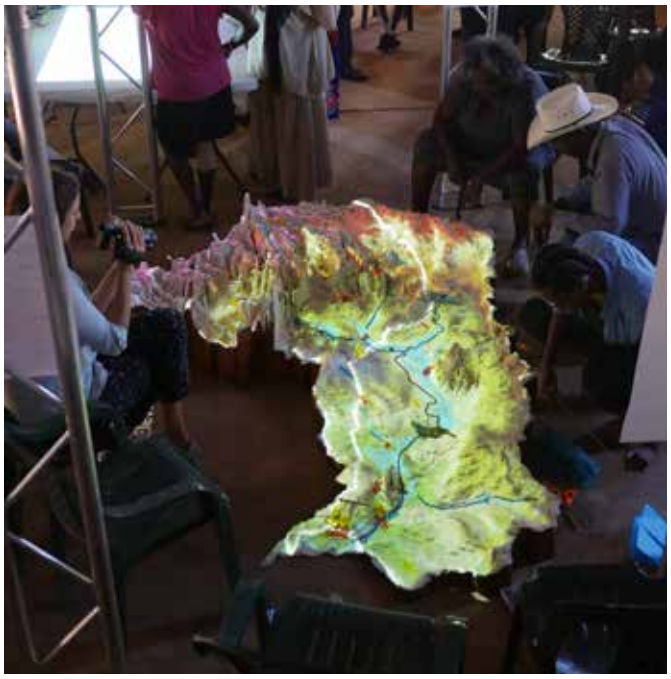


Figure 3.7. The 3D model being tested by Traditional Owners in the Fitzroy River catchment, WA. Photo: Roly Skender

The NESP team from CSIRO took the 3D map on a road trip around the Kimberley in 2018 and reached nearly a hundred local adults and over a hundred children. Adults and children both greatly enjoyed the presentations.

- 3D Map Road Trip[bd]
- Children Working with the Fitzroy River 3D Map[be]

bb https://vimeo.com/278597521
bc https://vimeo.com/288676761
bd https://vimeo.com/324906077
be https://vimeo.com/296330850

Figure 3.8. Traditional Owners from different groups sharing stories about their Country. Photo: Pia Harkness

The interactive projector enabled closer inspection of some of the data. Traditional Owners found it was useful because we could zoom in to explore the locations of plants, animals and other features that are important to us. We used the interactive projector to think about how we could make a buffer zone for protecting important places from inappropriate development, like the one mentioned in the Fitzroy River Declaration (Figure 3.9).

Figure 3.9. Workshop participants examining spatial data on the interactive projector. Photo: Pia Harkness

The influence mapping exercise showed the ways different groups use their power along the river: across time and spatial scales, based on western and traditional law; through connections and relationships; by making money from natural resources; and through different tenure types (Figure 3.9). The Martuwarra Fitzroy River Council is an important organisation because it brings people together from the mouth to the hill Country – when we stand together, we are stronger than if there are just a few strong voices.

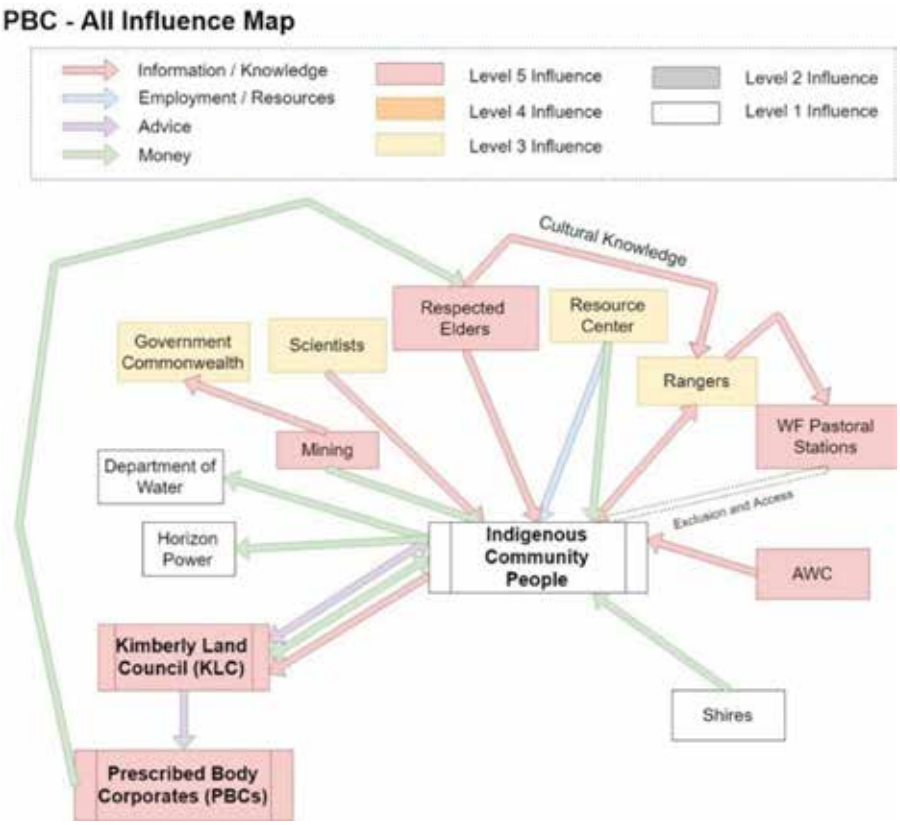


Figure 3.10. Above: doing the power mapping with the NESP CSIRO team. Photo: Ro Hill
Right: One of the resulting influence maps.

We used the influence maps to think about building blocks towards having more influence in the future. We found that rules and stories from both first law and western law were important tools of power. Participants said that Traditional Owners need to be strong in their first law, culture and language before coming strong in western law, rules and education. This means respecting Elders, and young people and Elders spending more time together on Country.

We identified that to be stronger and create power, Traditional Owners must be better at working together. PBC's and rangers need to put more effort into working with and listening to Elders. Traditional Owners also need to work better with others, including government, researchers, land councils and other land users. Some groups could benefit from increasing trust. We need to find where there is trust, identify common ground and keep building the trust from that basis.

Many Traditional Owners want economic development opportunities from our Country, but mostly the suggestions and proposals are focused on established pastoral and mining industries. We are also interested in pursuing new and emerging sustainable industries, with less pressure on natural systems. When we discussed options for new industries, we also considered that we need to be careful when we don't know what the impacts might be. Our people need support and training to be able to benefit from economic development in our region, whether from new or established industries.

Learning together

I feel a lot more confident because of the relationships and learning together with other Traditional Owners. In future meetings, if people who have been part of this project are together then we will feel more confident in making decisions together

Traditional Owner Workshop Participant, 2019

This project has helped us build stronger relationships and trust between Traditional Owners from different groups along the river, from top to bottom. The 3D model has enabled people with rights to talk for different parts of Country to come together in one place and talk about different options for the future. Using the map and other tools, we have shared traditional knowledge, scientists have shared western knowledge and together we have created new ways of building knowledge. Sharing and learning together gives us confidence to make more informed decisions about development or looking after Country in the future.

3.10 LESSONS TOWARDS BEST PRACTICE FROM THIS CHAPTER

Important ideas and guidance from Indigenous Peoples:

- Our Indigenous knowledge is both unique and complementary to western science approaches to managing Country: weaving the two knowledge systems can deliver good outcomes for Country
- The documentation and recording of our knowledge in different forms supports engagement, learning and sharing in diverse ways
- Individuals and groups follow different protocols for both the holding and sharing of knowledge, which may include obligations to ancestors, Elders and family
- Before knowledge is shared, there must be trust that the receiver of the knowledge will treat the knowledge the right way – some knowledge must be treated with special attention and care
- Our knowledge of bush medicine, bush foods, Country and culture underpins a growing number of our sustainable enterprises and services
- Indigenous fire management knowledge has led to better biodiversity outcomes, improved health and well-being and informed the development of carbon economies.

Resources and guidance for partners:

- Indigenous Protected Areas make up almost half of Australia's total National Reserve System, and Indigenous knowledge is the foundation for their management
- Relationships and trust-building between people creates a positive foundation for knowledge sharing: strong partnerships are underpinned by mutual respect, trust, transparency and inclusion
- Indigenous-driven partnerships, that place Indigenous Peoples' inherent rights at the forefront of all activities, are effective for supporting Indigenous knowledge in caring for Country
- Co-research methods that support equitable collaboration between Indigenous people and researchers provide a strong foundation for knowledge-related partnerships.

Actions and issues for Indigenous people and partners in working towards best practice:

- Science and research partnerships can support Indigenous-led exploration of Indigenous knowledge for enterprise development
- Partnerships are supporting Indigenous knowledge to lead through joint governance and management of threatened species, water, wetlands, parks and protected areas, invasive species and other environmental issues
- Co-management will thrive in an environment of mutual respect and trust
- New and tailored digital technologies and applications hold significant opportunities for the successful management of extensive Indigenous lands
- Scientific knowledge systems and Indigenous knowledge systems each have their own methods, histories, and ways of validating what is true
- Co-design tools can support weaving multiple knowledge systems – scientific and Indigenous – to provide a richer picture for management.