

Bringing together Indigenous and western science and knowledge in Gathaagudu Shark Bay, WA: Lessons learnt.



The Climate System Hub undertook [a joint project](#) with Malgana Traditional Owners, one of the three Traditional Owner groups in the Shark Bay World Heritage Area. The Shark Bay World Heritage Area (WHA), on the most westerly point of the Australian continent and approximately 800km north of Perth, covers 2,197,300 ha, nearly 70% of which is marine environment.

Gathaagudu – Shark Bay is an inherent part of the Malgana descendants' culture and their heritage, with relationships that stretch back to 30,000 years (Sutton & Shaw, 2020). Climate change stressors will have multiple impacts on Shark Bay — those with the most significant impact are increases in temperature, storm frequency and intensity and extreme marine heat events (Sutton & Shaw, 2020).

While the listing of the Shark Bay WHA is based on its natural heritage value and does not recognise the on-going connections between the Traditional Custodians and their sea country, a joint management plan was recently established between the Western Australian Government and the Malgana Aboriginal Corporation within the area.

Our Project

The goal of our project was to pilot knowledge-sharing tools to explore and make explicit the climate-related risks of significance to the Malgana People and to develop strategies that address these risks. More broadly, it aimed to improve the participation of Indigenous peoples in understanding and using climate information for adaptation planning.

This project was co-designed with Malgana People and utilised a strength-based approach. A strength-based approach includes the following principles (Prehn, J. 2024, p. 5):

1. **Celebrate diversity:** Honour the vibrant strengths within Indigenous communities—cultural wisdom, deep connections to Country, resilience, storytelling, kinship, and art;
2. **Embrace growth:** Acknowledge the inherent strength, resilience, and growth potential in the face of adversity, turning challenges into opportunities for profound development;
3. **Empower aspirations:** Fuel personal and collective growth in the Indigenous context. Support self-determination. Value the aspirations, goals, and visions of Indigenous individuals, families, and communities;
4. **Foster self-determination & collaboration:** Boost self-determination with resources and valued Indigenous voices. Collaboration is key—recognise expertise, knowledge, decision-making authority, and empower through meaningful partnerships;
5. **Utilise resources:** Tap into the wealth of Indigenous resources—cultural knowledge, traditional practices, land, networks, support systems, and cultural strengths—to address challenges collaboratively; and
6. **Cultural grounding:** Root the strengths-based approach in Indigenous culture, care, and context. Respect world views, including knowledge systems, cultural protocols, values, and ways of being. Engage in culturally appropriate ways for interventions aligned with values and cultural safety.

Co-designed approach

Working collaboratively with four knowledge tools: (1) a timeline of Malgana Country and People, (2) a seasonal calendar, (3) cultural mapping, and (4) an adapted change-persistence cycle, the Malgana People identified cultural strategies that would sustain Malgana values under conditions of increasing environmental, climate and social change. The tools engage with different dimensions of Malgana knowledge, including seasonal knowledge, experiences and observations of health and change to Country; spatial dimension of knowledge, observations, experience and practice; recording of local and regional events over time that can complement changes explored in the seasonal calendar and combining shared information and knowledge to systematically consider responses that can help Malgana People to sustain and strengthen their cultural values (see figure 1 for steps and process adopted in this project).

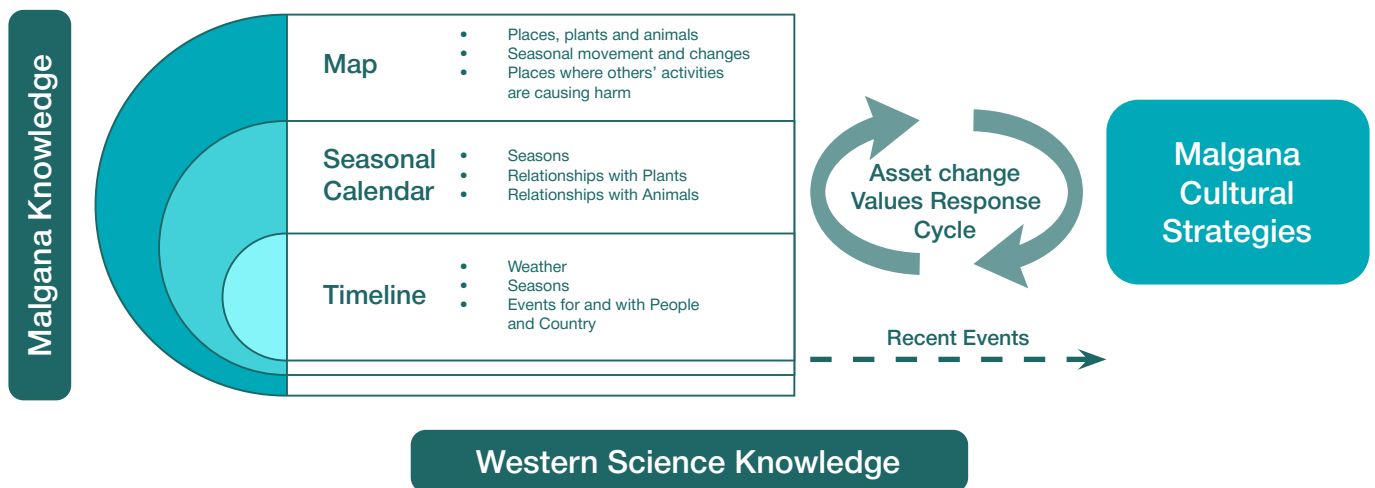


Figure 1: Knowledge sharing tools utilised in the project to develop the Malgana cultural strategies to respond to changes that are coming and are happening on Country



Figure 2: Malgana participants mapping places, plants, animals, and activities on Country at the second workshop

The project ran for four years, over two phases and included five workshops where Western Science understanding of climate change, and Malgana observations and experiences of change happening on Gathaagudu were shared.

Below is a representation of a 12-month calendar that shows that when Country is most active, moving and re-growing is also the busiest tourist time in Gathaagudu.

October	November	December	January	February	March	April	May	June	July	August	September
Spring		Summer			Autumn			Winter			Spring
			Malgana Seasonal Calendar – Important time when Country is active, moving, and re-grows								
		More tourists arrive and stay over the Christmas break	School holiday tourists and visitors in Shark Bay		Peak tourist and visitor season – Denham food and fuel supply run out. High demand on the health service in the township.						
			Rangers collect and plant seagrass seeds. (seeds from harbour)	Ranger seagrass restoration and recovery activities	Ranger seagrass restoration and recovery activities	Ranger seagrass restoration and recovery activities	Ranger seagrass restoration and recovery activities	Ranger seagrass restoration and recovery activities	Ranger seagrass restoration and recovery activities	Ranger seagrass restoration and recovery activities	
							Fisheries close Eastern Gulf (Monkey Mia) for pink snapper fishing, due to spawning. Fishers come over to Denham side			Fisheries close Freycinet Estuary for pink snapper fishing	
							Fishing Fiesta				
		School holiday – Malgana families on Country	School holiday – Malgana families on Country						Hamelin School Camps		
Shark Bay – Kalbarri Annual softball-football competition		Malgana Determination Day					NAIDOC Reconciliation				

Table 1: Annual and biannual events in Gathaagudu with the seasonal cycle of Country

Insights from the process:

Shared by Malgana People

- Being on Country is important for the health and wellbeing of Malgana Traditional Owners. Finding a reasonably priced home to rent or buy on-Country in Denham is becoming more difficult for Malgana People. The increased interest in development and higher demand for homes means fewer accommodation options for Malgana People who want to return to live in Denham. This means the ranger program can expand only when there is more housing. For Malgana elders who want to stay in Shark Bay, they need suitable housing that ensures they can get ongoing care at home.
- Employment of Malgana People on their customary estate through the ranger program and joint management plan, or partnerships with businesses operating in the Shark Bay WHA, as well as combining Malgana ecological knowledge and western science, are some options that can build Malgana-driven opportunities.
- [The Malgana Aboriginal Corporation](#) is foundational to the cultural, employment and environmental goals of the Malgana People and to nurturing the variety of values Malgana People hold in Gathaagudu (SBWHA). Through their ranger program, cultural initiatives are activated, and inter-generational knowledge sharing, peer-to-peer knowledge building and cultural practices are sustained. The knowledge sharing tools.
- Knowledge sharing and building tools, such as the seasonal calendar and the cultural map have been created through the collective knowledge of elders and rangers and are important for inter-generational sharing of knowledge and stories. These tools are now owned by Malgana Aboriginal Corporation to adapt and use as needed to reflect environmental shifts and management practices arrangements.
- Multiple values and interests including those of Malgana People and people who live and visit Shark Bay were explored across the knowledge-sharing tools. Some values conflict because of the type of activities and their impacts on Gathaagudu, like tourism, industry and development and their impacts on land and sea Country and Malgana access to Gathaagudu. While others co-exist without harming Malgana values and cultural heritage — shared use of places by Malgana People and the Shark Bay community. These values are important because of historical reasons, for the memories held and shared about places and customary practices.

Shared by the Research Team

The approach of the team

- The knowledge sharing and building , and consent approach in this project was guided by Malgana Traditional Owners and Malgana Aboriginal Corporation's cultural protocols and their PBC governance. The process of cultural protocols differs between Aboriginal Peoples.
- Resourcing Indigenous-led, co-developed and owned processes has been critical to this knowledge partnership project.
- This project focused on Malgana knowledge systems and practices as the foundation to working with Malgana People to continue building their unique capabilities to respond to the changes they are observing on Gathaagudu and to manage the risks associated with these changes.

Insights for other knowledge partnerships

Lessons learnt from working with the Malgana People throughout the project:

Free, Prior and Informed Consent

- Engage early, starting with the appropriate representative body and clearly communicate if the engagement is for consultation only or if there is an intent to collaborate or seek a longer-term partnership. Free, Prior and Informed Consent is established throughout a project and re-visited as collaboration evolves. It involves multiple conversations as well as written consent.
- The Free, Prior and Informed Consent conditions of equity was assured by the Malgana Aboriginal Corporation board who determined the right people to be in the workshop and the balance of those who live in and beyond Shark Bay, men and women, while supporting an appropriate participation of Malgana people across the workshops. The workshops had a core group of knowledge holders.
- The project team held evaluations and/or checked-in with Malgana participants throughout to ensure Malgana People continued to support, understand and guide the project.

There are many publicly available engagement tools. Here are three Indigenous-led documents that may be useful resources for research collaborations with Traditional Owners:

1. [Climate Systems Hub First Peoples Platform](#)
2. [The Australian Institute of Aboriginal and Torres Strait Islander Studies \(AIATSIS\) principles of engagement](#)
3. [Australian Institute of Marine Science partnership policy](#)

Cultural strategies and governance

- Malgana People defined the conditions that would make participation in the research equitable, fair and valid. This was done through Malgana customary and corporation governance. In this project, Malgana board members sought, negotiated and supported a proposal for additional resources with CSIRO to ensure cultural and knowledge accountability and capabilities were met. The project progressed only when there was appropriate representation of elders, board members and rangers (inclusive of Malgana People residing within and beyond Shark Bay) and the outcomes considered beneficial to all Malgana People.

Perspectives of research

- Several data and information challenges remain to be resolved. These include: local data storage and access to support Traditional Owner-led analysis; capability to support local interpretation and collaboration about the science information needs to assist Malgana people with their priorities.
- Agreements that include the protection and security of Indigenous Cultural and Intellectual Property is increasingly a standard condition in research collaboration agreements. The work with Malgana Aboriginal Corporation demonstrated that access benefit agreements will be of increasing interest to ensure current and future generations are beneficiaries from the extraction and future utilisation of resources and knowledge that belong to Country and Custodians. Access benefit agreements is one way to support Traditional Owners to access benefits and manage risk when they consent to the collection, modification and relocation of genetic materials from and into their Country as part of research on climate adaptation.
- Time as a risk consideration. This project was extended several times. Flexibility and time to manage risks from Traditional Owners' perspectives can, for policy makers, increase decision and outcome risks. Understanding that policy timeframes, which are scheduled to manage government-determined risks, incur risks to customary and Indigenous corporation governance, these are risks that need to be managed and are often under-resourced and poorly negotiated and understood.

Working better together on the changing environment and climate

Climate change exacerbates other challenges Traditional Owners are already facing. For example, on this project with Malgana People, participants spoke of lack of affordable housing in Denham for Malgana People who wish to return to live or have a base on Country. They also spoke about the impacts of tourism on Country, including limiting the availability of accommodation for rangers, groceries, household essentials, fuel and access to medical care and emergency services. These are more immediate and present concerns that must be included in the conversation about the changing climate.

Meaningful collaboration on climate change can be facilitated by:

- Planning time for making sense of the different types of change that are happening, and their projected potential effects.
- Working locally on the types of changes happening on the ground and supporting Malgana People and other groups to develop their knowledge tools to talk about, understand, manage risks and track changes most relevant to their priorities and to share their knowledge about change.
- Bringing local stories of change into climate adaptation thinking and planning to sit alongside western science as an equal knowledge partner is key to meaningful collaboration.
- Working with the wealth of knowledge and capabilities across the generations who are thinking about the changing climate differently, are sustaining connections to Country in different ways and bring diverse perspectives and framings of the effects of and potential responses to a changing environment and climate change.
- Adopting a strengths-based approach that begins with Indigenous knowledge (Malgana knowledge) and their protocols and respects the growing capacity of Indigenous People (Malgana People) to self-determination over their Country, culture and governance in their customary estate (Gathaagudu), and aims to build their knowledge and capability along with sharing and building understanding about the western science on climate change.
- Situating climate change within a conversation about the changes already happening and are being experienced on Country.
- Exploring opportunities for regional peer-to-peer knowledge exchange and action between members of Traditional Owner groups, rangers, and managers to build and expand the role that Indigenous agencies and research institutions have in supporting cross region capability.

For more information see the project report that also includes learnings from the co-design process and Malgana cultural strategies.

All published information from the project will have been reviewed and agreed to under the Malgana Free Prior Informed Consent process.

We acknowledge that this content contains the name of an Aboriginal person who has passed away.

The CSIRO and Malgana Aboriginal Corporation Team extend its deepest respects to the late Daniel Bellotti, a proud and esteemed Malgana and Nhanda man, and a valued Director of the Malgana Aboriginal Corporation. We honour Daniel's legacy and the strength of his cultural knowledge and leadership. He will be remembered with great respect and dignity.

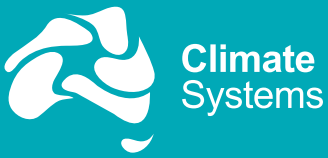
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