

Quandamooka Country: The role of science and knowledge in Traditional Owner-led land and sea management

Acknowledgements

We pay our respect to these lands and seas that comprise Quandamooka Country that has provided for the Quandamooka Peoples for over 25,000 years.

We acknowledge and pay respect to the ancestors that walked and managed these lands for many generations.

We acknowledge the Quandamooka Elders who are the knowledge holders, teachers and pioneers.

We acknowledge the Quandamooka youth who are our hope for a brighter future and who will be our future leaders.

Abstract

The Quandamooka People, the Traditional Custodians of Moreton Bay, have nurtured this region and its land and sea resources for the past 25,000 plus years. Dispossessed of their Country through the colonial process, the Quandamooka People lost the ability to care for their Country. Fast forward to the Twenty-first Century, and we find the Quandamooka People, as an outcome of a Federal Court of Australia determination in 2011, are now recognised as the Traditional Owners of this land and sea country. Consequently, through their Prescribed Body Corporate (the Quandamooka Yoolooburrabee Aboriginal Corporation [QYAC]), they are not only back on their Country but are actively involved in caring for this land and sea country. This paper outlines QYAC's visionary and professional management approach to land and sea management. It discusses how QYAC is managing and safeguarding the *Quandamooka People's sanctuary* through a philosophy of shared use that safeguards Quandamooka's values, interests and vision. The paper introduces QYAC's Land and Sea management philosophy, which is based on contemporary modern day management practices involving an evidence-based approach. However, what is uniquely different in the QYAC case is its move towards fostering a resurgence of Quandamooka culture and environmental protection for their land and sea country. This has resulted in some ground-breaking initiatives that have seen the blending of Traditional Knowledge and Traditional Science with Western Science to inform policy development and management decisions. Five selected case studies have been included to showcase a number of innovative management practices that demonstrate QYAC's leadership role

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in its many collaborative research and management activities. The paper also describes the important role of QYAC rangers in their caring-for-Country responsibilities. The paper demonstrates that QYAC has the experience and capacity to actively lead the management of this country in a Twenty-first century manner especially as this unique area moves towards World Heritage status.

Keywords: QYAC, Indigenous values, Moreton Bay, Science, Aboriginal

Introduction

Moreton Bay lies at the heart of Quandamooka Country, the traditional lands of the Quandamooka Peoples, a First Nation of over 2000 traditional owners from South East Queensland, Australia. It encompasses Mulgumpin (Moreton Island), Minjerribah (Stradbroke Island), and the southern Bay islands (including St Helena, Peel, Cassim, Russell, Karragarra, Macleay and Coochiemudlo). Quandamooka Country extends into four local government areas (Brisbane City, Redland City, Logan City and Gold Coast City) and embraces the mainland from the mouth of the Brisbane River, south through the suburbs of Wynnum, Chandler, Lytton, Belmont, Tingalpa, then onto Cleveland taking in the Redland City coast, and further south to the Logan River (Fig. 1).

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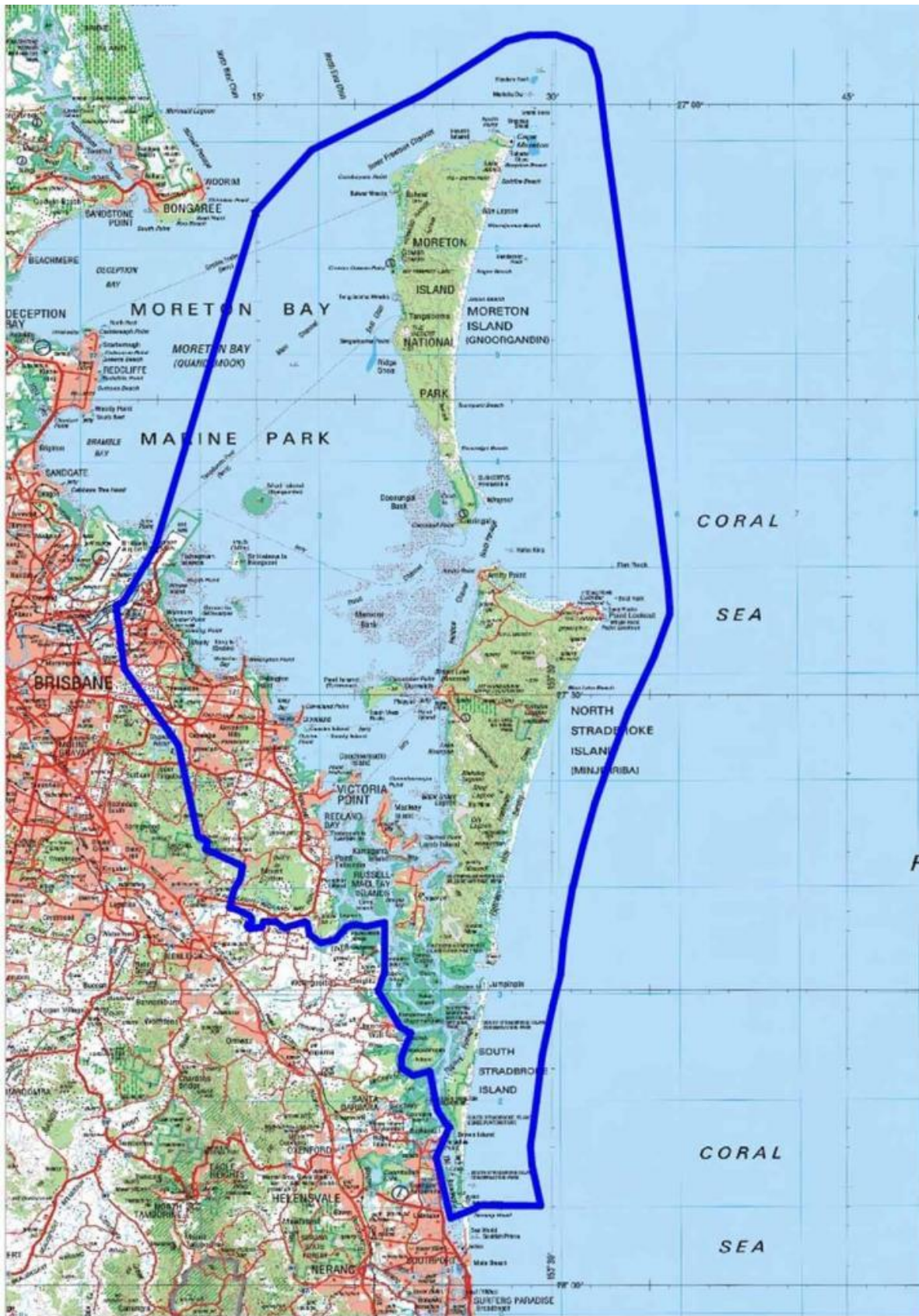


Figure 1. Quandamooka Country. (Source: Quandamooka Yoolooburrabee Aboriginal Corporation 2015 issues briefing for the Queensland Government and Parliament)

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The Quandamooka Peoples, comprising the clan groups of the Nunukul and Goenpul from Minjerribah and Ngughi of Mulgumpin have inhabited this area now for over 25,000 years. The clan groups and their families have carried out their lifestyle and cultural practices in the Bay and on the islands for the full extent of their occupation. The Quandamooka have never ceded sovereignty of their Country and this issue remains live for the Quandamooka Peoples. The Quandamooka clans had their own laws, customs, beliefs and culture, which are still upheld and observed by the Quandamooka People who live, work and practice culture on their traditional lands and seas (1). More recently, the Bay islands were first settled by colonisers around 1825 (2).

Native Title Determination

Colonisation displaced many Traditional Owner groups from their Country and resulted in their inability to be on, and to care for, their Country in traditional ways. This has created a great sense of loss and despair for many Aboriginal people (2-5). However, the Quandamooka People have been able to maintain a continued practice of culture on their Country which was recognised on the 4th of July 2011 by Justice Dowsett, of the Federal Court of Australia, when he handed down a determination which recognised the Quandamooka People as being the Traditional Custodians and original inhabitants of Minjerribah and parts of Moreton Bay (1). This Federal Court of Australia determination recognized the Quandamooka People as having Native Title rights and interests over 54,408 ha of land and sea in the Moreton Bay area (Fig. 2) and included:

- exclusive native title rights (to possess, occupy, use and enjoy the area to the exclusion of all others) over about 2,264 ha of land;
- non-exclusive Native Title onshore rights over about 22,639 ha; and
- non-exclusive Native Title offshore rights over about 29,505 ha of offshore areas/

The Native Title rights with respect to Non-exclusive possession lands include:

- the right to live and be present on the area;
- the right to conduct ceremonies;
- the right to maintain places of importance and areas of significance to the native title holders;
- the right to teach on the area about the physical and spiritual attributes of the area;
- the right to light fires for the domestic purposes such as cooking; and,
- the right to take, use, share and exchange traditional natural resources and seawater for any non-commercial purpose.

On Non-exclusive waters, Quandamooka people have the right to be present on the

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area,



Figure 2. Quandamooka People Native Title Determination Areas (Source:

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<http://www.qyac.net.au/NativeTitle.html>)

including access and travelling across the area and they have the right to take Traditional Natural Resources for non-commercial, personal or communal purposes. These rights are recognised subject to State and Commonwealth laws and are subject to the law and customs of the Quandamooka People.

In addition to this formal recognition, the Quandamooka Peoples entered into Indigenous Land Use Agreements (ILUAs) with the Queensland Government and Redland City Council, which provided further rights and negotiated benefits. Currently there are two further claims in progress which seek to complete the acquisition of other areas of Quandamooka Country. They include: Quandamooka People #4 (Mulgumpin claim); and Quandamooka People #5 (Quandamooka Coast).

Quandamooka People have long standing spiritual and cultural obligations and tradition law and customs in respect to lands and waters that have become protected areas and marine parks under the Nature Conservation Act 1992, the Marine Park Act 2004, the Recreation Management Act 2006 and other lands and waters within Quandamooka Country.

Advent of the Quandamooka Yoolooburrabee Aboriginal Corporation

The Quandamooka Yoolooburrabee Aboriginal Corporation (QYAC) is a Prescribed Body Corporate (PBC) (more technically known as a Registered Native Title Body Corporate (RNTBC)) created in 2011 under the Native Title Act 1993 (NTA). The NTA requires Native Title groups to create a PBC to manage their recognised Native Title rights and interests. Specifically, QYAC manages the following on behalf of the Quandamooka People:

- Implementation of the Indigenous Management Agreement (IMA)
- Joint management of the Naree Budjong Djara (Our Mother Earth) National Park
- Operation and maintenance of the Quandamooka Peoples' Gift Fund
- Ownership and management of Minjerribah Camping
- Right to take and use traditional natural resources

QYAC is registered with the Office of the Registrar of Indigenous Corporations (ORIC). The Registrar is an independent statutory office holder who administers the Corporations (Aboriginal and Torres Strait Islander) Act 2006 (CATSI Act). QYAC is

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required to operate in compliance with the CATSI Act and is regulated by ORIC. QYAC is also the registered Cultural Heritage Body under the Aboriginal Cultural Heritage Act 2003 (Qld). It is responsible for cultural heritage management across the Quandamooka estate.

In addition, QYAC has a number of statutory obligations and key links with the following legislation:

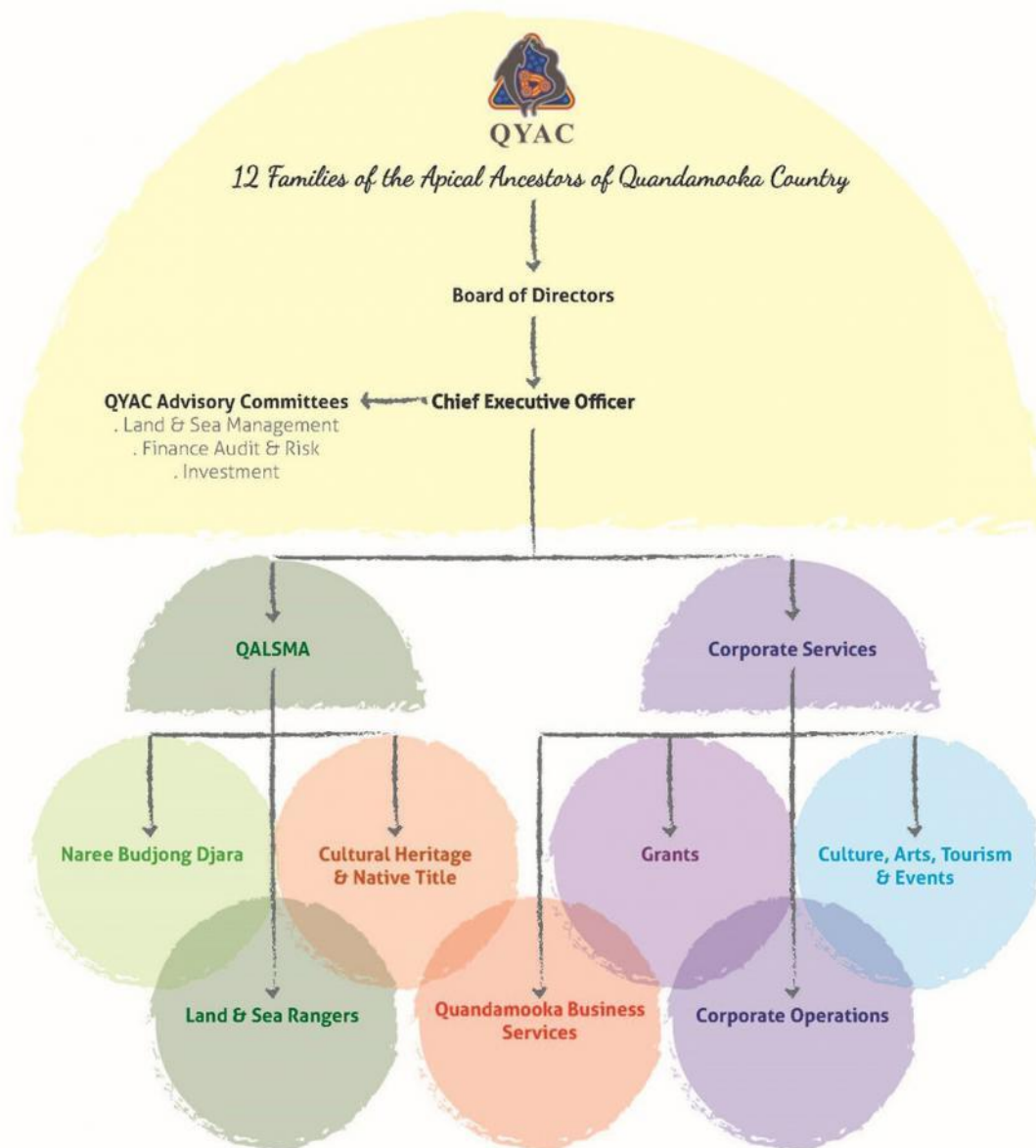
- North Stradbroke Island Protection and Sustainability Act 2011 (Qld) (NSIPSA)
- Nature Conservation Act 1992 (Qld)
- Recreation Area Management Act 2006 (Qld)
- Planning Act 2016 (Qld)
- Native Title Act 1993 (NTA)

QYAC also has a key role to play in the following local plans and strategies:

- North Stradbroke Island Economic Transition Strategy (NSI ETS)
- Quandamooka Action Plan
- North Stradbroke Island Indigenous Business Development Plan
- Quandamooka Aboriginal Community Plan
- Shaping SEQ: SEQ Regional Plan
- Redland City Council City Plan
- Gudjundabu Marumba Gubiyiyanya – Tourism for a Glad Tomorrow – A Five Year Strategy for Sustainable Tourism on Quandamooka Country
- Minjerribah Township Fire Management Strategies
- Dunwich (Goompi) Master Plan (in progress)

The NSIPSA, supported by the above-mentioned plans is the principal instrument to assist Minjerribah to move beyond a sand-mining economy to a more diversified and sustainable economy. Its resultant NSI ETS, complemented by these plans, is key to help focus the efforts of the Quandamooka People to make this transition in a culturally, environmentally and economically sustainable way (6).

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Figure 3: QYAC’s outline organisational structure (Source: QYAC Annual Report 2017-18 (6)).

QYAC’s organisational structure is shown in Figure 3. The Quandamooka Aboriginal Land and Sea Management Agency (QALSMA) looks after all land and sea matters including joint management with the Queensland Parks and Wildlife Services (QPWS) of the Naree Budjong Djara (My Mother Earth) National Park. QALSMA also includes the Native Title and Cultural Heritage Unit and land and sea rangers (see more detailed outline of rangers below). A Land and Sea Management Advisory Committee overarches the operations of QALSMA, as well as providing strategic and policy advice to the QYAC Board through the CEO.

QYAC's overarching land and sea management vision

Land and sea management across Quandamooka Country is aligned to the QYAC Vision: *Quandamooka Peoples caring for Country in a viable economy using traditional and modern knowledge* (7). Of relevance to this vision is one of QYAC's eight Values, namely:

Walk in both worlds – “sustainable ecosystems close to Brisbane”

This Vision is further expanded upon in the “*Quandamooka Action Plan 2013: Future Land Use Proposals for Minjerribah*”, which states:

We, the legal and traditional owners of Quandamooka country, reaffirm and take responsibility for the planning and future well-being of our ancestor's land, sea and sky and our people. In partnership with the mainstream community, we will create a future where our spirit, cultural values and the beauty of our lands and seas are conserved and restored.

We will create a rich and harmonious community life, a vibrant and sustainable economy and a wide range of opportunities for local Quandamooka people. We will respect and strengthen our relationships to each other, to the wider community and to our country. We will teach our young people and the wider community about Quandamooka culture.

We commit to strong community governance that enables our elders, families and young people to work together and manage our shared successes. We exercise self-determination and have meaningful input into decisions that affect our community and our country. Our sovereignty over our lands and waters is recognised and respected nationally and internationally.

All community members will enjoy equal opportunities and work together in a unified way to shape a healthy and happy future for the generations that follow. We honour all those who have worked, and continue, to achieve the dreams and objectives of our people and satisfy the aspirations of our ancestors.

A philosophy of shared use that safeguards Quandamooka's values, interests and vision

Developed by QYAC's Land and Sea Management Advisory Committee, this philosophy is encapsulated as an overarching Statement in a number of key Quandamooka and related initiatives. It states:

Quandamooka Country is the Quandamooka People's sanctuary that we have carefully managed for thousands of generations.

We acknowledge that our physical, spiritual and emotional well-being and connection to country has been handed to us by our ancestors. Through our continued cultural practices we maintain, protect and nurture our cultural and natural values across all of Quandamooka Country for our children's children.

Quandamooka People have always shared our sanctuary with others who respect our values. We must ensure that there is always sufficient space and time for Quandamooka People to access and enjoy country and resources, and to undertake cultural activities.

While the Quandamooka People will continue to control how our sanctuary is shared, our sincerest wish is for visitors to feel welcome and be enriched through engagement with Quandamooka People, Country, and Culture.

Consistent with this philosophy are a set of overriding principles that apply to all current and future activities on Quandamooka Country, namely:

1. Maximise ecological and cultural sustainability before economic benefit;
2. Maximise the material, cultural and environmental benefits for Quandamooka People;
3. Advance aspirations for the World Heritage listing of Quandamooka Country;
4. Ensure QYAC, the Quandamooka Peoples' Registered Native Title Body Corporate; plays the lead role in management and governance;
5. Provide sufficient space and time so that Quandamooka People always have access to enjoy country and cultural resources, and to undertake cultural activities;
6. Promote understanding, recognition and respect for Quandamooka culture and values;
7. Maximise employment, procurement, capacity building and participation for Quandamooka People;
8. Practice ethical behaviour and support reconciliation; and,

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9. Eliminate waste and emissions on Quandamooka Country.

Hence the planning for all future activities on Quandamooka Country need to embrace these principles.

Research protocols and priorities

Consistent with the philosophy of shared use that safeguards Quandamooka's Values, Interests and Vision, QYAC has developed the following set of Research Engagement Protocols (8).

- Ethics: observe, understand and respect the ethical protocols of the local Aboriginal Traditional Owner groups;
- Mutual Understanding and Respect: engagement with Indigenous people requires both parties to work together and understand and respect the needs and values held by one another. Understand and operate within the local customs, protocols and law of Indigenous groups and be sensitive to local issues. Acknowledge the self-determination of Indigenous people and treat them with equality and respect. Similarly, Indigenous people must understand the pressures and requirements of their engaged partner. Good engagement will be flexible to different cultural situations, time, content and custom. Good engagement will demonstrate this through positive cooperation and the creation of better outcomes for the engagement and community.
- Free Prior Informed Consent: Indigenous people want and are entitled to full information regarding all aspects of the engagement process and have the right to say 'yes' or 'no' through their traditional decision-making processes. Good engagement will provide this. (Nota Bene: *Free*, refers to consent obtained without coercion or manipulation; *Prior*, refers to meaningful, informed consent sought sufficiently in advance of the proposed activities; *Informed*, means that the process must involve consultation with and participation by people potentially affected with full disclosures of the proposed activity in an accessible and understandable form; and, *Consent*, must be indicated in writing and/or as an audio/visual recording).
- Equitable Benefit-Sharing: engagement must produce direct benefits to Traditional Owners and reinforce Traditional Owners' self-determination through their full and ongoing active participation and negotiation in the decision-making process for project planning and implementation according to local priorities.
- Participation, Collaboration and Partnership: Indigenous people have the right to full participation appropriate to their skills and experiences in relevant projects and processes.
- Reporting and Compliance: projects should include appropriate mechanisms and procedures for reporting on ethical aspects of the project and complying with

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engagement protocols and guidelines.

- Confidentiality: when requested by Traditional Owner knowledge holders and/or owners, confidentiality of this knowledge and/or of Traditional Owner intellectual property is to be strictly observed. This is an over-riding requirement to all other engagement principles.

QYAC encourages research that builds a more detailed picture of the species that occur in their land and sea country including their distribution and abundance, particularly for species of significance to Quandamooka as well as rare and threatened species. Better knowledge of the islands and surrounding waters will be very helpful for their ongoing management responsibilities.

QYAC is endeavouring to:

1. identify the significant gaps in knowledge about the island's and water's ecosystems and species and to encourage and facilitate research that aims to fill those gaps;
2. identify the threats that various species and habitats face and how they can be managed, including the priorities for that management;
3. better understand the geology and hydrology of the island, in particular, how water travels throughout the sand mass and its relationship with the terrestrial environment;
4. encourage research that better informs the management of fire on the islands, especially the importance of traditional techniques of the use of fire for landscape management; and,
5. establish long term management regimes that safeguard the biodiversity and ecosystems and cultural heritage of their *Country* that will play a crucial role in future cultural ecotourism activities. Research that aims to improve knowledge and inform management to ensure these systems remain healthy into the future is valuable.

QYAC's land and sea management philosophy

Evidence-based approach

QYAC has adopted a science (evidence) based approach to inform its planning and management initiatives in exercising its responsibilities as the agent for the Quandamooka Peoples. This management approach is evidence based and science informed, not science driven.

The goal is to fully utilise evidence based approaches to land and sea management

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(embracing land use planning and cultural resource management) that is supported by Citizen Science and Indigenous Knowledge and Science, consistent with QYAC's Strategic Vision: *Quandamooka Peoples caring for Country in a viable economy using traditional and modern knowledge*. In their use of conventional western science complimented by traditional knowledge and science, QYAC seeks opportunities to add a Citizen Science dimension to assist in this marriage of western science and traditional science.

Overarching principles of sustainability and resilience underpin all QYAC initiatives, includes monitoring and evaluation of ecological and cultural assets, and the use of an Adaptive Management Framework to manage ongoing activities.

Traditional Knowledge

QYAC's approach is fostering a resurgence of Quandamooka culture and environmental protection for their land and sea Country. This is enabling more Traditional Custodians of Quandamooka to care for Country.

The Traditional Custodians of Quandamooka have been gifted with Quandamooka Knowledge through observations and repeated practices for thousands of years. Quandamooka knowledge encompasses all things relating to the natural environment and often aligns with a western notion of scientific practice. It is derived from a dataset that is much longer than any scientific observation post-colonisation. The knowledge is also important as it tells a story and enables future custodians to use the same knowledge and expand on it. Quandamooka people have now enhanced the ways in which they use this knowledge to care for country by working with contemporary scientists and including their science into their practices where appropriate.

For many years Quandamooka Knowledge has been appropriated and ignored by non-community members. The Quandamooka Traditional and Cultural Knowledge expressed in this paper is Indigenous Knowledge and is being used in this paper with their consent. It cannot be used without the permission of the Quandamooka People (see Research Protocols).

This Chapter demonstrates the importance of Traditional Custodians to the lands and seas of Quandamooka Country, just as the lands and seas are important to the people. It explores the new westernised managerial role of the Quandamooka People and how that has enhanced the role for traditional practices of caring for country. It also looks at how traditional knowledge and aspects of contemporary caring for Quandamooka Country are playing a key role in contemporary traditional custodianship of the Bay, through fostering and managing scientific research and monitoring. It includes an

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assessment of current gaps identified, areas for increased improvement and influence of the Traditional Custodians and the benefits of this for the community.

Roles of rangers

QYAC rangers are an important source of scientific capability. Their location on Country and their knowledge of Country make them ideal collaborators for a range of science-based activities such as data collection and monitoring, but also for the provision of expert knowledge for management issues. Thus, the value of the ranger units has become increasingly important in the ongoing management of the Bay and islands.

As previously noted, QALSMA overseas more than 25 people within six Ranger Units working across the Quandamooka estate. They include four ranger groups directly employed through QYAC (DES Rangers, Indigenous Advancement Strategy Rangers (IAS), Naree Budjong Dara National Park (NBDNP) Joint Management Rangers (QYAC/QPWS), and Fee-for-Service rangers. In addition, there are the QPWS Rangers who are directly employed by QPWS and work under the joint, management framework of QYAC and QPWS, and the Minjerribah Camping Rangers who undertake work in the areas under the management of Minjerribah Camping (a company wholly owned by QYAC). Further explanation of each ranger unit’s roles within QALSMA is outlined in Table 1.

Table 1. QALSMA ranger types and roles: DES, Department of Environment and Science; PM&C, Department of Premier and Cabinet; QPWS, Queensland Parks and Wildlife Service.

Ranger Type	Roles & Responsibilities	Activities	Funding Source
Indigenous Advancement Strategies Rangers	Estate management (mgt), visitor mgt, asset mgt, safety, marine mgt, pest mgt, fire mgt, cultural heritage within Quandamooka Country .	Marine compliance, Reef Check, MangroveWatch, Seagrass-Watch, freshwater surveys, weed eradication, feral animal control, control burning, fire trail maintenance, preserving cultural heritage with fire preparation, terrestrial compliance and education .	PM&C
Minjerribah Camping Rangers	Recreation area management - camping grounds, fire mgt .	Visitor management .	Minjerribah Camping

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Ranger Type	Roles & Responsibilities	Activities	Funding Source
Fee For Service Rangers	Undertake works for Clients on a commercial basis where it aligns with the Quandamooka People’s land and sea management principles.	Weed control, fire preparation, asbestos and contamination removal, land restoration, controlled burn activities, vegetation management.	Various clients who engage QYAC on a commercial basis.
DES Rangers -Indigenous Land & Sea Ranger Program	Visitor mgt, asset mgt, safety, marine mgt, pest mgt, fire mgt, estate mgt, cultural heritage mgt within Quandamooka Country .	Marine compliance, Reef Check, MangroveWatch, Seagrass-Watch, freshwater surveys, weed eradication, feral animal control, control burning, fire trail maintenance, preserving cultural heritage with fire preparation, terrestrial compliance and education .	DES
Naree Budjong Dara National Park (NBDNP) - Joint Management Rangers (QYAC/QPWS)	Estate mgt, visitor mgt, asset mgt, safety, pest mgt, fire mgt, cultural heritage mgt within NBDNP & Teerk Roo Ra National Park (TRRNP)	Marine compliance, Reef Check, MangroveWatch, Seagrass-Watch, freshwater surveys historical preservation at lazaret and peel island. Weed eradication, feral animal control, control burning, fire trail maintenance, preserving cultural heritage with fire preparation, terrestrial compliance and education .	DES – QPWS
QPWS Rangers – NBDNP	Estate mgt, visitor mgt, asset mgt, safety, pest mgt, fire mgt, cultural heritage mgt within NBDNP & TRRNP	Marine compliance, Reef Check, MangroveWatch, Seagrass-Watch, historical preservation at lazaret and Peel Island, weed eradication, feral animal control, control burning, fire trail maintenance, preserving cultural heritage with fire preparation, terrestrial compliance and education .	DES

These ranger units are the most involved Quandamooka People on Country and play a key role in managing their people’s cultural heritage rights and interests. They are important representatives for the Quandamooka People, act as role models in the Quandamooka community and care takers of Country for those who are unable to due to work, family and modern life commitments (Fig. 4).

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Figure 4. Caring for Quandamooka Country – QYAC Rangers traverse many remote locations (e.g. 18 Mile Swamp). (Photo credit: QYAC)

Given the current suite of management challenges and threats to Moreton Bay and its critical importance to the Quandamooka People, the broader community, and to various levels of government it is vital that the Quandamooka Ranger Program be strongly supported. This highly cost-effective program needs to be able to contribute and collaborate in future research initiatives, as well as continuing to complete the large workloads on which they currently are required to deliver.

Collaborative research

In exercising its leadership role in the management of Moreton Bay and its resources, QYAC engages and collaborates with a range of research organisations to provide important new knowledge to help manage their priority issues for the Bay. Collaborators include universities, agencies, consultants, expert volunteers and citizen scientists. For example, QYAC has been involved with a number of collaborative environmental monitoring programs that collect ongoing data about the status of key habitat types in the Bay, including coral reefs (Reef Check (Mulloy *et al.* (9), <http://www.nrm.gov.au/indigenous-nrm/south-east-queensland/bays-reefs>), seagrass communities (Seagrass-Watch) and mangroves (MangroveWatch). These programs aim to deliver a long-term view of the health of these critical ecological communities.

QYAC has also entered into a number of MoUs with universities, government agencies and Natural Resource Management organisations with the aims of facilitating ongoing collaborative research and gaining access to experts and appropriate world class knowledge and science. Examples include MoUs with the University of Queensland and

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Healthy Land and Water (HL&W), formerly South East Queensland Catchments. In the case of the latter, the partners worked collaboratively on a number of environmental projects that allowed QYAC to access HL&W's project delivery expertise and experience, which supported QYAC to further improve its capacity to conserve and protect the environment. In return, HL&W drew on the Quandamooka People's thousands of years of experience with managing its Country whilst building its capacity to become a culturally competent organisation.

Collaborative Management

The Bay is jointly managed through a range of Commonwealth and State legislation as well as through various instruments of the coastal Councils including Redland City, Logan City, Brisbane City and Moreton Bay Regional Councils and supported by the national NRM Regions Framework. The management of Quandamooka Country by its Traditional Custodians is part of this network and relies on strong partnerships and close collaborations with State government departments local authorities, and non-government organisations.

QYAC has recently entered into a range of partnerships with the State Government to help foster the collection of new knowledge and integrated management decisions. For example, in 2019 QYAC entered into an MoU with the Queensland State Government to help 'pave the way for education and training opportunities for Quandamooka people, UQ students and researchers through the development of joint ventures, including the integration of Quandamooka Ranger initiatives and UQ research' (Courier Mail 19/02/2019).

QYAC now has senior-level representation on a range of government-led fora set up to help manage the Bay. For example, QYAC sit on the Moreton Bay Fisheries Working Group which provides advice on fisheries management and resource sharing within the Bay. It is also a member of the State Government's Koala Advisory Council.

At the local government level, QYAC is partnering on a range of issues affecting management of the Bay. For example, Redland City Council are currently working with QYAC to develop a Coastal Hazard Adaptation Strategy to help manage current and future issues relating to coastal erosion, storm tide inundation and sea level rise.

A number of examples of the successful independent and collaborative research initiatives undertaken by QYAC in their management of Quandamooka Country, are set out below.

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Case Study 1: Quandamooka World Heritage Tentative List nomination

In November 2016, QYAC submitted to the Queensland State Government a Tentative List Nomination for World Heritages status over the Quandamooka Estate. QYAC has received expert advice that the nomination should be submitted as a mixed cultural-natural site. Therefore, QYAC presented a case which outlined the basis for a Tentative Listing based on Criterion (v) (cultural) and Criterion (x) (natural). Whilst it is recognised that the estate has many other values, it was felt appropriate to concentrate on the most prospective cultural and natural criteria. Only one criterion is required to be met for World Heritage listing.

The evidence presented for the cultural criterion is based on archaeological heritage of the Moreton Bay Islands which is an extensive, rich and diverse cultural record ranging over the last 20,000 years. It comprises over 1000 known sites, including shell middens, stone artefact scatters, stone artefact quarries, burials, scarred trees, earthen ceremonial rings, story places, pathways, and stone fish traps. Archaeological sites are found on all the Moreton Bay islands, although the type and character of the evidence varies according to a range of factors including the resource availability, accessibility, seasonal use and social factors.

The evidence presented for the natural criterion covers the unique marine, terrestrial and wetland habitats. The Quandamooka nomination is embedded in a comprehensive protected area legal framework (Marine Park, National park, Conservation Areas, Fish Habitat Areas, Ramsar wetlands, migratory bird agreements). A single zoning based management plan provides protection to the whole of the marine environment and similarly management plans are in place or under way for terrestrial components. The wetlands are protected, and of a size, diversity and condition to retain the critical habitats for migratory wader birds on the East Asia-Australasia Flyway. Australia is a signatory to international migratory bird agreements with Japan, China and Korea, of direct relevance to Moreton Bay wetlands.

QYAC is currently leading the progress on the nomination for World Heritage listing of Quandamooka Country. This process will involve the collation of a considerable range of significant scientific information to fully support the nomination and the access to world class researchers and scientists for advice and support.

Case Study 2: Guiding the planning and emergency response for fire events on Minjerribah

Minjerribah contains numerous freshwater wetlands, cultural heritage sites and unique ecosystems. In January 2014, fires impacted 16,800 hectares of Minjerribah or roughly

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80% of the terrestrial landscape. This area included as many as 150 recorded cultural heritage sites, many of which are among the oldest formerly documented archaeological sites on the East Coast of Australia.

The 2014 fires prompted QYAC to highlight with multiple levels of government the need to better manage fire on Minjerribah and reintroduce appropriate land management practices informed by cultural landscape values and Quandamooka tradition. In 2017 QYAC entered into a MoU with the Queensland Reconstruction Authority to develop fire management strategies to better manage fuel loads and respond to fire events on Minjerribah. The strategies address risk mitigation, planned burning, hazard reduction and wildfire suppression for landscapes in and around each of the Island's townships. Critically, the strategies also complements the fire management strategy developed by QYAC in partnership with the QPWS for Naree Budjong Djara National Park. In combination, this Quandamooka driven approach aims to greatly reduce the risk of an island-wide bushfire and forms a comprehensive bushfire management and planning framework across all tenures on the island with support from all land management agencies and Queensland Fire and Emergency Services (QFES).

The Minjerribah Township Fire Management Strategies integrate modern disaster management techniques with the traditional burning and fuel load management practices of the Quandamooka People. Since their development, these fire management strategies have been recognised through the Resilient Australia Awards and by the Queensland Inspector-General of Emergency Management as an outstanding example of a cooperative, locally-led approach to fire management (10).

The Minjerribah community now has approximately 25 Quandamooka rangers qualified in best practice fire management and response working for QYAC, Minjerribah Camping, and the QPWS. This has been complemented by an expansion of rural firefighters trained in wildfire response to assist local QFES crews, Redland City Council responders and staff employed by mining company Sibelco. QYAC has worked to source resources to ensure Ranger units are well equipped with firefighting equipment. The ranger team now includes a fleet of four-wheel-drives fitted out with fire units to emergency services standards; All Terrain Vehicles equipped with tanks and hoses to enable access to some of Minjerribah's most difficult to reach landscapes; and heavy equipment including tractors, loaders, and mulching machinery to enable tracks to be prepared and fire breaks to be cut.

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Figure 5. QYAC Rangers undertaking regular controlled burn activities at night to make use of optimal climatic conditions (Source: QYAC).

On 28 November 2018, as bushfires once again threatened Minjerribah with extreme weather conditions present throughout eastern Queensland, QYAC were represented 24 hours a day at the Incident Control Centre (ICC) coordinating the event on the Island, and were heavily involved in decisions about managing the bushfire response. The ICC's planning and response was heavily informed by QYAC's mapping and geographic information system (GIS) capabilities and QYAC's knowledge informed agencies of the cultural and ecological values, unique landscape and access points. QYAC's involvement highlighted methods to contain the fire, and cultural advice was sought on critical matters by all agencies. The Quandamooka People led the front line on the ground and ensured cultural values were recognised for their irreplaceable nature and considered as assets worthy of proper protection consideration. The fire response was directed with these values in mind and Queensland Fire and Emergency Services directed water bombing aircraft and helicopter firefighting units to protect cultural landscapes containing sacred features including scar trees, bora grounds, artefacts, and ancient trees in the south of the Island.

The Queensland Inspector-General of Emergency Management in the 2018 Queensland Bushfires Review recognised that the involvement of the Quandamooka People through QYAC was a critical success factor in the response to the 2018 bushfire (Fig. 5), and ensured that the response protected cultural and ecological values in line with the QYAC designed fire management strategies (10). The Inspector General's report also

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recognised the response to the 2018 fire event on Minjerribah as “an example of effective interoperability between different agencies with different structures working towards a common outcome, informed by traditional Aboriginal practices” (10).

Case Study 3: Traditional Owners leading the assessment of sustainable fisheries values – beche-de-mer

Through the Indigenous Business Development Fund supported through the ETS, an expert study was commissioned by QYAC to provide information to assess a developmental fishery for beche-de-mer (sea cucumbers) in the Bay. Beche-de-mer were historically fished by Quandamooka People through Indigenous Owned businesses in the early 2000s, but this ceased in 2007, and there has been no approved commercial fishing activity since then. It was proposed that the reintroduction of this fishery could build additional fishing and fisheries management capability for the Quandamooka people as well as a new source of income.

However, acknowledging the fundamental principle of caring for country and that Quandamooka Country would be first recognised as the Quandamooka People’s sanctuary, it was concluded that a thorough assessment of the current state of the fishery needed to be conducted. This work led to new insights showing concerning declines of some elements of the beche-de-mer population that demonstrated key issues in the Bay require further investigation. The 2018 survey and assessment, led by beche-de-mer fishery experts (11), established that major changes in beche-de-mer populations have occurred between 2007 and 2018. The two most concerning changes were the disappearance of sandfish (*Holothuria scabra*) from the area adjacent to southern Moreton Island and the complete disappearance of peanutfish (*Stichopus naso*) from all surveyed areas.

These changes are difficult to explain given that the Bay, and eastern Bay in particular, have been given ‘B+’ or ‘A’ report card ratings (<https://hlw.org.au/report-card/>) in recent years. There is also a general lack of parallel biophysical data on the drivers that could be in play, especially those that could affect the distribution and abundance of beche-de-mer, including during recruitment and growth phases of their life cycle. However, data on the relevant biophysical drivers of beche-de-mer populations can be difficult to obtain or may not have been collected. Furthermore, the sensitivities of beche-de-mer to a range of biophysical factors is not well understood. For example, the relationships between beche-de-mer health, distribution and abundance, and factors such as water temperature, abiotic seasonal shifts and indirect impacts of habitat change are not well established.

This complex management issue demonstrates the challenges that occur in complex

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marine systems, and that are potentially becoming more acute as the impacts of climate change continue to affect marine environments. Such challenges will continue to highlight the need to support further growth in QYAC's capacity to manage complex issues in the Bay in collaboration with research and monitoring agencies, as well as the interaction with organisations that have a key stake in the Bay's ecological health (e.g. HL&W, QPWS and the Qld Department of Forestry and Fisheries).

Case Study 4: Working in partnership with community and not-for-profit groups to care for Quandamooka Sea Country

Despite the disruption of European settlement, the Quandamooka people have maintained a special connection with Moreton Bay's land & sea country that saw them play a role in industries such as the dugong oil trade, oyster farming, whaling, and commercial fishing. Natural resource management and the protection of land & sea country is a relatively new industry in comparison, with many of Moreton Bay's National Parks and Marine Parks only established or expanded during recent decades.

On March 11, 2009, the "Pacific Adventurer" spilt 270 tonnes of oil into the Pacific Ocean in proximity of Moreton Island after Cyclone Hamish contributed to extreme weather in the region. The resultant oil slick impacted beaches, rocky reefs, wetlands, mangrove systems, and saltmarsh intertidal environments between Bribie Island and Coolum on the Sunshine Coast with the most extensive impacts being on Moreton Island. In this instance the Quandamooka People played a key role in clean up and rehabilitation works in partnership with all levels of government and community. This also presented an opportunity to increase capacity through the development of a Quandamooka Ranger team supported by the Regional NRM Group SEQ Catchments (now Healthy Land & Water (HL&W)). Many of these rangers continue to be employed by QYAC and through partner agencies.

Since this time QYAC has continued to grow and demonstrate its capacity in Sea Country management. As part of a coordinated approach to demonstrating sea country management capacity, QYAC in partnership with community and not-for-profit groups developed a sea country management program involving monitoring and assessment of ecosystems throughout Moreton Bay as well as direct rehabilitation works in targeted locations that result in immediate benefits for some of Moreton Bay's most sensitive marine ecosystems (Fig. 6).

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Figure 6. QYAC Sea Rangers in Moreton Bay: growing young Quandamooka People to be the future leaders in caring for country (Source: QYAC).

This approach to increased involvement of Quandamooka Rangers in the management and monitoring of Sea Country has seen Quandamooka People strengthen skills in undertaking seagrass assessments, coral reef monitoring, improve understanding of dugong & turtle populations, as well as assessing the health of mangrove fringed coastlines throughout the entirety of the Quandamooka Native Title area. Some of the assessments conducted of these natural values have been done for the very first time and have demonstrated QYAC's capacity to undertake assessments of marine ecosystems while contributing to the wider community's understanding and knowledge of Moreton Bay.

The partnerships formed with environment focused not-for-profit groups across Quandamooka Country as a result of this approach have proven to be ongoing with Quandamooka Rangers able to regularly draw on the knowledge of organisations such as Reef Check Australia, Wildlife Preservation Society of Queensland, James Cook University, Griffith University, State Government Departments, the University of Queensland, Seagrass-Watch, Queensland Turtle Research

as well as through Healthy Land & Water. It is expected that a focus on Sea Country will form a cornerstone for a future MoU with the State Government for the management of

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the Moreton Bay Marine Park, which will further increase active management of Sea Country by the Quandamooka People.

The value of Quandamooka involvement in undertaking marine environmental rehabilitation and monitoring activities cannot be overstated. While community and not-for-profit groups often strive to protect and restore landscapes using an organisational capacity built up over years or decades, Quandamooka People are part of a society and culture that has an intrinsic knowledge, understanding, and connection to the landscape. Built up over thousands of years, it is seldom easily accessed through conventional research. These Sea Country initiatives delivered over the past decade have identified that community and not-for-profit groups working in partnerships with QYAC produce mutually beneficial land and sea country management outcomes whilst also building community capacity to enable active management of these ancient landscapes into the future.

Case Study 5: Blockbuster filming activities considering first nations culture and country

Aquaman, a Warner Brothers superhero blockbuster starring Jason Momoa in the title role along with Nicole Kidman, Amber Heard and Willem Dafoe, involved a number of scenes shot on Minjerribah during 2017. The film shoot involved 250-plus crew and actors conducting filming activities on some of Minjerribah's most significant coastal landscapes.

The makers of *Aquaman*, directed by Australian James Wan, spent about \$100 million on physical production in Queensland. QYAC worked with Warner Bros Feature Productions for several months to prepare for the filming. This included providing Native Title and Cultural Heritage guidance, briefing Elders on the proposed filming activities to understand their level of cultural appropriateness, and scoping film locations for their potential cultural and environmental suitability and works requirements.

Logistically, the shoot was a major exercise. QYAC played a vital role, providing cultural heritage monitoring before and during filming and undertaking considerable earth works at South Gorge to install a temporary track onto the beach capable of transporting machinery and multi-million-dollar film equipment from Point Lookout headland onto the sands of South Gorge. Prior to earthworks Quandamooka rangers were involved in removing dune vegetation with the assistance of the local Bushcare group so that this same vegetation could be replanted at the completion of filming. Rangers also helped to construct the site and supported the film crew during filming, and were involved in undertaking rehabilitation activities at the site for several months post filming. The landscape today contains fewer weeds and has a dune formation

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consisting of endemic dune species (Fig. 7).



Figure 7. Quandamooka Rangers prepare vegetation for frontal dune rehabilitation at South Gorge, Point Lookout following filming of the blockbuster Warner Brothers film, *Aquaman* (Source: QYAC).

At the peak of the filming QYAC provided a cultural briefing and Welcome to Country for all film participants whilst Elders were introduced to the site and crews to observe activities. Cultural Heritage Monitors and Rangers ensured Quandamooka protocols were followed and throughout Warner Brothers responded to advice from the monitors and rangers to ensure minimal risk of cultural and environmental impact. The film makers employed more than 30 locals to do everything from undertaking security, performing lifeguard duties, and driving just about every crane and forklift on the island, with these outcomes supported through the guidance of Quandamooka Rangers on the ground. *Aquaman* has since become one of the highest grossing films in cinema history. Many Quandamooka People can feel proud of their contribution to making the film a reality in a way that protected and considered culture and Country. Importantly it must also be recognised that the filming team from Warner Brothers ensured that the Quandamooka People were treated with respect and appropriately recognised as the custodians of the landscapes where the filming was taking place.

A selected list of QALSMA land- and sea-focussed initiatives for the past three years has

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been assembled as Annex A. It demonstrates the range and diversity of activities that QALSMA and in particular its rangers, has been involved with in looking after Quandamooka Country.

Conclusion

The integration of Traditional Knowledge and Science and Western Science into the growing custodianship role being provided by the Quandamooka People provides a recipe for an effective and acceptable, long-term management approach for the Bay. The Native Title decision and the formation of QYAC were important steps towards accrediting this new approach and have resulted in a portfolio of new and old initiatives that are transforming management of the Bay and its resources.

QYAC's growing role in these areas provide new opportunities for the sustainable management of the Bay's resources, but also for new sources of economic development, such as ecotourism. QYAC's diverse ranger capability and growing links with research and government organisations is facilitating an expansion in new knowledge for the Bay.

This Chapter has shown how the Quandamooka People, the Traditional Owners of Moreton Bay, who have nurtured this region for the past 25,000 plus years, are now seeking to protect their sanctuary, through a philosophy of shared use that safeguards Quandamooka's values, interests and vision through Traditional Owner-led land and sea management.

Annex A. Selected QALSMA Land & Sea-focussed Initiatives (2017 - 2019)*.

Abbreviations: DES, Department of Environment and Science; DNRME, Department of Natural Resources, Mines and Energy; HLW, Healthy Land & Water; LGAQ, Local Government Association Queensland; NESP, National Environmental Science Program; QALSMA, Quandamooka Aboriginal Land Sea Management Agency; QPWS, Queensland Parks & Wildlife Service; RCC, Redland City Council.

Number	Project	Report
1	Feral Animal Management on North Stradbroke Island	HLW provided funding support for QALSMA to undertake feral animal control activities during 2017 and 2018, which has seen several hundred foxes controlled in partnership with other land managers and reduced the threat from foxes and feral cats to the islands precious wildlife.

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Number	Project	Report
2	Stage 1 Kaboora (Blue Lake) Visitor Facilities Upgrade	QALSMA worked closely with the QPWS to upgrade the visitor facilities associated with Kaboora, which included walking trail upgrades, car parking facilities, and signage works.
3	Naree Budjong Djara NP Strategic Fire Trails	QALSMA delivered fire management trail upgrades for QPWS on identified Priority 1 Firelines across Naree Budjong Djara National Park complimented by cultural heritage monitoring.
4	Development of Cultural Health Indicators for Indigenous Joint Management Areas.	This project involves the development of indicators of cultural health and measures to assist in monitoring for the effective management of Naree Budjong Djara National Park.
5	Coastal Hazard Adaptation Consultancy for RCC	QYAC in partnership with David Brewer Consulting and HLW are providing consultancy services to RCC to progress Coastal Hazard Adaptation Planning across Redland City. This project is being delivered under the QCoast 2100 funding program, managed by the LGAQ aimed at assisting coastal Councils across Queensland to prepare their Coastal Hazard Adaptation Strategies.
6	Maintenance works on Reserves managed by RCC	RCC provided support to QYAC for Community Rangers to undertake weed control and land management maintenance activities on reserves that were formally managed by RCC but are now managed by QYAC.
7	North Stradbroke Island Fire Management Works Program	The DNRME engaged QYAC through QALSMA to undertake a number of land management activities to support fire management operations on land managed outside of Naree Budjong Djara National Park. This included the removal of hazardous trees overhanging trails, management of vegetation to reduce fuel hazard, the establishment of fire trails, and fire operational activities.
8	Indigenous Engagement Action Planning for HLWr	QYAC was engaged by HLW to support the development of an Indigenous Engagement Action Plan to assist the organisation better understand current and future mechanisms for engagement with Indigenous stakeholders.
9	One Mile Track Maintenance	QYAC through QALSMA worked with DNRME to undertake One Mile track maintenance activities utilising local contractors including the repair of existing tracks, improving drainage, and grading surfaces.

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Number	Project	Report
10	Increasing Quandamooka On-Ground Participation and Stakeholder Cultural Awareness Raising at Narlung	This project funded by HLW involved QYAC working to increase the participation of Quandamooka People in on-ground land management activities while improving Council and Community Group awareness of Quandamooka cultural values in the Lota and Manly area, which is known by the traditional name of Narlung.
11	Minjerribah Bushfire Management Planning	QYAC has been working closely with the Queensland Reconstruction Authority and other State Government Agencies to develop Bushfire Management Plans for the townships on Minjerribah to complement the fire management planning that has taken place for Naree Budjong Djara National Park. The Bushfire Fire Management Plans aim to Improve community safety and protect life and property; Realise the aspirations of the Quandamooka People; and protect and maintain natural and cultural heritage and cultural landscape values.
12	Trail maintenance activities for Naree Budjong Djara NP	Slashing services for QPWS to maintain existing fire trails within the Restricted Access Area of Naree Budjong Djara National Park.
13	Dunwich Seawall Temporary Repair	RCC engaged QYAC to undertake the temporary repair to the seawall located at the barge ramp loading facility following the formation of cavities in the side of the seawall.
14	Ecological Study of the Restricted Access Area of Naree Budjong Djara NP	This project being funded by the QPWS involves QYAC through QALSMA undertaking an assessment of the significant ecological values of the Restricted Access Area at the southern end of Minjerribah so that these values can be better understood and managed. This project is continuing during 2018-19.
15	Peel Island Planning Study	QYAC is working with the QPWS to better understand the future opportunities, constraints and potential operational needs to support effective management of the Island. This project is continuing during 2018-19.
16	Quandamooka Festival 2017 Temporary Public Art Banners	As part of the 2017 Festival QYAC with support from RCC established public art works from Quandamooka Artists at several locations throughout RCC.
17	Feral Animal Control Services in Naree Budjong Djara NP	QPWS sought the involvement of QALSMA in the coordination and delivery of feral animal control activities within the National Park with a particular focus on foxes and feral cats.

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Number	Project	Report
18	Filming and location support for Warner Brothers Limited	The blockbuster movie Aquaman was filmed on Minjerribah during 2017 and QYAC provided support in establishing the set at South Gorge, undertaking cultural heritage monitoring, and rehabilitating the site after the completion of works.
19	Fire Management Support Activities for RCC	QYAC through QALSMA undertook fire management services for RCC on a number of their reserves including the management of weeds, the reduction of fuel loads, and participation in fire management operations.
20	Coochiemudlo Island Weed Control Training	Thanks to support from Coochiemudlo Coastcare, Quandamooka Community Rangers participated in training and delivered weed control activities on the island using the innovative and cutting edge steam weeding technology. This project is continuing during 2018-19.
21	Mooloomba Artificial Reef	QYAC through QALSMA provided support to QPWS in the scoping and development of an artificial reef project for Quandamooka Country.
22	Weed Control Works along East Coast Road	TMR identified priority weeds for control along areas of East Coast Rd with particular focus on Leucena. QALSMA Community Rangers undertook these works.
23	Assessment to support Pipe Removal works at Bradbury's Beach	Old pipe infrastructure associated with the UQ Research Station poses a safety hazard within the Bradbury's Beach Area. QYAC is working with UQ to assess how the removal works can be undertaken whilst protecting the environmental and cultural values of the site. This project is continuing during 2018-19.
24	South Gorge Fence Replacement	QYAC worked with Warner Bros and RCC to scope the replacement of the fencing at South Gorge following filming of Aquaman.
25	Native Bee Trial	QYAC works with Star Entertainment to trial native bee hives and production. This involves working with renowned entomologist Dr Tim Heard and including training to Quandamooka Rangers and Elders in how to look after and establish native bee populations.
26	Capembah Creek Boardwalk Maintenance	QYAC regularly undertakes maintenance activities on the Boardwalk at Capembah Creek for RCC including works to improve the longevity and sustainability of the decking.
27	Speedy's Lane Dangerous Tree Management	The DNRME engaged QYAC to remove dead and dangerous trees overhanging the Speedy's Lane fire trail that had the potential to impact upon the trails suitability for emergency vehicle access.

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Number	Project	Report
28	Amity Point Erosion Emergency Works	Significant coastal erosion events occurred at Amity Point during 2017-18 and QYAC worked closely with RCC to undertake repair works to protect property in the area. This included working with local subcontractors and the provision of cultural heritage advice and oversight.
29	Cleveland Library Mural Dabilbahnba - place of saltwater	As part of the 2017 Quandamooka Festival, a 9 m tall mural entitled Dabilbahnba - meaning place of saltwater - now adorns the Cleveland Library building in Middle Street. Prominent Quandamooka artists, mother and daughter team Sandra and Shara Delaney worked to bring the mural from conception to completion with artists Matthew Newkirk and Deb Mostert. The project was delivered by QYAC in partnership with Creativemove and support from RCC.
30	Develop and Improve Minjerribah Recreational Trails	QYAC worked closely with the department of State Development to scope up the Recreational Trails project which is to be delivered as part of the Economic Transition Strategy. This project is now underway.
31	Follow up filming support for Warner Bros.	The Aquaman team returned to Minjerribah in October 2017 to undertake additional filming activities and QYAC once again provided location support services and cultural heritage expertise to support the project.
32	Fire Trail Slashing Services	DNRME is responsible for an extensive fire trail network on Minjerribah, and QALSMA provides slashing services to support DNRME in the maintenance of this network.
33	Honey Bee Trial	QYAC is working with industry and research institutions to investigate the potential for more people working in the Minjerribah honey industry.
34	Jeff Horn visits Minjerribah	In the lead up to his fight at Suncorp Stadium Jeff Horn visited Minjerribah to undertake filming for content in the lead up to the big fight. QYAC worked with the filming team to showcase Quandamooka Culture and Minjerribah's landscapes and welcome Jeff to Quandamooka Country.
35	Embracing the Bay	RCC held their first ever Embracing the Bay event which was delivered at Raby Bay. Quandamooka Culture featured prominently with Quandamooka dancers revealing culture and delivering education activities.

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Number	Project	Report
36	Community Rangers delivering works for Naree Budjong Djara National Park	The Community Ranger Program being delivered by QYAC provides an employment and training pathway for Quandamooka people and a cost effective on-island culturally appropriate workforce for joint management activities. The Community Rangers are undertaking a range of activities to support operations in Naree Budjong Djara National Park including fire and cultural landscape management, weed control, and the restoration of degraded landscapes.
37	Landscaping support for Minjerribah Camping	QYAC works with Minjerribah Camping to supply suitable materials for landscaping and addressing land management issues as they arise.
38	Adder Rock Beach Access Maintenance	QYAC worked with RCC to undertake repair works at the Adder Rock beach access following erosion and storm events.
39	Koala Action Plan Partnership	RCC is implementing their Koala Action Plan across Redland City and QYAC is supporting the delivery of research and surveys to better understand Minjerribah's unique koala population.
40	Fire Commissioner and Emergency Services Minister visit to Minjerribah	Quandamooka welcomed the Emergency Services Minister and Fire Commissioner to the Island and showcased culture and projects that QYAC has been undertaking to improve disaster resilience on Minjerribah.
41	EcoMarines Care for Country Events	The EcoMarines team engage younger generations in activities that promote and educate the values of Quandamooka. Quandamooka Rangers have been involved in providing education activities at the events to improve education and understanding of Quandamooka Country.
42	Girls Got Grit Filming on Minjerribah	A 4-wheel drive (4-WD) show with a difference Girls Got Grit aims to empower women to discover the outdoors through 4-WD adventures. Quandamooka female rangers provided support and cultural education to ensure filming activities were conducted appropriately on Minjerribah.
43	National Environmental Science Program Involvement	QYAC was involved in working with research intuitions and organisations associated with the delivery of the NESP to review achievements and work on improvements to collaborative Indigenous research.
44	Welcome to country.	QYAC delivered a wide range of Welcome to Country activities throughout the year.
45	Moreton Island Wildfire Support	In 2018 a wildfire broke out on Moreton Island and the QALSMA team were called on by QPWS to provide operational support to aid in bringing the fire under control.

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Number	Project	Report
46	Deanbilla Bay Barracks Demolition	QYAC is working with the DNRME and Queensland Public Housing and Works to undertake the removal of asbestos and demolition of the Deanbilla Bay Barracks in preparation for the Cultural Heritage Centre.
47	Tidelands Filming for Netflix on Minjerribah	In an Australian first, QYAC supported the team putting together the new TV series called Tidelands which has had a number of scenes filmed on Minjerribah. QYAC services included ranger services while filming on beaches and cultural heritage advice and expertise.
48	Feral animal control on DNRME managed areas	QYAC supported DNRME to undertake feral animal control activities on their reserves with a particular focus on fox and feral cat control. This project is continuing.
49	2018 fire season burn preparation works	In preparation for the fire season, QYAC undertook preparation works on a number of reserves including the protection of culturally significant trees and landscapes and improving the condition of fire trails.
50	Beche-de-mer environmental assessment	QYAC is working to assess the condition of sea cucumber populations in Moreton Bay to help inform future management strategies for Quandamooka Sea Country.
51	Removing Bitou Bush from Minjerribah	In partnership with Land Management Agencies and Biosecurity Queensland QALSMA rangers worked to survey Minjerribah east coast beaches to identify potential locations for bitou bush and undertake control activities. This project is continuing.
52	Native Title Planning Assessments on Moreton Island	QALSMA rangers in partnership with the DNRME undertook assessments on Moreton Island to identify weed management and land management issues.
53	ANZAC – Commemorating Indigenous fallen heroes	QYAC participated in ANZAC day celebrations on Coochiemudlo Island and other locations with a particular emphasis on commemorating Indigenous Fallen Heroes.
54	Fisheries Joint Patrols	QALSMA is working with Fisheries Queensland to improve opportunities for Quandamooka People to be involved in the management of the Quandamooka Fishery. This has included inductions for QALSMA rangers so that they can participate in patrols and crew vessels.
55	Monitoring and Education of Quandamooka Sea Country	QALSMA is increasingly playing a lead role in the monitoring of values associated with Quandamooka Sea Country. This has included monitoring of coral reefs, shorebird populations, beach patrols, and participation in forums educating the community about dolphins, whales, dugongs and turtles. This project is continuing.

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Number	Project	Report
56	Hosting the South East Queensland Pest Advisory Forum	QYAC hosted State and Local Government biosecurity officers from across South East Queensland as part of the South East Queensland Pest Advisory Forum. Officers were introduced to Quandamooka Country and the broad range of biosecurity management activities being undertaken on Minjerribah.
57	World Heritage Listing	QYAC proposed and secured a State Government commitment to progress a World Heritage Listing for Quandamooka Country.
58	Dolphin Compliance and Education Program	In partnership with QPWS, QYAC has initiated and has led improved compliance on illegal dolphin feeding and education.
59	Minjerribah Fish Population Assessment	QYAC has collaborated with RCC and QPWS to deliver an island-wide survey of native and invasive fish within wetland communities of Minjerribah. This is the first time an island wide survey has been undertaken and is informing how wetlands are managed on the island.
60	Capembah Creek Repair Works	QYAC works with land managers to halt significant erosion, protect cultural values, and prevent ecosystem collapse on the RCC managed reserve at Capembah Creek. Includes installing a boardwalk to remove compaction of tree roots and vegetation, working with TMR to remove over 60 t of road-base material that was contaminating the creek, and progressing repairs to the culvert under East Coast Road
61	Blue Star Removal for TMR	Through QALSMA, rangers have been working hard to control an infestation of the invasive weed “Blue Star” and have been working with Transport and Main Roads to reduce the risk of spread and contamination to other areas of the island.
62	Supporting the uptake of Environmentally Friendly Moorings	QYAC has worked closely with HLW for a number of years in the delivery of the Environmentally Friendly Mooring Program for Moreton Bay to allow the recovery of seagrass communities across Quandamooka Sea Country.
63	National Park Expansion on Minjerribah	QYAC has negotiated and progressed a State Government commitment to expand the National Park Estate on Minjerribah from approximately 2% of the Island to 50% of the Island with planned further expansions resulting in up to 80% of the Island being recognised as protected area in one of the largest national park expansion initiatives in Queensland.
64	Minjerribah turtle nest monitoring and protection	QYAC works with the QPWS, Minjerribah Camping, and community volunteers to record, monitor, and protect turtle nesting sites across the Island.

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Number	Project	Report
65	2018 Minjerribah Wildfire Response	QYAC played a lead role alongside Queensland Fire and Emergency Services in the response to the 2018 fire event on Minjerribah, with Quandamooka Rangers leading the front line, inducting interstate staff, and playing a pivotal role in the incident control centre. Quandamooka Rangers were instrumental in guiding water bombing operations to maximise protection of country and irreplaceable cultural sites in a way not previously seen before in Queensland
66	Upskilling of Rangers in Fire Response and Management	QYAC has contributed to a significant increase in the numbers of on-island fire response staff with large numbers of qualified personnel now available from across QYAC, Minjerribah Camping, QPWS.
67	Expansion of Island Fire Response Units	Through QALSMA operations QYAC has greatly increased the number of Island-based fire response units (firefighting-equipped vehicles that include fire pumps and hoses) and machinery available to respond to emergency and wildfire incidences. This includes heavy machinery used to support trail upgrades and cut fire breaks.
68	Return of Bummiera to Quandamooka Custodianship	QYAC successfully negotiated with the RCC for the return of Bummiera (Brown Lake) to the custodianship of the Quandamooka People; an area previously managed by RCC as a recreation reserve. QYAC has worked to support Bummiera becoming part of the protected areas on Minjerribah under the joint management of the QALSMA and QPWS with management planning underway for improved visitor facilities that protect the sites cultural and environmental significance.
69	Land Transfer to support Bummiera Catchment Protection	QYAC has successfully negotiated with Seqwater to better protect Bummiera by having Seqwater relinquish their surrounding water reserve containing much of the Bummiera (Brown Lake) catchment. This culturally and environmentally significant landscape is now being managed by the Quandamooka People through the QALSMA in partnership with QPWS.
70	Amity Shoreline Erosion Management Planning	QYAC has worked closely with landholders and agencies involved in the development of the RCC-initiated Shoreline Erosion Management Plan for Amity, ensuring delivery in a way that is sensitive to country and the Native Title rights and interests of the Quandamooka People.

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Number	Project	Report
71	Asbestos Training and Removal Works	QYAC have had a number of Quandamooka rangers trained in asbestos removal. These rangers have worked carefully to remove asbestos contamination from two reserves with long term contamination from illegal dumping. These reserves which are now being managed by QYAC are now much safer spaces within the Amity community as a result of the rangers hard work.
72	Deanbilla Bay Barracks Acquisition	QYAC successfully obtained the Deanbilla Bay Barracks following their relinquishment by the Royal Queensland Yacht Squadron so that the site can be utilised as a space to protect and showcase Quandamooka Culture and Country
73	2018 Wild Dog Response	QYAC initiated and successfully led the response to dog attacks on wildlife during early 2018, which included the establishment of an ongoing response plan involving all island land management agencies to aid in preventing future attacks on wildlife and people.
74	MangroveWatch	QYAC has been working with scientists from James Cook University to undertake the most comprehensive recording of mangroves on Minjerribah’s coastlines and neighbouring islands through the MangroveWatch Program. This has involved Quandamooka rangers using the latest scientific monitoring techniques to determine mangrove health using video assessment technology.
75	Reef Check Australia	QYAC has established new sites on Quandamooka Country to monitor and record reef health in partnership with Reef Check Australia. This has included the skilling of Quandamooka Rangers with the latest techniques to identify coral species and undertake reef health checks.
76	Seagrass-Watch	QYAC has been heavily involved in the long term monitoring of seagrass communities across Quandamooka Sea Country. Quandamooka rangers work with experts involved in the Seagrass-Watch program to record seagrass health and densities.
77	Minjerribah Camping Sustainability	QYAC, through Minjerribah Camping, is improving the management of campgrounds to reduce numbers and impacts at peak periods. This management has been effectively in spreading the occupancy more evenly during holiday periods and enabled better management of culturally and environmentally sensitive areas. Minjerribah camping is continuing a continuous improvement program across Minjerribah’s campgrounds to reduce overcrowding and impacts upon the cultural and environmental values that underpin the business.

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78	Beach Camping Compliance	<p>QYAC has worked with Minjerribah Camping to increase numbers and presence of rangers on the ground to ensure campers and visitors to Minjerribah have a great experience that respects Minjerribah’s values. This includes work and compliance activities aimed at reducing driving on dunes, reducing rubbish left at campsites, and preventing unnecessary damage to vegetation.</p>
79	Peel Island Compliance	<p>Through joint management arrangements involving the QALSMA and QPWS, QYAC has increased patrols on Peel Island with Quandamooka Rangers ensuring that campers have a greater respect for this special part of Quandamooka Country.</p>
80	Whale Strike Awareness Raising	<p>QYAC, as had the Quandamooka Land Council before it, leads advocacy to all levels of government threat-reduction to whales and marine life from vessel strike. Includes responding and caring for animals impacted and supporting changes to vessel propulsion for Bay ferries.</p>
81	Ancient Tree Protection and Cultural Values Recording	<p>QYAC has been recording and undertaking rehabilitation of ancient Cypress Pine cultural complexes, which hold unique cultural heritage values across many parts of Minjerribah. This has included researching the ancient trees on the island to understand their ages and is working with the Queensland Herbarium and researchers to ensure their protection.</p>
82	Quandamooka Country Collaborative Research Initiatives	<p>QYAC is participating in and contributing to extensive and world leading research on Quandamooka Country including but not limited to: determining the age of wetlands on Minjerribah; the significance of the ecological structure of Kaboora; recording the distribution and health of <i>Phaius</i> orchids; recording the nest locations and reducing impacts to <i>Xeromys myoides</i> (water mouse) populations; and, researching the long term rainfall on Minjerribah through analysis of leaf samples from sediments at Swallow Lagoon.</p>
83	Littoral Rainforest Mapping and Conservation	<p>QYAC is mapping and improving the recording and protection of critically endangered littoral rainforest communities on Minjerribah in consultation with the DES.</p>
84	Risk Management to Protect Minjerribah’s Koala Population	<p>QYAC is working with DES to ensure the movement of koalas from Minjerribah appropriately considers disease risks and ensures the long term protection of the special Minjerribah population</p>

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85	Species recording on Minjerribah	Through QALSMA, QYAC is regularly identifying and recording new species on Minjerribah and ensuring that these values are protected and the information captured is stored and treated sensitively.
86	Return of land at Mooloomba for cultural and environmental awareness raising	QYAC successfully negotiated with the DNRM and RCC to have land at Point Lookout headland returned to the control of the Quandamooka People so that a derelict site containing waste material and weeds could be turned into a site that promotes and highlights the cultural and environmental values of Mooloomba.
87	Steam weeding to replace chemical control	QYAC has been skilling ranger teams and obtaining equipment to replace chemical weed control techniques with environmentally friendly steam weeding where possible. Includes work on Minjerribah and Coochiemudlo Is where steam weeding has replaced chemical control.
88	Shellfish Research	In partnership with James Cook University, HLW and The Nature Conservancy QALSMA has been investigating shellfish communities and understanding their health and possibilities for Traditional Owner-led restoration.
89	FRDC Marine Resources and Traditional Owner considerations	QYAC participates in the FRDC Indigenous Forum, which aims to understand the traditional take of marine resources of Indigenous people on a local & national scale. This information is being linked to the national index of marine resource take alongside commercial and recreational activities to support a holistic understanding of fisheries resources and their sustainability. This work is ongoing.
