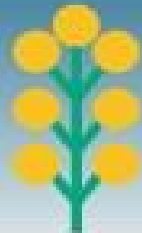


MAGNETIC ISLAND COMMUNITY DEVELOPMENT ASSOCIATION

Whole of Island Report Yunbenun Magnetic Island



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What We Envision

To achieve the vision of Magnetic Island becoming the Leading Sustainable Island Community, Community Volunteer Working Groups are the focal point for community based solutions. Our "Whole of Island" approach will hopefully enable us to speak with one voice as a community to other key stakeholders, and to work with them towards a more resilient future for Magnetic Island's community and environment. Our World Heritage Island is best protected by way for us and the next generations by a united community approach that includes our natural land and sea, cultural and social values.

We acknowledge the Wulgurukaba people as the traditional custodians of Yunbenun (Magnetic Island) and value our collaboration with them.

For further information, please contact us at <https://www.micda.com.au/contact>



Summary

Yunbenun Magnetic Island is an island of 2400 residents and about 290,000 visitors annually, located in the dry tropics of north Queensland. The island is part of the Great Barrier Reef World Heritage Area. The community of Yunbenun is particularly active in improving island life and progressing to a more sustainable future while maintaining its natural values.

Climate change and plastic waste are the greatest threats to Yunbenun/Magnetic Island, both threats created by unsustainable use of resources such as fossil fuel. Unsustainable uses of Yunbenun/Magnetic Island's resources and habitat destruction has negatively impacted terrestrial and marine ecology of the island. left unchecked, this over-consumption may destroy the foundation of the tourist economy and world heritage values underpinning it.

To address this, \$50,00 funding was provided in August 2022 by the Department of Environment & Science (DES) to create a Whole of Island Future Sustainable Plan. This plan is called 'Our World Heritage Island Yunbenun/Magnetic Island plan (OWHI plan). Magnetic Island Community Development Association (MICDA) employed one person in a 15 hour a week capacity to establish, support, develop and report on plans of ten working groups around the future sustainable development of Yunbenun/Magnetic Island.

The working groups are focused on the key elements of Island life, waste, transport, energy, water, ecosystem monitoring, tourism, sustainable planning, marine action, health and the Wulgurukaba traditional owners. While these groups have goals focused on their specific aims, they often have values and goals that overlap with each other. This report details the background context of OWHI plan followed by a summary of each group's values, aims and projects.

As an island, this community is an ideal playground for testing new ways of working to close the flows of goods, energy, water, food, and capital. Creating and implementing circular economies on Yunbenun/Magnetic Island has benefits, which includes the potential to scale to mainland communities. Any developments to be tailored to the island, in collaboration between community members, policymakers, NGOs, government and businesses holistically to be effective. Yunbenun/Magnetic Island transition to a sustainable model for residents and visitors to live and thrive on, needs to be supported by all levels of government.

It has been identified that a whole of island approach recognises, protects and enhances Yunbenun's World Heritage Values. Such an approach draws volunteers and community groups passionate about their field, to create actions around transport, energy, health, waste, water, planning, marine, terrestrial and health, drawing them into a framework together with stakeholders and the Wulgurukaba traditional custodians.

Acknowledgements

The Magnetic Island Community Development Association (MICDA) acknowledges and is grateful for support from the Queensland Department of Environment and Science. The grant, under the Community Sustainability Action Grants Program, for a community-led project that delivers climate actions in Queensland. MICDA is a not-for-profit association which has operated under changing names on Magnetic Island for over 50 years. We thank the members of MICDA management team, especially Les Sampson the President and acknowledge the thousands of volunteer hours given to not only this project, but other ground breaking projects & events on Yunbenun which go to protecting our beautiful island over the last decades.

We thank all the volunteer members of the Working Groups for their contribution to this plan, support and hard work in striving to protect Yunbenun and make it a better place for future generations. We thank Townsville Council, especially Greg Bruce (Sustainability Manager), Hayley Page & Amelia Chapman (Resource Recovery), Travis Richards (General Manager Water & Resource Recovery) Tom Askern (Planning and Development); Magnetic Island Residents & Ratepayers Association (MIRRA) and U3A for hosting presentations at their meetings; Magnetic Island Nature Care Association (MINCA) and Arcadia Coast Care, Magnetic Island Network for Turtles (MINT) ; Tourism Magnetic Island (TMI) Troy, Lyle and Brian Johnson-Wulgurukaba Traditional Custodians of Yunbenun for their input and support. For community venues, thanks to Arcadia RSL and Amaroo at Mandalay.



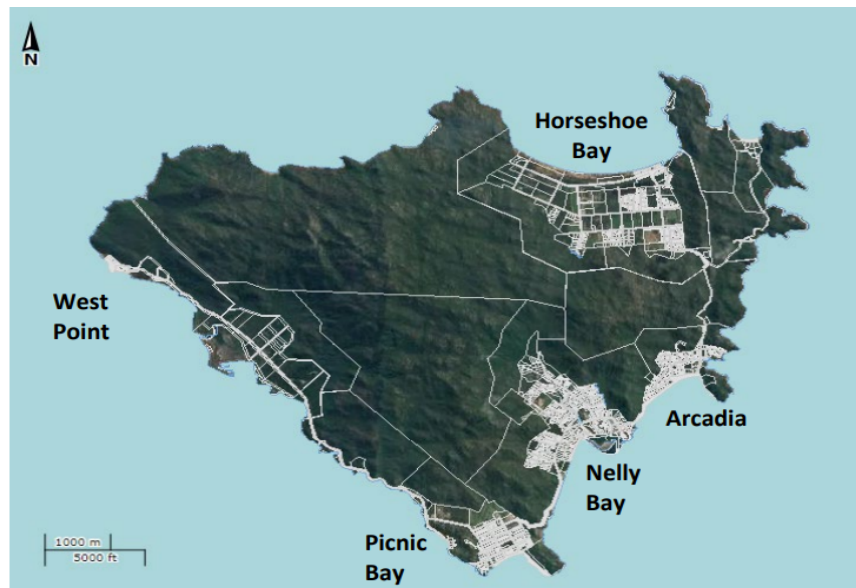
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Introduction

★ Background

Yunbenun Magnetic Island (YMI) is one of the few urbanized islands within the Great Barrier Reef Heritage area. The population and most tourism activity is located in four small villages at Horseshoe Bay, Arcadia, Nelly Bay and Picnic Bay. The Traditional Owners are the Wulgurukaba, who have an important and ongoing connection to the island's land and sea country.



The aim of the Our World Heritage Island Yunbenun/Magnetic Island plan (OWHI plan) is to ensure that YMI is sustainable, meaning it caters for the needs of the current generations without compromising the needs of future generations. To do this the needs of our environmental, cultural, social, and economic values must be balanced. Many groups focused on issues around climate change and human impacts, investigating how to reduce impacts and protect the Islands through a community lens. These community working groups focus on community based solutions to address greenhouse gas (GHG) emissions through decarbonisation projects which improve climate resilience.

YMI is more vulnerable to climate change, extreme weather events, freshwater and land scarcity, and rising sea levels than mainland communities.

The key climate and ocean drivers of climate change that impacts YMI includes variations in air and ocean temperatures; ocean chemistry; rainfall; wind strength and direction; sea levels and wave climate; and extremes like tropical cyclones, drought, and storm swell events. These impacts are exacerbated by the fact it can be a challenge to provide YMI with post-disaster assistance due to its isolation from mainland services.

The OWHI plan reflects the physical reality that YMI is an island which brings both positive attributes and challenges. YMI's land and seascapes are located within the Great Barrier Reef Marine Park and accordingly have unique and special values. YMI provides nesting areas for turtles and seabirds, and homes to endangered or threatened species such as dugongs and whales. The health of the marine environments is linked to what happens on the land, so YMI is part of and integral to the Great Barrier Reef ecosystem. YMI has 29 different ecosystems, with endangered or rare plants and animals, some unique to the Island. These are valid reasons for YMI being treated differently to mainland communities in the Townsville region.

Tourism

The island is known as the Jewel of the Crown of the region due to its world heritage values, unique qualities and value to the region in terms of jobs with 25% of tourist jobs in Townsville derive from YMI.

This is an island community which has a tourist numbers of about 290,000 pa , vastly exceeding its residential population, and is set to increase by around 100,000 in the next decade. The island brings in \$300 million p.a to the regional economy, providing an imperative for economic support from all levels of Government.

Based on figures in the 2023 Tourism Master Plan:-

- Visitor numbers of 290,000 (as of 2019) increase the island's resident population of about 2,400 by about an average of 5,576, totalling around 7,976 people on YMI on average.
- Visitor numbers are not distributed evenly, but fluctuate over peak tourism periods.
- Projections are for an increase in visitor numbers by 98,259 over the 10 years from 2022 (from 299,796 visitors to 398,055) around 25 %
- The expected increase is around 107,560, adding about 7,654 visitors on an average to the resident population (assuming NO increase in the 2400 resident population)
- This could result in about 10,054 people on YMI on any given day.

Urbanisation

YMI is unusual in being the World Heritage Area's most urbanised island. In total 78% of the Island is protected via conservation zones and/or National Park, the remaining being urbanised. The island's residential & visitor population is confined to discrete coastal zones, the majority located within 100 meters or so of waterways and beaches, all of which flow out to the Great Barrier Reef. This poses threats to the Great Barrier Reef and Magnetic Island's world heritage values, land, sea and culture. [Threats to our terrestrial environments and our World Heritage values](#)

Waste generated on and transported off MI creates significant plastic debris which finds its way into our landscapes and waterways. Degrading plastic in our oceans not only pollutes the ocean, damaging every aspect of its ecosystems, but releases GHG emissions into our atmosphere.

Most of the plastic in our oceans comes from land-based sources: by weight, 70% to 80% is plastic that is transported from land to the sea via rivers or coastlines. The other 20% to 30% comes from marine sources such as fishing nets, lines, ropes, and abandoned vessels. [Where does our plastic come from](#)

There would be very few buildings on MI which would be more than 100 metres from a water way, a coast line, or a drain. All our urban stormwater drains discharge directly into our waterways and /or into the oceans surrounding YMI, a part of the Great Barrier Reef World Heritage Area. There is a need to reduce plastic being created in the first instance; kept out of our landscapes and waterways; reused or recycled where possible; and diverted from landfill.

Wulgurukaba traditional custodians

Wulgurukaba

The island's traditional custodians, the Wulgurukba people, have native title claims or rights granted on the island and play an active role in protecting the island. They regularly provide their traditional knowledge to projects, which is integral to land and sea restoration. The involvement of the Yunebun Land and Sea rangers is essential in contributing action and knowledge to the wellbeing of our island.



Engaged Community

"Magnetic Island has a vibrant, inclusive, united and engaged community which celebrates its unique Island and village character, its lifestyle, environment and diversity, and provides its residents with adequate income, employment and lifestyle opportunities"- Peter Kenyon, Bank of IDEAS 2012.

Community groups on the island such as: Magnetic Island Community Development Association (MICDA), Magnetic Island Nature Care Association (MINCA), Magnetic Island Network for Turtles (MINT), the Wallaby Refuge & Koala Hospital, and Arcadia Coast Care have decades of major successes in rehabilitation of degraded landscapes, protection of island ecosystems, wildlife protection, and community sustainability. There are collaborative relationships with other community associations, like Magnetic Island Residents & Ratepayers Association (MIRRA), not for profits like the Magnetic Island SES, Fire Brigade, MI Care, the MI Health Clinic, Tourism Magnetic Island (TMI), and all levels of government.

The island's natural and cultural diversity is valued by the community and visitors. The community has a long standing interest in protecting its uniqueness with broad support for actions that protect and enhance our island's extraordinary natural and cultural values and which provides socioeconomic benefits for the community.

The island's Traditional Owners have strong relationships with MICDA, MINCA and Arcadia Coast Care and are involved in two-way knowledge sharing with other groups like Queensland Parks & Wildlife Service.

Our World Heritage Island Plan: Yunbenun Magnetic Island is built on over two decades of documented community consultation and reports.

Ref: 2 See Appendix for more information.

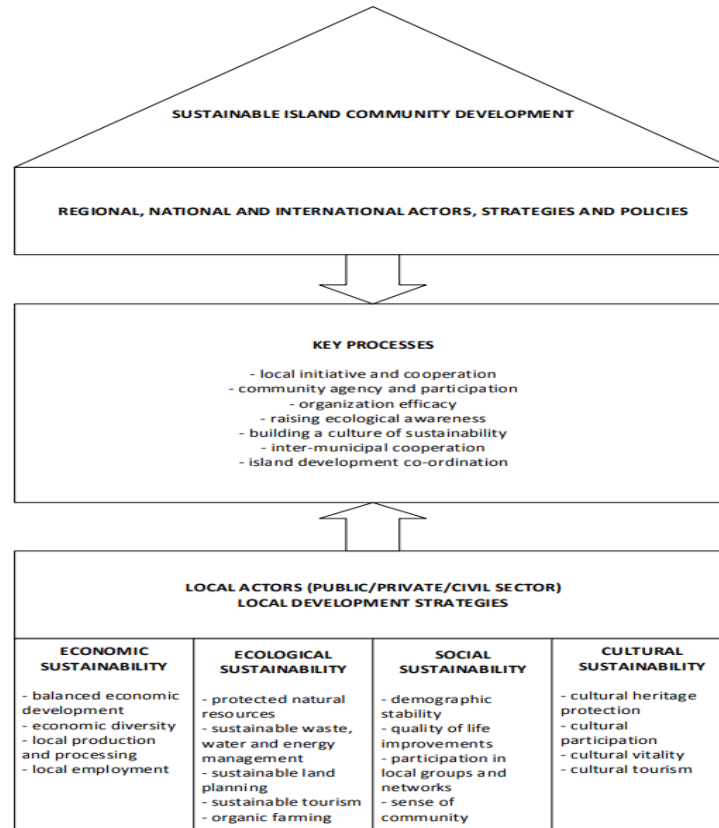
From these reports we have determined that carbon reduction is integral to these common themes as without these actions, the aim of a truly sustainable Magnetic Island simply isn't possible, as MI's natural values rely on a lower carbon future. Each aspect of the working groups' visions and projects aim to make MI a Reef island community leading in sustainability which has a direct or indirect correlation with the island's world heritage values.

Our World Heritage Island Plan: Method

The model used in this plan adopts the model shown in Figure One (below). It uses scaffolding by 'Top-down' processes fleshed out and adapted by 'Bottom-up' community knowledge. The top-down players being all levels of Government or semi government authorities required for leadership, funding, implementation, policy and support. The bottom-up players are community members, including local businesses, stakeholders & agencies. We used members of 10 working groups to develop ideas, policies, solutions required for the implementation of initiatives, projects, communications. The outcome of using this framework was a collaborative and meaningful engagement.

Implementation of sustainable development policies should be based on local initiative, with community agency and participation at the local level. They contribute and meet in Council, State and Federal level organisations in the middle..We suggest that effective integration of top- down and bottom-up processes can create sustainable development strategies used here as the ideal mechanism for planning for YMI's future.

Our working groups are non-exclusive and are open to any MI resident to be part of. We found that these Working groups often have members of other island associations in them including office bearers.



Ref 3: Framework from The case study of Postira

'The Whole of Island' strategy

We have structured all the community groups to fulfill an idea called 'Whole of Island'. The concept aims to enable us to speak with one voice as a community to other key stakeholders, and to work with them towards a more resilient community. The 'Whole of Island' strategy has been based on protecting the World Heritage values of the Island, increasing sustainable infrastructure and becoming an island model for other regions.

The community facilitator (Aniko Papp) and this report is integral to this cross-communication between groups. Without a community facilitator, the synergies between groups may not have been identified. Through the identification of overlap, the groups have created projects that work synergistically with one another.

The 'Whole of Island' strategy has four key values and each working group focuses on one of these values, but there is always overlap. Each working group for example, applies the overarching values of our World Heritage Values; and carries out community engagement.

Value 1: Decarbonisation and Climate Change Working Groups

1. TRM Totally Renewable Magnetic (Energy)
2. MITAG, Magnetic Island Transport Action Group (Transport)
3. ZWMI, Zero Waste Magnetic Island (Waste)
4. MIW, Magnetic Island Water Group (Water)

Value 2: Our World Heritage Island Working Groups

5. Our World Heritage Values project (MINCA)
6. MAMI (Marine Action Magnetic Island), Marine
7. Wulgurukaba (Traditional Owners)

Value 3: Sustainable Development Capacity Working Groups

9. Tourism (collaborative engagement with other stakeholders)
10. MIHWG, Magnetic Island Health Working Group (Health)
11. YSPG, Yunbenun Sustainable Planning Group (Planning)

Value 4: Community Engagement and Knowledge Working Groups

12. Ecosystems community engagement.

These working groups partner with key stakeholders with expertise, advice, ideas, inputs, and funding support, etc. They have processes for consulting with the wider island community and key stakeholders. Significant funders from both private enterprise and the public sector partners already support aspects of this plan and support the 'Whole of Island' concept. The groups work on one-off projects and initiatives in conjunction with other stakeholders including local organisations and associations, local, state and federal government, local businesses, research institutes, education and health bodies.



★ How do these working groups operate ?

Working Groups are comprised of MI community members including members of YMI community organisations joining and volunteering their passion and time to:

- Create actions to implement the group's purpose/aim, objectives
- Develop a roadmap for the implementation of initiatives, projects,
- Develop the knowledge bank of the working group .
- Engage, communicate, consult with the broader island community.
- Collaborate with other working groups thus maximising limited resources to support the creation and implementation of this OWHI plan.
- Partner with key stakeholders, providing working groups with expertise, advice, ideas, inputs, and funding support.
- Review the group's purpose/aims/objectives and actions from time to time to reflect changes in needs, aspirations, technology, populations, development & outside factors like government policy, environmental imperatives.

Working groups such as Planning, Water, Marine, had to be created from the start of this project. Existing working groups needed support to function and progress and had varying needs, like Transport, Zero Waste , Energy and Health.

Throughout the project, there was a focus by the working groups on community engagement. The working groups presented at island meetings such as MIRRA or U3A or hosted information or fun stalls community events, such as the Easter Fair or Neighbour Day which also sought to attract more island residents to take part in the Working Groups. Posters, messaging working group meetings, carbon reduction projects and presentations at MIRRA meetings, web- site information and social media, helped gather more volunteers to the working groups and also informed the wider community about this project.

 PechaKucha



Presentation January 2023 PechaKucha Night Townsville VOL. 30!
[PechaKucha Presentation: Yunbenun Magnetic Island: Our Sustainable Future](#)

During the project, there were groups and the coordinator involved in stakeholder engagement such as hosting stalls at events like the Dry Tropics Community event, the YMI markets, or attending stakeholder networking events, such as the Townsville Energy Forum, Delivering a Circular Economy - Smart Precinct NQ events, Tourism Magnetic Island meetings.



An example of social media and posters placed around YMI working groups

Our Traditional owner group which consists of 3 local Wulgurukaba people, have attended and contributed to workshops, events and meetings around this Project.



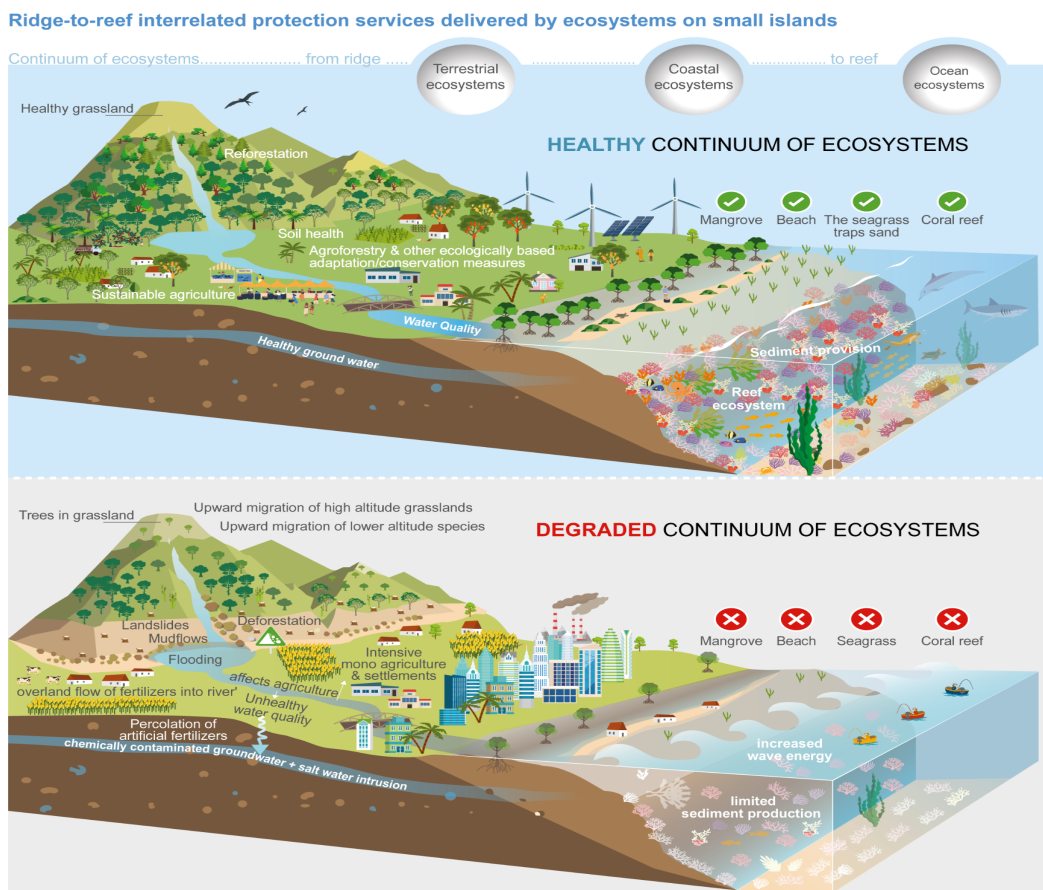
Photo: Wulgurukaba elder, Brian Johnson opening the Zero Waste art exhibition

★ Yunbenun Magnetic Island : Challenges and advantages

Being an island community brings with it both challenges and advantages which are unique to an island. It is essential that the physical fact of our community being on an island, is taken into account in all aspects of policy and planning for YMI.

★ Challenge: Management of resources

Management of waste, water, and energy is a challenge, driven by depletion of resources, unsustainable tourism, heavy reliance on ferried goods, and diseconomies of scale. Owing to the limited area and isolated nature of YMI, climate change impacts are magnified compared to the mainland. Growing demand, land use change & clearance, urbanisation, and tourism is placing a strain on the limited infrastructure & resources on YMI, on a background of decreasing rainfall and increasing temperature.



Ref 4: Image from IPCC 2022 Sixth assessment report on Climate change

★Challenge: Digital disconnect

YMI has a physical and digital disconnection from the mainland, lacking reliable and affordable internet connectivity which is essential for economic activities and services. YMI needs good reliable connectivity to collect data effectively, and sustainably manage our resources, which includes drones for environmental monitoring, IT networks for water and waste management, & smart energy grid technologies.

★Advantages: Abundance of renewable energy & high levels of biodiversity

YMI is located within the dry tropics of Queensland, with long sunlight hours: ideal for solar energy uptake. Its biodiversity is reflected in its world heritage values both on land & sea. Our fringing coral Reefs, mangroves and seagrasses play a significant role in supplying sediment to island shores and in dissipating wave energy, thus reducing the potential foreshore erosion; providing a habitat for marine species; providing food; and our marine & landscapes underpin land, animal, beach and reef-based tourism and economic activity.

WHAT DO WE HOPE TO DO?

1. Aims to increase Solar Generation on Magnetic Island
2. Then invest in storage
3. And seek funding to install microgrids to share the benefits
4. While encouraging electricity to be used more efficiently and manage demand



From the Totally Renewable Magnetic information tab.

<https://www.micda.com.au/energy>

The world heritage values of YMI provide an impetus and economic, environmental and legal rationale for financial, social and Government policies and investment to protect and enhance those values.

★Islands: ideal environments for circular economy and sustainable development policies and planning.

The concept of sustainable development has been defined as *“the development which meets the needs of present-day generations while ensuring the same needs can be met by future generations”*.

Based on the theory of sustainable community development, there are four pillars: ecological, economic, social and cultural, which are closely connected.

★ **Circular Economy**

“There is much literature focused on environmental, social, cultural, and economic sustainability challenges within the island context. The circular economy is not the answer to all these challenges, but it incorporates these elements into building the basis for a sustainable economy” and

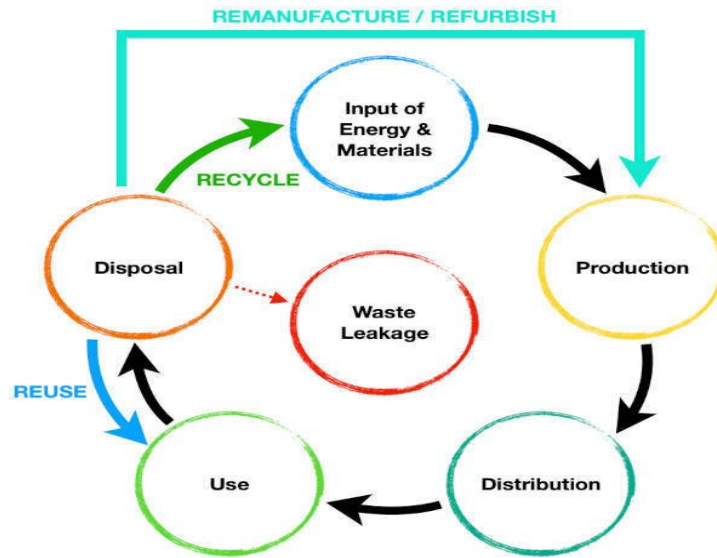
“Because of their bounded, isolated environments, and the discrete unit of available land, the speed at which the realities of complex environmental problems occurring within also complex natural systems can be rapidly seen and studied in island systems, such as sea level rise, natural resource overexploitation, food shortage, and pressure on energy resources (Singh et al. 2020). Because of the same characteristics, islands can also be potential sites for innovation toward sustainable living. The scale of islands makes these systems theoretically simpler for different political or economic sectors to collaborate in order to develop sustainability at a scale that is manageable (Kueffer and Kinney 2017).”

Ref 5: from Islands & Indigenous systems of circularity

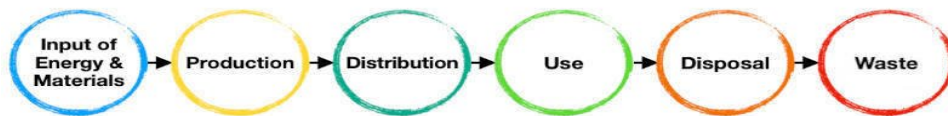
Island like YMI are well suited becoming sustainable applying sustainable development principles and develop circular economies, The reasons why include: -

- **Clear Boundaries:** Islands naturally have limited resources and distinct boundaries. YMI boundaries make it easier to measure and control inputs and outputs.
- **Resource Constraints:** Islands like YMI rely on imported goods and services which are expensive and have a larger carbon footprint. This reliance on transport from the mainland, can motivate local actions & innovative solutions to minimise waste and increase resource efficiency.
- **Ecosystem Sensitivity:** Islands like YMI have sensitive ecosystems which can be rapidly affected by unsustainable practices which may result in awareness of the need for eco-friendly practices.
- **Small and Adaptable Communities:** Like many islands, YMI has tight-knit communities which can adopt new practices, share knowledge, and offer feedback. This allows for rapid experimentation and iteration.

CIRCULAR ECONOMY



LINEAR ECONOMY



Ref 6 visual representation of Linear V Circular Economy

© 2023 Sustainability Success,

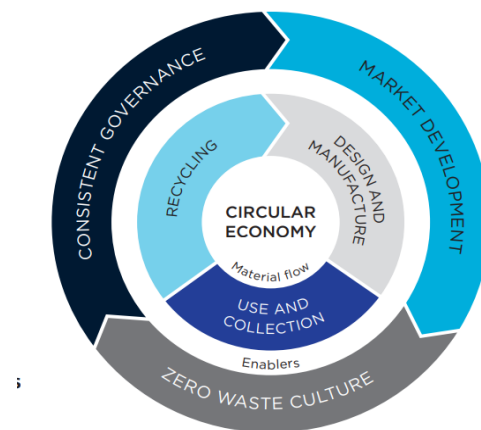
- High Visibility of Impact: The direct and immediate consequences of unsustainable actions, such as pollution or resource depletion like land clearing, urbanisation & overfishing, are visible in island settings like MI.
- Tourism Dependency: MI like many islands depends on tourism as a major economic driver with more tourists demanding sustainable practices. MI can leverage this demand to innovate and adopt sustainable and circular models.
- Demonstration and Learning Centers: Successful sustainable initiatives on MI can serve as case studies or demonstration sites, attracting attention and investment.
- Energy Transition Opportunities: The high cost and environmental impact in the transmission of fossil fuel powered electricity & transporting fossil fuels to islands, creates an incentive for islands to turn to renewable energy sources.
- Mitigation of Climate Change Effects: Islands are at the forefront of communities experiencing the effects of climate change. This immediate threat necessitates innovative solutions in energy, infrastructure, Waste & water management.

Reference 7: For more detail about Sustainable Development & Circular Economy principles see Appendix

★ **The working groups and their recommendations**

This report identifies issues and poses suggested solutions to challenges facing YMI in terms of its future sustainability. These principles of sustainability and circular economy have been used to develop these recommendations.

Waste & resource sustainability



Reference 8 CSIRO *Waste circular economy.*

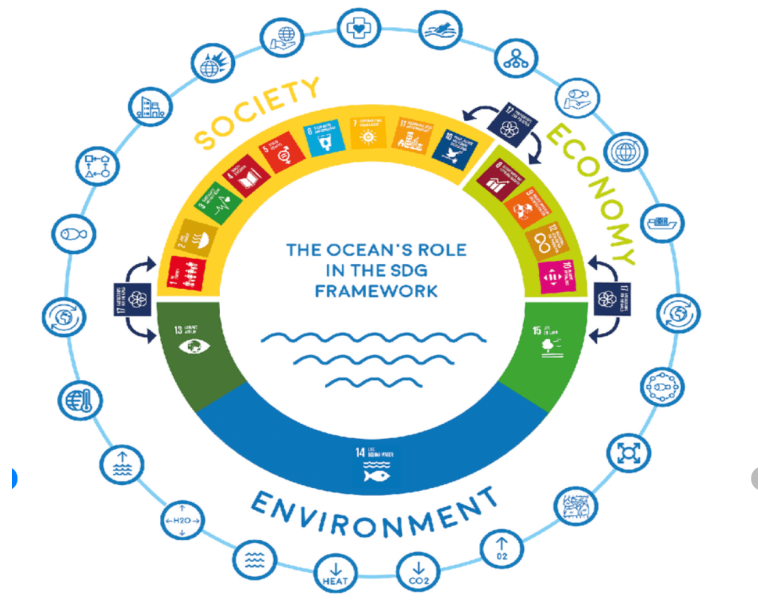
The CSIRO finds that the linear economic model has the pattern of take, make, and dump (waste), and does not have sustainability for our natural environment. From 1970 to now, the amount of materials used had tripled from 30 billion metric tonnes to 96 billion in 2019. These materials include metal ores, crude oils, biomass, and non-metallic materials. If this linear economic model continues, there will be more waste spaces than human liveable spaces.

It is important therefore to achieve sustainability in waste, water, energy, transport, Marine and Terrestrial ecosystems, to create circular economies. This in turn may go towards protecting and enhancing the island’s World Heritage Values.

Marine & Ocean sustainability

There seems a move for island for island to focus on circular economies, called Blue Economies, focusing on creating better stewardship of our ocean or ‘blue’ resources, with the primary goal of keeping global heating within 1.5°C.

The ocean plays a major role in the social, economic and cultural identities of MI and its world heritage values, therefore it is important to take action for its protection and regeneration. One example is rewilding the seabed or coral restoration, which has the benefit of carbon sequestration, as seagrass sequesters carbon 35 times faster than trees, while also reducing the effects of storm surges.



Ref 9: visual representation of the Ocean's role in the UN Sustainable Development Goal

Marine debris is a major threat to the health of the Great Barrier Reef. The Reef Authority recommends action to repurpose and reimagine products for sustainability, to reduce the use of plastics, increase reusable options, and recycle effectively to reduce all forms of marine debris entering the Marine Park. Marine debris comes from both land and sea-based sources. Marine debris can pose a navigation hazard, smother coral reefs, transport invasive species and negatively affect tourism.

Ref 10: From The Reef Authority in its Position Statement on marine debris.

CSIRO has found that within Australia, about ¾ of the rubbish along the coast is plastic. Most is from Australian sources with debris concentrated near urban centres.

The CSIRO predicts that plastic ingestion in seabirds may reach 95 % of all species by 2050. Seabirds, turtles, whales, dolphins, dugongs, fish, crabs and crocodiles and other species are killed and maimed through net entanglement.

Plastic debris is now the most abundant type of litter in the ocean, making up 80% of all marine debris found from surface waters to deep-sea sediments. Plastic has a negative impact on marine ecosystems, food and human health, tourism, and the climate. A focus for MI is to reduce marine plastic by creating circular economic practices.

Working Groups

1. Zero Waste Magnetic Island (ZWMI)



★ **The Working Group**

The community group Zero Waste Magnetic Island (ZWMI) has operated since 2018 taking meaningful actions to reduce waste on our island. ZWMI is a strong community group on the island and its large volunteer base is vital to its success. Zero Waste uses creative projects as fun and friendly initiatives like its local ghost net weaving collective, and using marine debris to create artwork.

★ **Zero Waste Magnetic Island aims**

Make YMI sustainable and become a zero waste community, by reducing landfill, saving energy and resources, lessening the impact of climate change and offering sustainable alternatives to our local residents and visitors to the island.

ZWMI has a vision of making our island carbon neutral as possible in terms of waste creation and disposal. ZWMI has good working relationships with stakeholders like Council, Boomerang Alliance/Plastic Free Townsville, MICDA Reef Assist, the Traditional custodians, Sealink, the local State school and Day Care centre.

ZWMI is passionate about engaging with the community and providing information specific to MI both online and in person to YMI residents, visitors and businesses. The ZWMI web site is here: [Zero Waste Magnetic Island](#)

★ **Waste & GHG emissions on Yubenen Magnetic Island**

Using figures in the 2020 Decarbonisation Report, MI Waste makes up GHG emissions as follows:

- 14% of total emissions on MI with a percentage being barge transport of waste. Transporting waste on fossil fuel trucks and barges off the island for processing on the mainland adds to carbon emissions.
- Carbon emissions for MI waste sent to landfill is 3%. Council manages all the waste on MI and all waste is shipped off the island via fossil fueled barges, for processing and disposal apart from a small amount of green waste. Organic waste in landfill adds to man made climate change.

Throughout their lifecycle, plastics have a significant carbon footprint and emit 3.4% of global greenhouse gas emissions. Beyond the hazards posed to the marine and terrestrial environment and humans, plastics are a substantial contributor to global GHG emissions. The Decarbonisation Report 2020 for MI identifies ZWMI as responsible for the management of any funded Zero Waste projects.

Ref 11: MI Decarbonisation report 2020

★ **Zero Waste aspirations : How will ZWMI achieve its aims ?**

The overall strategy for the Whole of Island Plan is for Sustainable Development and in the case of waste, is to have a Sustainable Waste strategy created along Circular Economy principles.

ZWMI has always applied the 7R's as part of its Zero Waste aspirations. The 7R's are essentially the backbone of a sustainable waste strategy and a circular waste economy. With such a strategy, YMI could become the FIRST community in Queensland and the FIRST island community in Oceania and Queensland to become a member of the International Zero Waste Alliance. [Zero Waste International Alliance](#)



From Zero Waste Magnetic Island website

YMI with its large residential population and a tourism based economy located on the Great Barrier Reef has the potential to become a leading example in the transition to a Zero Waste community. There are other communities both in Australia and overseas which are working towards this Zero Waste aim.

Ref 12: There are many other islands to inspire and learn from.

★ What are the future ZWMI projects and ideas ?

Feedback from the community, against a background of years of reports, community action and engagement by ZWMI, the Working Group has created actions and projects listed below.

Funding is needed for all these projects:-

★ Expand the current island organic recycling trials

The Decarbonisation Report 2020 for MI identified that 55% of the food waste on YMI goes to landfill, greatly contributing to the island's overall carbon footprint. Degradation of organic waste in landfill produces landfill gas containing 40 to 60% methane, which is 30 times more damaging than CO₂.

Since 2023 Reef Assist through MICDA and Council have conducted a Humisoil project and Bioliquid project on MI. Both projects use Xlr8 which is a liquid soil enhancer which stimulates the naturally occurring soil microorganisms to create healthier soils and better growing conditions for plants.

The current Humisoil project in Nelly Bay converts weed waste from our creeks and waterways to soil, used on Reef Assist revegetation and remediation projects on Council owned land. If expanded, the humisoil could be used by community members and community gardens.

The Liquid Soil Enhancer unit at Horseshoe Bay processes food waste from around 20 households and a few businesses into a liquid which is then used by community members in a current trial. In late 2023, distribution operations were set up by volunteers and captured information as to what effect this liquid is having on vegetation by community members in the trial.

In current trials, data is collected on inputs; conversion, processing and distribution processes so as to inform costings, carbon reduction outcomes, feasibility and actions. The aim of the data collection is to help assess whether it is viable to expand these trials. That data will provide also essential practical and tested processes in order to properly inform the proposed Zero Waste Strategy.

Subject to the Zero Waste feasibility study, additional units could be set up in one bay, then rolled out to more bays on MI and ultimately extended to all businesses and residences on the island. These processes not only provide nutrient rich compost and biofertilizer for use on island (like community garden food production, native plant nurseries, revegetation programs on the island), but results in GHG reduction. This type of technology is or could be in the future suitable for use by commercial businesses.

Locally produced humisoil and Liquid Soil Enhancer reduces the need for marine transportation of commercial fertilisers and soils onto MI in the first instance. It reduces fossil fuel-based transport of waste trucks to and from the island. There is local job creation through collection, production, conversion and distribution of organic material. Use of humisoil created on the island rather than artificial fertilisers, improves soil condition which reduces the risk of nutrient run off into the Great Barrier Reef. This type of recycling results in a MI circular waste economy.



Photo Humisoil pile Reef Assist Syntropic nest created at Horseshoe Bay. This process assists with erosion control, soil retention & nurturing native plants.

[Bio-Regen/Fertiliser | zerowastemi.org.au](https://zerowastemi.org.au)

★ Zero waste strategy for Yunbenun Magnetic Island

ZWMI has Townsville Council's in-principle support in working together on a Zero Waste strategy including a feasibility study for YMI's, together with stakeholders such as Boomerang Alliance. One of Australia's leading Waste experts, Anne Prince carried out a scoping study on YMI after a workshop and site visit in May 2023. The ZWMI workshop had 15 representatives from Tourism Magnetic Island, Reef Assist, MIRRA and stakeholders like Council, local transfer station staff, Plastic Free Townsville and the Traditional owners.

[APC presentation on Magnetic Island 5.5.23.pdf](#)

The workshop identified the need for zero waste to develop a public awareness and education campaign aimed at residents, businesses and stakeholders, to gain public support, create change and to adopt the actions needed to transition to a zero waste island. To facilitate creating those actions, a feasibility study aims to create a costed community constructed strategy, with the outcome, if implemented, to reduce waste into landfill going towards making a zero waste YMI.

This strategy may result in local job creation, better soils for YMI thus capturing carbon and decreasing run off into the Great Barrier Reef, creating a circular waste economy for YMI.



Stage 1: Feasibility study/Report

The feasibility study and report will take about one year. It starts by mapping the waste stream, collecting data about the current processes on MI and examining other island's ZW strategies around Australia and world wide. It will assess and model environment, social and economic values and create community driven and supported solutions to enable adaptive stakeholder actions. The feasibility report and strategy itself cannot be created by Zero Waste without the expert Anne Prince APC providing guidance. REF:

[APC MI Waste Strategy Proposal.pdf](#)

During stage 1, Reef Assist aims with funding to expand the current trials to a set number of businesses and residents. This shall produce data for the feasibility as to the viability of expanding the food waste & green waste trials, to the whole MI whole community with an aim for a circular economy outcome.

A feasibility study could examine a glass recycling facility on the island. Currently waste glass is collected on the island to the Transfer station before transport off island on fossil fuel barges. About 30% of commingled waste is glass material. Glass crushers have been used on remote islands and can be used to create sand and aggregate material, for road base, concrete, gardens and community spaces, thus reducing reliance on imported material. Crushed glass is more dense and could be transported off island using less marine and vehicle movements, all of which reduce carbon emissions. This is supported by the 2020 Decarbonisation report recommendation 15, as saving potentially 30,000 annual tCO₂-e.

Stage 2 (carried out during Stage 1 and for 2 years afterwards)

- Creating a ZW strategy requires engagement and buy-in by every resident and business on the island.
- Education and community engagement aimed at MI community members and visitors to change their behaviours and to want to change their behaviours around waste.
- Scoping social enterprise partnerships with private enterprise or community associations on business models.
- Community feedback and engagement at events like MI Junk Festival (if funded), Easter and Christmas Fairs, Markets stalls, information sessions at meetings or forums, art exhibitions showcasing art created from Marine debris and craft or weaving workshops.

★ Biz Assist Waste worker



Social media around battery recycling.

During the Zero Waste strategy, a dedicated and qualified worker/contractor called Biz Assist Zero Waste for two years, should be funded. That position shall provide one and one support to businesses to transition to zero waste. The Biz Assist workers will work one on one with businesses on specific projects such as the Biogen trials, Rig Recycle (recycling fishing lines and tackle) which will produce data and connections to inform the ZW feasibility study.

★ Bins at Beaches & Portable Water Tanks

Having waste bins shaped into shapes like turtles or fish, and ensuring that those sculptures are made from recycled material, at each bay, is an innovative way to encourage people to pick up marine plastics by feeding the bin, marine plastic.



The hollow bin would fill up and become an art piece, inspiring others to add their part. When the bins are full, the contents could be sorted and recorded using AusMaps, prior to the plastic being repurposed or sent away for disposal.

During events and community action on the island (such as SES action, fire mitigation etc) people need to stay hydrated yet not rely on plastic bottled water. Large water coolers are needed to be taken to community events, emergencies and exercises and for emergency personnel and the public.

★ **Making Magnetic Island Events become Zero Waste events**



Zero Waste catering at a ZWMI event

Many events like MI markets, fairs, Apex camp events, school events, sporting competitions, Race Week, weddings and corporate functions, are held on its beaches, or coastal areas. MICDA itself holds events as do groups all over the island. Often one finds plastic such as balloons, streamers, plastic cups, sauce containers, drink containers, discarded and embedded in sand, after. Cleaning the area post event fails to capture all the debris which become microplastic.

ZWMI is drafting a policy for all MICDA groups that provide for Zero Waste outcome for any events held by our groups on MI. ZWMI would like to see such a policy applied to ANY event held on MI by having Council incorporate the unique ZW policy as part of the conditions of any Council permit for an event held on MI, including food trucks. The ZWMI policy will be included in a Guide. ZWMI will work with Plastic Free Townsville and Townsville Council to create and implement the policy.

★ **Washing station for Island events**

Yunbenun hosts events with people travelling from far and wide to experience our island with Sail week, Jazz festival, Magnetic island triathlon, Bay to Bay runs etc.

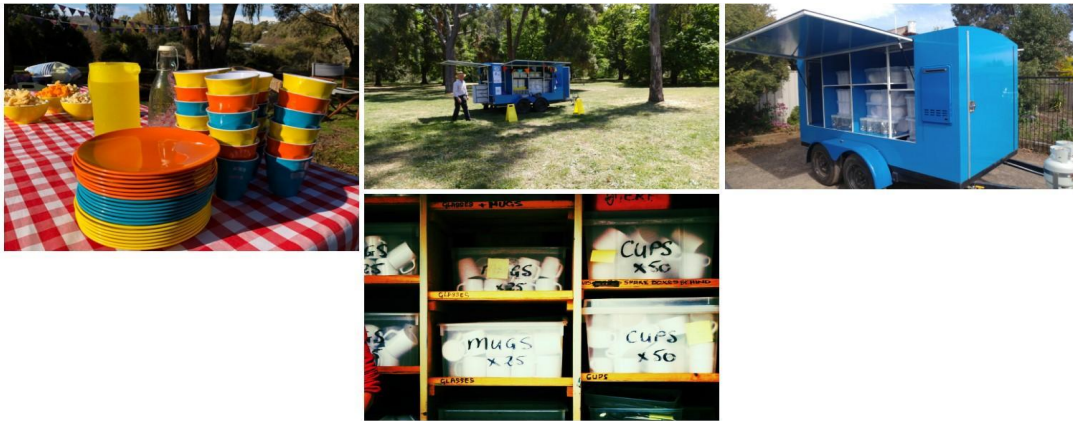


Image Macedon Shire Council waste community group.

<https://mrsg.org.au/wash-against-waste>

Zero Waste wants to work with event organisers to ensure that the impact on the island is limited and zero waste principles are followed in order to conduct No rubbish events. A trailer with cutlery, crockery and washing up facilities is needed which can be lent free of charge to island groups. Event organisers or food vendors, depending on not for profit status, pay for the use, helping affray maintenance & upkeep costs.

Whilst there is such a Council owned washing station on the mainland, the cost of around \$1500 for barge transport and pre bookings, make the cost prohibitive for most community events. Having a MI portable washing station is an easy way for event hosts to ensure that their event is a Zero Waste event.

★ Junk Festival

Taking the lead from the successful and long -standing Katherine Junk Festival, ZWMI is passionate about holding its very own Magnetic Junk Festival each year and making it a regular annual event. Junk Fest would be a family fun event, offering live music and dance performances, food and kids' play spaces, and a Junk Fashion Parade or an Art Competition, where participants and groups submit junk art works and wear fashion, made entirely from reused and recycled materials.



Terri Aldridge and Scott McDonald repurposed trash from the kitchen and the garden, debuting their designs in the fashion parade. (ABC News: Isabel Moussalli)

While the festival might only divert a small amount of rubbish from landfill, the take home message is about the immense, eternal footprint of waste. This event could also be part of a Yunbenun Land and Sea Festival, a day of music, creativity, local foods, demonstrations and educational activities to showcase the island's natural and cultural values. There is an opportunity for a Blak Arts market stall, weaving workshops and performances by the Wulgurukaba Dancers.

[Katherine's Junk Festival encourages community artists as council prepares to trial kerbside recycling - ABC News](#)

★ How does ZWMI engage our Magnetic Island community ?

Julie Woodlock is the current ZWMI coordinator supporting a very active collective of volunteers. ZWMI has conducted many forums & community information sessions, to educate visitors & residents with practical actions.

TRM has made information presentations & hosted stalls at island meetings such as MIRRA (Magnetic Island Residents and Ratepayers Associations), University of 3rd Age (U3A), or events like the Magnetic Island Easter Fair or at the local Magnetic Island State School. Presentation by Julie Woodlock, coordinator here: [Julie_ZW presentation.pdf](#)

Volunteers hold a regular information stall at the Horseshoe Bay Markets, which distributes reusable hand made mesh produce bags to replace plastic bags. ZWMI has a strong focus on creative activities in order to harness creative juices on the island and make ZW volunteer actions, a fun and social event. This has created a strong and active volunteer base. Art is seen by ZWMI as a demonstrated method of sharing the ZW messaging to islanders in a positive way. ZWMI holds Ghost Net Weaving Crafternoons where members create woven sculptures using ghost nets and discarded fishing lines and a Zero Waste threads groups which upcycled fabrics, clothing swaps.



Easter Fair art and craft stall for children.



Volunteer Jan at a Zero Waste stall

The MI community has already created a grassroots circular economy with a shop up at the Magnetic Island transfer station with unwanted household and building items; Freecycle and Bartering social media pages, and a strongly supported Vinnies to recycle clothing. The Magnetic Island community has demonstrated community support for Zero Waste actions.

ZWMI has an active social media presence on both Facebook and Instagram. ZWMI also has a quarterly newsletter which is emailed to MICDA and ZWMI members, full of latest news about the group's activities and events.

[Zero Waste Newsletter Nov 2023.pdf](#)

★ Past ZWMI projects and ideas

- Production of an educational video for preschool children. [Little Things Matter](#)
- Creation of Zero Waste Magnetic Island information [website](#) and [Facebook page](#).
- Establishment of a Containers For Change weekly Island collection.



ZWMI Craft and weaving groups



Magnetic Island Tip shop

- [Water On Tap](#) project, highlighting the fact that our tap water is safe to drink, with a user-friendly map showing locations around MI to fill up for free.
- Helping with MICDA securing funding and support via the Reef Assist Program and Townsville City Council for the establishment of a [Bio-ReGen](#) Unit on the Island for the processing of food waste and plant material.
- Geoffrey Bay tapestry created from ghost nets.



Geoffrey Bay : Tapestry at Nelly Bay ferry terminal.

★ **What does ZWMI need to achieve its aims ?**

- Funding is needed for the ZW strategy, then funding for implementation !
- Funding for a dedicated ZWMI Biz Assist worker
- Funding for Community Engagement
- Funding is needed for projects listed above.

★ **Summary on Zero Waste Magnetic Island**

Australia has ambitious targets to increase waste recovery and recycling rates.

By 2030, Australia is aiming for an 80% average resource recovery rate from all waste streams (see [National Waste Policy Action Plan - DCCEEW](#)).

To meet these targets, local processing and recycling capacity must increase substantially in Australia, creating opportunities for island communities like MI. As a reef island located on the world heritage listed Great Barrier Reef, a waste circular economy contributes to help maintain ocean and landscape biodiversity and sustainability. MI with its strong Zero Waste group, volunteer base and community support is ideally placed to become more sustainable, and transition into a Zero Waste island with a circular waste economy.

2. Magnetic Island Transport Action Group (MITAG)



★The Working Group

MITAG has been operating since 2022 with volunteers who are community members, including engineers, engine builders, transport operators, with an interest in transport and also who represent Magnetic Island Nature Care association (MINCA), Magnetic Island Residents and Ratepayers association (MIRRA) and MICDA. MITAG's plan is to have improved transport services for the Island over the next 10-15 years, taking into consideration community and key stakeholder expectations and emerging trends, such as electric vehicles.

MITAG has good working relationships with stakeholders like certain departments of Townsville Council such as the Sustainability area, Queensland Parks and Wildlife Service (QPWS), the Nelly Bay Ferry Terminal and other island groups. Unfortunately, Townsville Council's transport representatives, Kinetic, Translink and Sealink have not been as open to such collaboration.

[MICDA web page: Transport](#)

★MITAG's aspirations

The objective of the Magnetic Island Transport Action Group (MITAG) is to work towards Magnetic Island having reliable, resilient and sustainable transportation systems, both public and private, for residents and visitors. Key considerations in those Aims are decarbonisation, sustainability and systems that reflect the uniqueness of Magnetic Island and reflect its world heritage values.

★Transport and GHG emissions

Transport makes up 19% of Australia's emissions. Passenger cars and light commercial vehicles contribute 60% of transport emissions and over 10% of Australia's total emissions. Transport is projected to be Australia's largest source of emissions by 2030. Passenger cars and light commercial vehicles contribute 60% of transport emissions in Australia.

Ref 13 DCCEEW 2022

Further specific data on MI's GHG emissions associated with Transport are in the MI Decarbonization Report 2020 (Ref 11)

In order to reduce carbon emissions on MI, the focus is on transitioning ICE vehicles on MI to EV, increasing the use of public transport, and active transport like walking and cycling and transitioning marine transport to low emissions like hydrogen.

EVs use less energy and can also provide energy storage for houses and the electricity grid. Innovation in bio-directional charging allows EVs to both receive and discharge energy, and will enable more EV models to contribute electricity to power homes and the grid. EVs could play a key role in storing and later dispatching excess power generated from solar photovoltaic (PV) and other renewable energy systems, and potentially assist in electricity grid management. EV uptake may contribute to MI becoming powered by solar energy by 2030.

Feedback from the community, against a background of the Decarbonisation report, the MITAG bus survey in 2022, the WG has determined that the current actions and projects listed below are how MITAG intends to fulfill its aims.

★EV conversion project

The project aim is to convert an Internal Combustion Engine (ICE) ute, currently used by MICDA by the Reef Assist project on the island, into EV.

Projects using ICE vehicles are counter productive and send the wrong message to Islanders. There is a reluctance of some on MI to transition to EV's with skeptics on EV technology.
<https://www.abc.net.au/news/2023-02-16/regional-remote-queensland-electric-vehicles-ev-range-anxiety/101967134>

Islanders witnessing an EV work ute on the island, carrying heavy loads and powering battery tools, may change this mindset. The EV will be wrapped so its EV status is evident. The conversion process and use will be the subject of community engagement, with performance, carbon reduction, cost savings documented. That documentation will include videos, social media, events.

The project aims to demonstrate the practical and economic advantages of transitioning to EV and to encourage the uptake of EV vehicles on MI. This Project has the support of stakeholders like the Sustainability Department Townsville City Council and the Wulgurukaba Traditional Owners. MITAG is working with EV North, who has operated an EV conversion business for over 20 years [EV North](#)

This project may also encourage other stakeholders driving on the island like Council, Reef authorities, Landcare managers and workers, and QPWS into transitioning to EV. The Project may inform future carbon reduction Transport projects like EV charging stations & a shared EV car service for islanders.

★ **Comprehensive Walking Trails on Magnetic Island**

MITAG encourages walking on the island using its many walking trails, as a real transport alternative. Both the Queensland Parks and Wildlife Service (QPWS) and Townsville City Council (TCC) manage a number of established pathways and bush walking tracks on the island, which are not well linked and it can be hard to find the tracks and where they exit.

Missing links make the trail network hard to navigate, and can be unsafe, forcing walkers onto roadways. The TCC QPWS Magnetic Island Trails Vision plan is supported by MITAG who work with these stakeholders in a coordinated approach to develop a MI interconnected trail network.

Ref 14: Council and QPWS Trails Vision Plan



Map of the QPWS & Council proposed walking trail network for MI.

★ Alma Bay Walking Track missing link

MICDA/MINCA/Queensland Parks Service (QPWS) & Townsville Council have a joint project to connect the old Telstra track (located 800m from the Horseshoe Bay Bay main road Alma Bay) to Alma Bay. The old Telstra track goes to the Forts which is the number one tourist attraction on MI. In 2013, visitor numbers to the Forts Complex were in excess of 100,000 per annum. The start of the old Telstra track is around 100 meters from the bottom of the HB Road at Alma Bay

Walkers are often unaware of the existence of the Telstra track in the first instance. The reason for this is that the Telstra track is not shown on new mapping and signage, as it is unsafe to direct the public up the steep & narrow main road with no pedestrian verge between Alma Bay and the beginning of the old Telstra track. Road users, especially buses have reported near fatalities due to pedestrians walking on the main road from Alma Bay to the Forts.

There is a need for an engineering solution to provide this link. The Telstra track will be included on orientation maps and signs once the link is built. MINCA funded (through the generous donation by one of its volunteers) with QPWS and Council support, an engineering scoping study and plans for this new track but further costings/design work are needed in order to inform an application for capital work funding for the construction of the track. Funding for this is recommended.

★ Low Emission Marine Transport

Having low emission technology for marine transport between Townsville and MI, like electricity, hydrogen and biofuels is a recommendation in the 2020 Decarbonisation report for MI.

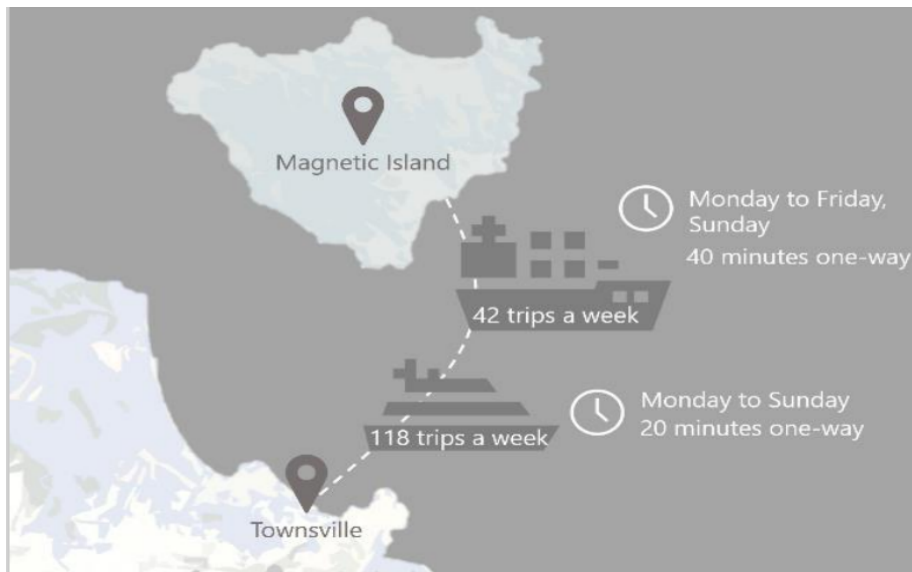


Image from 2020 Decarbonisation report

If Marine transport could use renewable and alternative energy sources, this would have a substantial impact on reducing carbon emissions on MI. Removing diesel fuel vehicles from the seas around MI also reduces the possibility of oil spills and impacts on the Great Barrier Reef. Townsville is in the process of becoming a green hydrogen hub. [Mission 2050: how Townsville is becoming a global renewable energy hub | State Development, Infrastructure, Local Government and Planning](#)

It is understood from Sealink that whilst hydrogen powered ferries will eventually come to service MI, there is no time frame for this. The proposed Sealink hydrogen ferry for Gladstone is not taking place. With green hydrogen production near Townsville resulting in storage (for export) at Townsville Ports located near the current Sealink ferry terminal, means that there may be a cogent case for a hydrogen powered ferry to service Magnetic Island as a priority. [Sealink to sink \\$20.6 million into 'world-first' green hydrogen ferry project - pv magazine Australia](#)

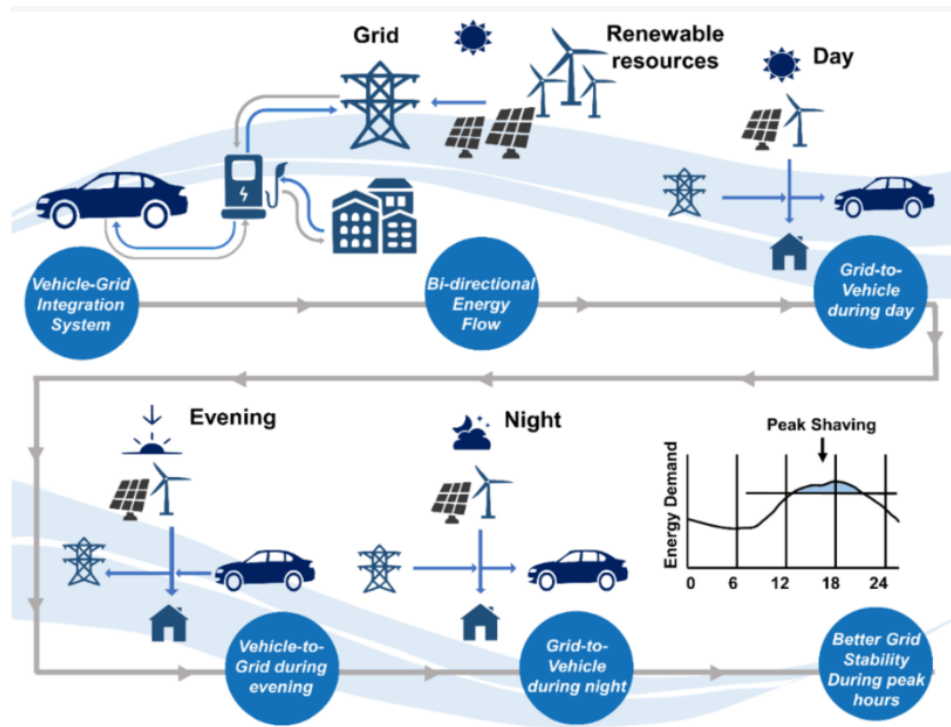
There are no Commonwealth or State policies or funding specifically targeting decarbonisation of the marine sector, such as ferry or barge transport, which is an impediment to progress.

★ Other Specific projects that the group is currently working on include:

Project to establish a shared car pool system for islanders or a shared EV car/cars for islanders.

This could consider bidirectional batteries in EV vehicles (a technology in its infancy) as energy storage systems. The average duration over which EVs are used as a transportation instrument is only about 5%, mainly weekday commuting and weekend traveling.

The remaining 95% of their time (idling time), EVs can be used for other purposes by tapping into their batteries and communication capabilities, which forms the basis for the vehicle-to-grid (V2G) concept.



Ref 15: Image visual representation vehicle-to-grid (V2G) concept

Having MI public transport like buses, hire cars and taxis to become EV and powered by renewable energy, is a priority. Australia's first 100% electric bus depot has 14 electric buses servicing the Gold Coast area. Built by Kinetic, the depot is powered entirely by renewable energy, including a 56-kilowatt solar panel array. A solar powered depot providing solar powered buses on Magnetic Island, is in sight, and the Group has made contact with Kinetic about this project.

★ **Current MITAG project: Promotion of public and active transport.**

There seems to be a lack of confidence in EV vehicles in terms of performance or charging capacity and no public charging stations on MI. Other concerns are around the safety of MI due to speed, lack of dedicated bike lanes and issues around bus/ferry services.

Without reliable buses meeting ferries on time, bus transport is not the preferred medium for transport to and from the ferry terminal. Many buses miss ferry connections.

Translink, Kinetic and Sealink Ferries need to work together with the MI community to address these issues. MITAG made workable suggestions to Translink to alter bus and ferry timetables to ensure this connectivity, with success in changing one ferry time. More work is needed on further changes to these timetables.

There is no established working relationship with Translink, Kinetic and/or Sealink despite approaches by MITAG, due to an apparent reluctance of these entities to engage in dialogue and community consultation, in any meaningful, regular or collaborative manner.



There is a reluctance of many non-vehicle road users to walk, bicycle or ride, due to perceptions that many of the roads around Magnetic Island are unsafe due to excessive speed limits, traffic signs and the lack of dedicated or shared bicycles paths. Excessive traffic speed limits may result in wildlife maiming and deaths, which is significant that MI native wildlife is protected or endangered. This may impact on the Island's World Heritage Values.

MITAG has made a comprehensive submission to Townsville Council (with the support of Magnetic Island Nature Care association MINCA) for a speed limit review and traffic sign review of Magnetic Island in late 2023. MITAG recommends Council community engagement around this Review.

As an example, Auckland Transport in New Zealand is reducing speed limits in town centres from 50 to 30, some rural roads from 100 to 40 and 30.

This includes changes on tourist focussed islands, with a terrain and population much like Magnetic Island.

[Proposed Speed Limit Changes - Phase Three](#)

[Safer speeds on Waiheke Island \(Proposed Speed Limit Changes - Phase Three\)](#)

★ **Other projects which MITAG has completed:**

Magnetic Island Bus survey: [Magnetic Island Bus Survey MITAG](#)

Cost of ferry and Barge costs. There were community concerns raised about ferry and barge prices for islanders. MITAG carried out a comparison of Sealink & other ferry services in comparable islands around Australia and found that the barge and ferry costs were around average compared to other similar locations.

★ **Community Engagement**

Speed Limits & Local Area Traffic Management:
What you need to know

Magnetic Island
Speed Limits are the maximum speed vehicles can operate on roads

Signs do not have to be installed

If you do not see a sign, you should assume the speed limit is 50km/h.

Townsville Council information sheet use this QR CODE

M.I.T.G.
MAGNETIC ISLAND TRANSPORT GROUP

MITAG social media MI speed limits. Image MITAG presentation to U3A.

There was some confusion in the community about the speed limits on MI, with members thinking it was 60KM/h island wide. MITAG engaged in a social media campaign to remind islanders and visitors of correct speed limits, especially given native wildlife being killed or injured on Magnetic Island roads.

MITAG has engaged in presenting information sessions to community groups to garner support and get feedback from the community.

★ **What does MITAG need to achieve its aims ?**

Funding is needed for

- A comprehensive walking Trail & bike path network but in particular for the Alma Bay missing link project.
- EV conversion project; and the EV share car project.
- Community Engagement & Facilitator

★To Sum Up

The circular economy of transportation is based on three principles, driven by design: eliminate waste and pollution, circulate products and materials and regenerate nature. Switching to electric vehicles will roughly halve the climate impact of cars. [Climate change and a circular economy for transport](#)

This cited analysis shows that a transport circular economy system may reduce the emissions from the materials used in vehicles by 70% by 2050. MITAG's plans are well considered and supported by circular economy principles.

MITAG is not as established as the Waste and Energy groups. More cooperation and willingness by Townsville Council's transport representatives, Kinetic, Translink and Sealink to engage in dialogue and collaboration which is regular long term and reliable, with MITAG is imperative as it has not been the case to date. With ongoing support, MITAG could establish those relationships to help implement MITAG's projects, where transport is predominantly electric or low emissions. This will reduce GHG emissions, toxic fumes or spills from fossil fuels which in turn will serve to protect the Island's unique natural environment and World Heritage values.

3. Totally Renewable Magnetic (TRM)



★THE WORKING GROUP

Totally Renewable Magnetic (TRM) has been an active working group since 2022 and its volunteer members have varied skills and expertise in engineering, electrical installations, banking, project management, sustainability, human resources. TRM has strong working relationships with stakeholders like Council and Ergon. TRM aims to make Magnetic Island's electricity supply 100% renewable by 2030. TRM aims to make the electricity supply more reliable, resilient, renewable and sustainable. (see: [MICDA web site: Energy](#)).

★ **Energy & GHG emissions on Magnetic Island**

Magnetic Island sources electricity from the mainland grid which is largely fossil fuel powered and equates to 76% of the island's total carbon emissions. MI is supplied by two underwater cables with its electricity predominantly supplied from the National Electricity Market. There are two 11kv overhead lines: one supplying Arcadia and Horseshoe Bay and the other supplying Nelly Bay and Picnic Bay. The annual use of electricity is 62,798GJ (29,515GJ residential and 33,283GJ non-residential) [Source: Ergon Data 12 months to 30 March 2023 www.ergon.gov](#)

There are 1,908 residential metered connections at 1,744 residences on Magnetic Island using an average of 15.41 kWh/d. There are 195 business metered connections on Magnetic Island using an average of 134.5 kWh/d. There are 534 solar connections on Magnetic Island on average each exporting 11.9 kWh/d. Overhead cables are susceptible to cyclone damage but the geography, climate and population density make alternatives difficult. Peak demand each day typically occurs between 3pm and 10pm. Peak demand days typically occur during holiday seasons (such as December to January, and Easter). Electricity consumption is the source of most of the Island's total carbon emissions. (data from TRM)

Sources: <https://pv-map.apvi.org.au/postcode>

Over 3.7MW of solar panels on the Island and more than 600kW added in the last 12 months. Estimated to produce 20% of the Island's electricity. There is a large community uptake of solar energy already on the island, which can be built on in order to achieve TRM's aims. This existing uptake of solar energy shows a willingness by the MI community to try new initiatives and to support plans for a solar powered island. TRM aims to increase Solar Generation on MI, invest in storage, seek funding to install microgrids to share the benefits to all islanders whilst encouraging electricity to be used more efficiently and manage demand.

TRM aims to encourage electrification of all aspects of household & business operations on MI using locally harvested solar energy.

This approach of electrifying everything in order to reduce carbon emissions is a strategy created by world renewable energy and sustainability expert, Saul Griffiths, who has empirically demonstrated cost savings, emissions reductions and energy system benefits of electrification so as to facilitate on the ground community led climate action.

Using all electric zero emission appliances and vehicles will save money and by using rooftop solar, this abundant energy can electrify our industries and generate an abundant future.

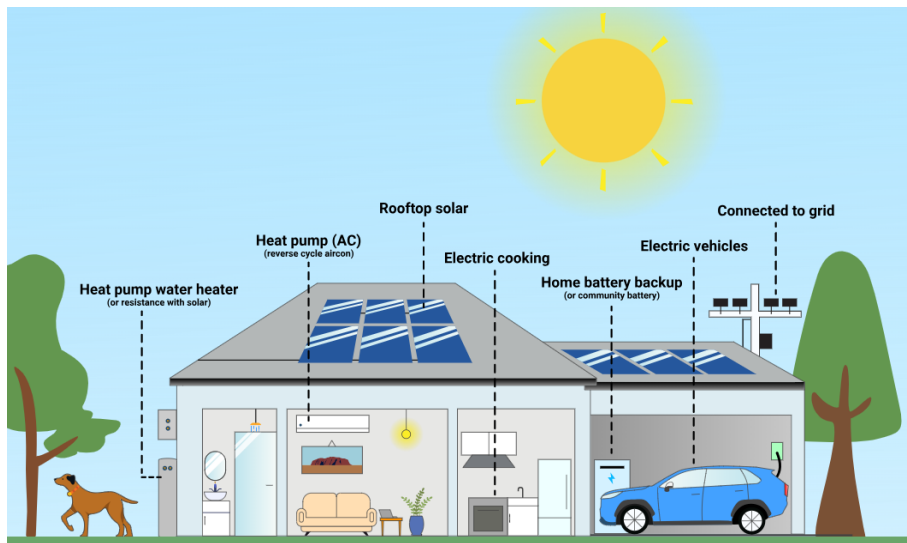


Image from Rewiring Australia. [Rewiring Australia](#)

★ What are the future TRM projects and ideas ?

Feedback from the community, against a background of community action, reports and engagement, the working group has settled on future actions and projects, in order to achieve its aim of making Magnetic Island a solar powered island by 2030.

★ Microgrid for Magnetic Island Project

In the Magnetic Island-Decarbonisation of Great Barrier Reef Islands Report (2020) it was identified that a Microgrid could reduce annual CO2 equivalent tonnes by 13,000tCo2e. From : [Magnetic Island](#) Decarbonisation Report.

With about 1,000 occupied households on MI and about 400 unoccupied dwellings , the total cost for all the occupied residences on MI would be about \$20m and \$28m for all residences, working on the assumption that none of the households currently have solar, smart meters or batteries.

About 40% of MI buildings already have 3.7MW of solar panels generating an estimated 25% of MI's electrical needs (see <https://pv-map.apvi.org.au/postcode> for 4819). This compares favourably to the Australian average of almost 33%. Assuming 38% solar energy penetration, the cost for all occupied residences to be members of the microgrid is estimated to be around \$15m.

Across all 4 bays of the island, this would work out to less than \$4m per bay. This program would be scalable and undertaken in stages.

★ What is a microgrid ?

Battery systems and microgrids are a natural progression for generating energy by solar. Batteries store energy from rooftop solar panels during the day for use in the evening ('solar soaking'). Community batteries do this when they are near to where the solar is produced, as it is more efficient than sending it away to be stored. It allows local renewable energy to be made available to people unable to have their own solar panels, like renters, extreme shading or inappropriate roof structures. Subject to the outcome of a feasibility report, community members could own the batteries, and manage them. Batteries will allow MI to transition to a more sustainable energy system. They allow sharing renewable energy and are a positive step in action on climate change, as well as collectively managing resources. A community battery also provides greater reliability in electricity supply for the island, especially during peak holiday periods.



1. During the day, your solar panels generate energy. You will be allocated storage capacity in the battery so you can virtually store some of the energy you don't use that is generated between 7am and 3pm.



2. The electricity you have virtually stored is used to offset your consumption during the Peak Period and at other times if there is still stored energy remaining.



3. Excess energy generated that is not stored and is exported to the grid and any unused virtually stored energy at the end of each billing cycle will be sold to Synergy and you will receive a credit on your account for this energy.

Image From a Power Bank trial in WA.

Ref 16: Renewable microgrids already established in Australia.

Most island businesses operate only during business hours, so the amount of battery storage required for these consumers would be significantly reduced. The cost of bringing businesses into the microgrid should be less per kilowatt hour. Businesses represent about half of the demand for electricity on MI. Businesses should be brought into the project in order to decrease GHG emissions.

There would be the need for skilled trades on YMI or to travel quickly from the mainland in the event of microgrid system outages. This represents an opportunity for much needed future skills in the region and to create local jobs on the island.

This project will be effected over four stages:

Stage 1: Feasibility Study: estimated cost \$300,000 for 4 villages

Based on work previously undertaken by TRM and Townsville Council (e.g., pre-feasibility study for TCC by SMEC) a full feasibility study would be needed before undertaking any capital works. Such a study could be used to apply for up to 50% and sometimes 100% of the funding from agencies such as ARENA (e.g., <https://arena.gov.au/news/120-million-to-roll-out-community-batteries-across-australia/>).

Stage 2: Pilot Project: Implement and construct a trial microgrid in a village with a set number of households, that suitably manages supply and demand of solar energy generation, battery storage, energy transfer, billing and ancillary power services in one village on the island.

Ref 17: Detailed information about this project is here

Stage 3: Expand the pilot project to an entire village and then the other three villages on YMI.

Stage 4: Expand to YMI businesses. Businesses represent about half of the electricity demand, hence are responsible for half the carbon emissions associated with electricity on MI. Businesses have proportionally higher electricity needs than YMI households. GHG from YMI businesses are likely to increase with the increase in visitor numbers on the island over the next 10 years by 25%.

Although the focus of the Stage 2 Pilot Project and Stage 3 is residential, the project would display the benefits to local businesses, many of which already have solar installed. Many of the businesses operate during limited hours, and therefore the amount of battery storage required would be reduced, so the cost of bringing businesses into the microgrid should be less per kilowatt hour.

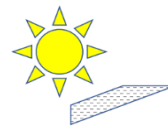
The process for bringing businesses into the program is the Fourth Stage of this project is dependent on the outcome of the earlier stages.

This project would help inform and encourage the YMI Community on the use of renewable energy and how the technologies available today are capable of making YMI renewable, self-sufficient and more resilient. Such self-sufficiency would lead to greater resilience, such as during extreme weather events.

The renewable and self-sufficient nature of the microgrid system would be consistent with YMI as a tourist destination in the Great Barrier Reef and its World Heritage Values. It aligns with recommendations of the Tourism Master Plan for MI which has an aim to create a sustainable tourism industry on MI. A microgrid allows business and residents to become stewards of renewable energy systems. MI would be a showcase to demonstrate progress made by communities, Federal, State and local governments to achieve net zero emissions by 2050.

★ Transition MI businesses to solar energy

Install Solar Generation



- **If you can afford electricity, you can probably afford solar.**
- A **6.6kW** solar system on Magnetic Island can pay for itself within **4 to 6** years.
- The major variable for the payback period is **day/night** usage
- Finance the installation of solar - **money saved** from electricity bills, extensions on **mortgages** and **loans** at special interest rates
- For more information about your specific circumstances, see reliable websites such as:
 - apvi.sunspot.org.au
 - solarquotes.com.au
 - solarchoice.net.au
- Or **talk to a TRM** member
- Increasing solar generation would reduce Magnetic Island's carbon impact (solar on Magnetic Island is estimated to save 5,438 tonnes of carbon emissions per annum)

Image from TRM

TRM will focus on businesses from 2024 onwards. The average business uses 9 times the electricity than the average household on MII. Island businesses usually source solar energy information from web sites, or with one off interactions with a provider or government funded business initiative, but the Business operator is left without support or aid to implement change.

That information often doesn't suit island conditions nor is it always suitable for the small tourism & accommodation businesses on YMI.

After feedback from businesses and TMI, it is clear that almost all YMI businesses are small to medium sized with hands-on owner/workers who are time poor, which impacts on decisions to convert to solar. Even if they have the knowledge, they might not have time, energy or resources to implement change. TRM has the local expertise and knowledge together with no financial agenda, which will help create trust and as they are local, are readily available to businesses on the island. TRM has created a plan with businesses on the island, with the support of Tourism Magnetic island, to transition them to solar energy electricity. The focus is on:

- **Time:** Most of the business owners on the Island are time poor, especially during holidays. TRM will help YMI businesses understand the process and likely financial consequences of installing solar.
- **Trust:** Most of the businesses do not know which suppliers to trust for business installations on YMI. TRM intends to create a short list of suitable YMI larger scale suppliers so that businesses will be better informed.
- **Money:** TMI believes that this strategy is timely as electricity prices have increased. TRM will provide information about the bottom line benefit, watch out for grants and tax breaks, providing information in a timely fashion.

This strategy is one of collaboration and support to island businesses in order to provide MI business operators with energy reduction strategies/conversion to encourage and help with their conversion to solar energy. Business solutions have to have profit/cost advantages to the business and TMI will work to achieve this.

★ **Biz Assist Energy : Business support to convert to solar energy**

Whilst TRM has advised YMI households on transitioning to solar energy, energy efficiency, rebates, and encouraging uptake, a paid worker called Biz Assist Energy, for say two years aims to provide individual one and one support to businesses to transition to solar energy is recommended. Relying solely on volunteers to carry out such work is not viable in the long term.

★ **What has TRM done so far ?**

In just one year, TRM has advised over 20 residents on solar generation installation and a smaller number of residents on battery installation. Installations which may be suitable on the mainland may not suit MI conditions or residents' needs, given installation and servicing uses marine transport to the island, adding to costs.

The need to tailor advice and support to YMI residents on a totally impartial basis is done by TRM entirely free without supporting any particular product or installer. This gives residents options empowering informed choices.

TRM intends to continue informing and supporting residents on YMI on a one on one basis, the extent of which will be subject to volunteer capacity.

Currently members of TRM who are volunteers with capacity, are working with stakeholders and community organisations like the YMI Men's Shed with grant applications and to collect data about energy use, systems /systemic issues etc. This data might help with a microgrid trial application in future.

★ **Community Engagement**

Joe Niven is the current TRM coordinator and both he and the TRM volunteer group have helped YMI residents to reduce energy use and to convert to solar renewable energy. TRM have conducted forums & community information sessions, to educate visitors and residents with practical actions. TRM has held TRM Energy forums in 2022 and 2023, hosted information stalls at events like the Easter Fair, given talks to community groups like Magnetic Island Residents and Ratepayers association (MIRRA) and University of 3rd Age (U3A).



Image: TRM 2023 Energy Forum

The TRM social media platform, a Facebook page at this stage, is a local resource tailored to islanders to keep islanders informed about events, information and education on practical steps to have MI powered by local solar energy by 2030. TRM informs the community of incentives for electrification and energy efficiency.

★ **What does TRM need to achieve its aims ?**

- Funding is needed for a microgrid scoping study and then capital works.
- Converting Magnetic Island to renewable energy requires considerable funding.

- TRM has applied for grants for feasibility studies and microgrids. Without a feasibility study in the first instance, funding applications for microgrid trials have proven unsuccessful.
- The support of a paid position with experience in social media, to organise events and assist with community engagement is recommended.
- Funding is needed for a skilled web designer. There would be community benefits for TRM being able to disseminate information and advice specific to MI by creating its own web site. Social media is not used by many members of MI with its older demographic.

★ To Sum It Up

The objective of a Totally Renewable Magnetic Island is to reduce GHG emissions associated with Energy and increase resilience in the face of climate events. Living on an island provides challenges in the supply of essential services to its community whilst protecting the Island's unique natural environment and World Heritage values. Thus these challenges could be met as far as energy supply is concerned, with the Totally Renewable Magnetic Island strategy.

4. Magnetic Island Water (MIW)



★ Aim

To create a sustainable water supply, sewerage disposal and stormwater management systems, infrastructure that is affordable, reliable and minimises any impact on our World Heritage values - and the natural land and marine environments unique to Magnetic Island. MIW aims to have the Island's water and waste systems made as resource-use efficient, and as carbon neutral as possible.

[MICDA web site: Water](#)

★ **How MIW achieves its aims**

This Group was established in early 2023. The Group works in partnership with other Island associations and informs community members about current and future water supply, surface and subsurface hydrological conditions, as well as sewerage waste services and disposal.

As the focus of the group is about wastewater and stormwater, volunteers and interested community members tend to have an expertise in this field as the subject matter is quite technical and complex. Many members are experienced engineers, scientists and water/waste water consultants, and represent the MI community. The Group works with Council on issues around water, stormwater, and waste water and come up with solutions which are community driven.

A member of this group contributed to the Magnetic Island Catchment Story which is a comprehensive report into the waterways and catchments in the island, and is a valuable resource for the wider community. [Magnetic Island Catchment Story](#)

★ **Water and Sustainability /GHG emissions**

YMI is dependent on Townsville for its water supply. Potable water is supplied through a high-density polyethylene submarine pipeline that extends for 5.6km from Pallarenda on the mainland to Bolger Bay reservoir. From here, water is distributed to other island reservoirs and finally to the island's properties. Rainwater tanks and bores are used at some residences. According to the Decarbonisation report 2020, water use on the island is well above the state average, possibly due to the high visitor numbers. GHG emissions are created in pumping water from the mainland, the island's pumping stations and in the wastewater treatment plants.

The Reef Authority Position Statement on Water Quality finds that despite considerable efforts to improve water quality, land-based run-off remains one of the most significant threats to the long-term health and resilience of the Reef. Together with climate change and other cumulative pressures such as coastal development, poor water quality is contributing to the current poor state of many inshore marine ecosystems, including Magnetic Island.

The Picnic Bay waste treatment plant on YMI is not operating at capacity as it cannot dispose of all of its treated water. That treated water cannot be released into the marine environment or certain land areas, due to State and Federal laws.

The lack of capacity at the Picnic Bay Waste Treatment Plan means that there has been no new connections to the sewer system for a number of years, which in turn, has resulted in almost half of the homes in Picnic, Nelly and Arcadia being on septic. Newer developments have to dispose of their waste water on site. There are concerns around leaking of site sewage disposal and septic systems, particularly from low permeability surfaces in built-up areas. There is evidence of these septic systems flooding during heavy rains and leaching of waste water (potentially contaminated) as well as nutrients running off into the MI waterways and then, out onto the Great Barrier Reef.

YMI has many small waterways with all waterways eventually flow directly into Green Zones (e.g Alma Bay or Geoffrey Bay), and into the world heritage listed and protected areas along the Great Barrier Reef (GBR). Other impacts of urban stormwater discharge on the Island's environmental values include estuarine (mangroves), wetlands, coral reefs, seagrass and species such as dugongs, flatback turtles and blue tiger butterflies.

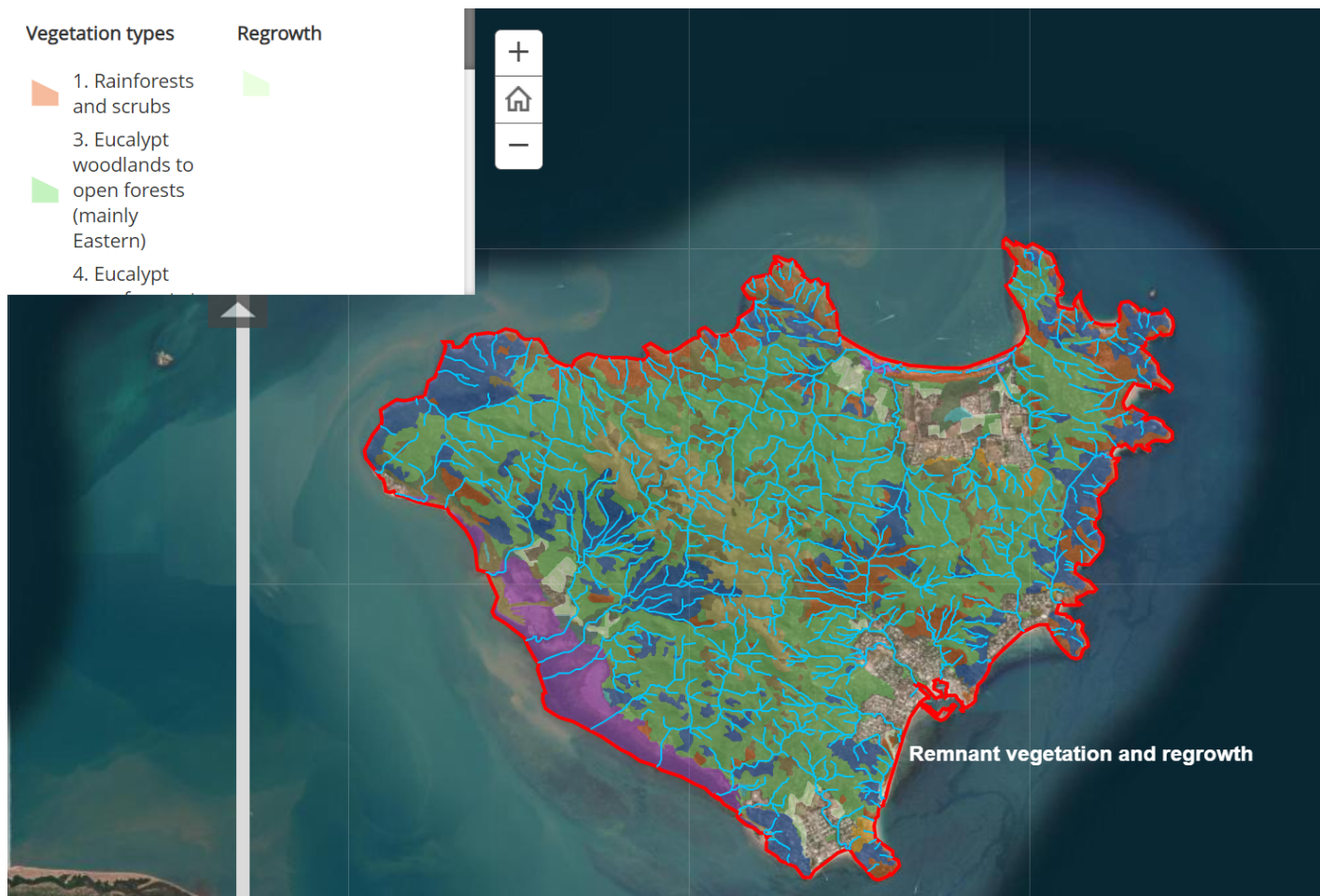


Image from Magnetic Island Catchment story showing urban developments and activities which have changed the shape of the landscape and can modify water flow patterns.

<https://qgsp.maps.arcgis.com/apps/MapJournal/index.html?appid=db22f5427e284c0f99379a470b3f72f8>

Residential/commercial infrastructure and coastal development has modified natural hydrology, particularly Nelly and Horseshoe bays. Modified flow, estuarine connectivity and channels, increasing flow rates and erosion has caused sediment to be carried downstream reducing water quality. Coastal erosion is associated with wave action, particularly cyclones. Suspended sediment negatively impacts the GBR, due light restrictions, nutrient content and contaminants such as metals.

The community has concerns around the lack of potable water on YMI if the water pipeline to the mainland is disrupted as there is little permanent storage of water on the island and no back up supplies. There are concerns about the large amount of rubbish especially plastic and microplastic in the waterways that may flow out to sea. The Reef Authority in its Position Statement on marine debris confirms that marine debris is a major threat to the health of the Great Barrier Reef.

Against a background of group expertise and engagement, the working group has indicative projects and policies it seeks to develop.

★ **Picnic Bay Waste Treatment: capacity and treated wastewater**

The Picnic Bay waste treatment plan uses its treated wastewater, which is sterile and nutrient free, on an adjacent golf course, but there is not enough storage to keep that water separated pending use. Council advises that they are building extra storage for treated waste water which they hope shall resolve this capacity restriction. It is not known if this is a long term and viable solution.

★ **Re-Use of treated Wastewater**

The Group has ideas around using treated wastewater on parks, street verges, gardens, community gardens and street plantings. Council indicates due to lack of infrastructure and projected cost, together with policy & regulatory issues, reusing treated wastewater in such a fashion is untenable. The Group seeks to investigate this further due to community interest around community use of treated wastewater.

★ Septic connections to Sewer

In future when there is capacity at the Picnic Bay Waste Treatment plant, Council has no plan to encourage connecting any existing household septic and on site waste disposal systems to the Picnic Bay Waste treatment plant.

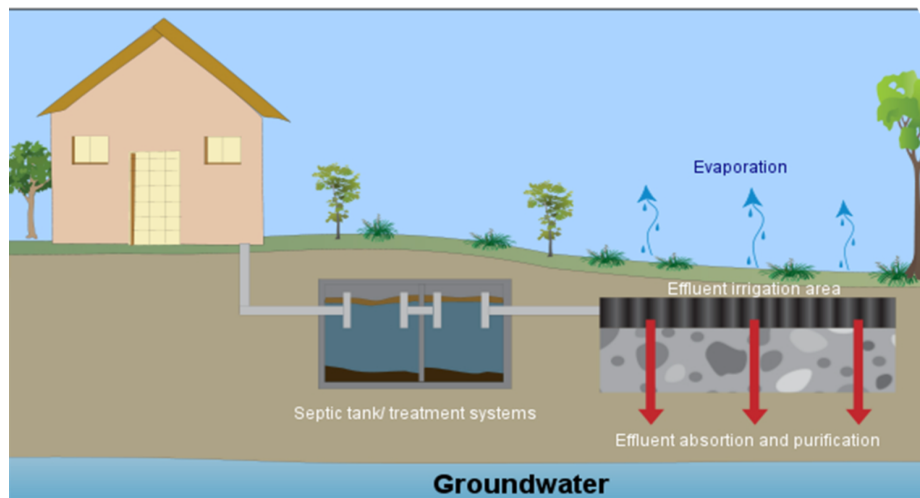


Image of on site sewerage treatment

The cost of connecting a home to the sewerage system is about \$25,000. Council has ruled out any subsidies. These high costs may discourage households and businesses currently on septic in Picnic Bay, Nelly Bay and Arcadia from connecting to the Picnic Bay Waste Treatment plant. There is an impact from these septic systems on YMI water quality both surface and subsurface. The freed up capacity is likely to go to new connections/developments, rather than replace old septic connections.

Given the island's World Heritage status and its contribution to the tourism economy of the region, there is a case for Federal, State funding, policies and subsidies for connections of current older septic systems into the sewerage network. There needs to be incentives to encourage connections to the Picnic Bay wastewater treatment plant (when it is back at capacity).

★★ Water Quality & water storage testing

The recently released Dry Tropics Partnership report for 2023 although found that water quality around Townsville catchments had improved, the source data seems to be lacking and the somewhat positive finding for water quality, as far as YMI is concerned, may not have been substantiated.

[drytropicshealthywaters_report-card-2023](#) From Data for inshore Marine results (Part 5).

There is a lack of data on below subsurface discharge of water in residential areas/target locations, comprehensive water quality data especially after rain events and in the waterways, and on the number and extent of bore waters and aquifers on YMI. In order to make a case for Federal/State funding /subsidies for islanders to connect to the sewer rather than continue their use of septic systems, data is needed which is beyond the scope of this group to collate.

The Group recommends funding

1. To establish a comprehensive testing regime to collect and collate data on the issue of below subsurface discharge of water in residential areas/target locations.
2. For a feasibility report and then implementation of a quality comprehensive testing regime for the water quality in the relevant YMI waterways and stormwater discharge locations.
3. For mapping and collection of data for the aquifers and bores around YMI.

☀️Address stormwater disposal outfall into Alma Bay



Pictured above: Alma Creek mouth after a big event and before the current catchment increase

Council in late 2023 carried out extensive stormwater drainage works in Alma Bay (the most popular/frequented beach on YMI & connected to a Marine Green zone). Council did not engage in community consultations at the design stage.

[Alma Bay stormwater](#)

The community is concerned about the potential impact on Alma Creek and Alma Bay environment, including potential erosion and sedimentation in Alma Bay. There may be an impact to turtle nesting sites and safety concerns at the mouth of the creek, with the altered hydrology discharging greater volumes of stormwater (which is freshwater) directly into Alma Creek and Alma Bay and the increased potential for pollutant transport (e.g. nutrients, sediment, chemicals and plastics) into Alma Bay.

Council is now, after community outcry, working with community groups on this issue, examining options to address these concerns around water quality and biodiversity outcomes in Alma Creek and Alma Bay. There is a need to establish an ongoing community consultation and engagement process with Council, especially around Wastewater and stormwater at the inception of any projects, to ensure that lack of community consultation around significant and major stormwater works does not happen again.

★ **Rainwater tanks & water usage on YMI**

The decarbonisation Report 2020, recommendation 4 is to encourage installation of rainwater tanks. The uptake of rainwater tanks is not widespread as the use was previously illegal. Council has advised that a rainwater tank of at least 5,000L would be needed for a YMI home, given that the island has a dry tropical climate, to allow any form of resilience in the event that the water pipeline is not operational. Council rebates don't cover the cost of transporting tanks or plumbing fixtures to the island. It is recommended Council increases rainwater tank rebate for YMI residents.

The Group has concerns about the way potable water is billed on the island. Currently it seems to encourage high water use. This needs to be explored with Townsville Council, who has advised that it is reviewing water billing and its wastewater plan in 2025.

★ **Install disposal facilities for tourists traveling in motorhomes**

The decarbonisation Report 2020, Recommendation 5 is to install disposal facilities for tourists traveling in motorhomes.

There are currently no disposal facilities for tourists traveling in motorhomes, which may either limit their stay or encourage illegal disposal of sewerage and waste. Community members report seeing what is clearly campervan waste, discarded on the beaches, waterways and shore lines.

★ Educate on hydro geomorphological conditions

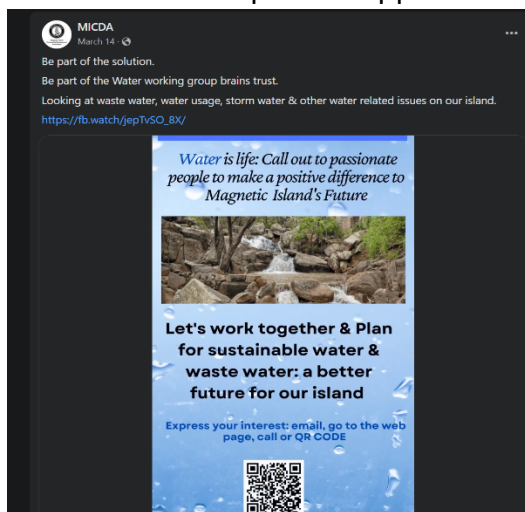
There is a need to educate on hydro geomorphological conditions on MI in order to inform long term solutions around stormwater & waste water issues.

The Group has the benefit of input by two highly knowledgeable and qualified consultants with decades of experience on YMI and specialising in hydro geomorphology, supporting their view in a recent confidential report unavailable publicly, states:-

It is strongly advised that no development should be allowed on Magnetic Island without fully understanding, and considering, the geomorphological processes associated with (a) sand deposition along the coastline, and (b) the transfer of rain and storm waters both across the surface and **through** the sediment profile from the hills to the marine waters.

★ Community Engagement

The group has not, as yet, due to its fairly recent creation, engaged in community engagement as yet. The group has become a referral point from community members for help and support on water related issues.



Calling for community volunteers who are interested in contributing to the Magnetic Island Water (MIWater) group

What is it about?

The group would develop and implement a Water Plan for the Island that is sustainable, renewable, reliable, efficient, effective, safe, and resilient to meet our future water needs. MIWater is to be comprised of community members that have a strong interest in the current and future water sources and use, as well as waste recycling requirements for our community, while working in partnership with our whole community.

Some draft objectives for the group might look like:

- Provide an effective forum for communication and engagement between the community, Townsville City Council, government departments, commercial providers, and technical experts, with open, transparent, and constructive dialogue.
- Improve knowledge and understanding of community water needs, as well as the available and viable options to promote participation in community water solutions.
- Collate publicly available information to understand the water cycle in each of the Island communities, including precipitation, piped water supply, wastewater, groundwater, and evaporation.
- Create a community water vision and objectives for the Island.
- Develop a roadmap for implementing a Water Plan for the community to meet the Island's future needs.
- Implement a water plan for the Island in partnership with the community and other stakeholders.

If you are interested in participating, please email your contact details to Les Sampson at micda.president@gmail.com or call Les on 0408 803 961.



Image from social media for the Water Group seeking members.

★ Circular Economy

The aims and projects that the Water working group set out in this report provides an opportunity for YMI to work towards a Circular Economy for Water.

This better aligns the human water cycle with the natural water cycle by:

- Avoid Use – better design and rethinking around products and services.
- Reduce Use – improvements through water use efficiency and better resource allocation and management.
- Reuse – reuse water within an operation (closed loop) and for external applications within the surrounding vicinity or community.
- Recycle – within internal operations and / or for external applications.
- Replenish – efficiently and effectively returning water to the basin.

The various projects set out in this report may result in outcomes consistent with a

Ref 18 Circular Economy for Water measures.

★ What does MIW need to Achieve its Aims: to sum up

- Funding is needed for the Water Quality study in the 4 urbanised bays of YMI
- More collaboration by Townsville Council: This group has had constructive collaborations with the General Manager Water & Resource Recovery of Council. However, the stormwater infrastructure section of Council has not engaged in community consultation prior to carrying out works or planning for works on YMI, despite approaches from this group. When they do get involved, it is after community outcry like Alma Bay, after works have already been designed or carried out. It would be far better for the community and Council to work together in a proactive rather than a reactive fashion.

WasteWater and Stormwater collection, treatment and disposal is predominantly controlled by Townsville Council and is the subject of large funding and infrastructure needs beyond that of a community group to fund. The issue of water security, sustainability and protection of the island's world heritage values, cannot be addressed by Council or indeed any one stakeholder alone. The solutions must have community support, address community concerns and be community created.

5. Ecosystem Monitoring & World Heritage Values Projects

★ Magnetic Island (Yunbenun) Community Action Plan consortium

In 2020, MICDA and MINCA obtained funding to implement most of the recommendations of the Magnetic Island Community Action Plan (MICAP), including the Wulgurukaba on Country.

Ref 19: Detailed information about MICAP and the Decarbonisation Report for YMI is here.



The whole project, called the Our World Heritage Island (OWHI) initiative, aims to improve the engagement of the broader community in the protection of the Great Barrier Reef World Heritage area. Great Barrier Reef Foundation (GBRF) provided seed funding for:

- Protect and Strengthen Traditional Owner Cultural Heritage – auspiced by MICDA on behalf of Wulgurukba Traditional Owners
- Community Partnerships for Ecosystem Monitoring – managed by MICDA.
- Develop, communicate, and implement a community vision and actions for Magnetic Island’s World Heritage Values– managed by MINCA.

[Our World Heritage Island Groups | micda.com.au](https://micda.com.au)
[Small community, big vision - Great Barrier Reef Foundation](#)

A Steering Committee was established to guide projects funded pursuant to the MICAP 2021. The group was composed of Magnetic Island Community Development Association (MICDA), Magnetic Island Nature Care Association (MINCA) and Arcadia Coast Care (ACC), Traditional Owners, Magnetic Island Network for Turtles (MINT) and other community members.

★ Working Groups & MICAP

The working groups were established by MICDA as a result of MICAP recommendations. Other island groups such as the Reef Assist project have been conducted by MICDA since 2021 with funding from Townsville Council, are in effect, part and parcel of OWHI & the MICDA working groups.

The Reef Assist team has been working to rehabilitate public spaces such as creek lines and vulnerable areas, where weeds have been removed and native plants fostered and replanted to help control erosion. These weeds have been converted into humus soil, which is a viable resource to put onto plantings to help soil rehabilitation and water holding capacity.



REEF ASSIST PROJECT

XLR-8ing food waste recycling, weeding and habitat regeneration

★ World Heritage Values project

The Magnetic Island World Heritage Values Project, was developed by Magnetic Island Nature Care Association (MINCA) and funded through the Great Barrier Reef Foundation. The MINCA World Heritage Values Project aimed at building a comprehensive knowledge base of the island's marine and terrestrial natural features and values, by reviewing existing knowledge and refining it through a series of expert and public workshops and targeted research.

The aim of the project was to enable the island community to identify the natural values needing protection, and the best way to reduce any threats. As well as consolidating existing knowledge and concern, the project aims to provide direction for further activities and for targeted monitoring of impacts.

Video about the island's World Heritage Values was commissioned by MINCA and is [here. Our World Heritage Island](#)

The World Heritage Values report is to be completed by the end 2023. It is a vitally important piece of research which documents the island's world heritage values and the current threats to its land, sea and cultural values.

The imperative to protect those values is overwhelming, not just from a biodiversity, climate change and environmental viewpoint, but for the economic and social benefits that an island within a world heritage listed area such as the Great Barrier Reef, brings to the region and indeed to Australia.

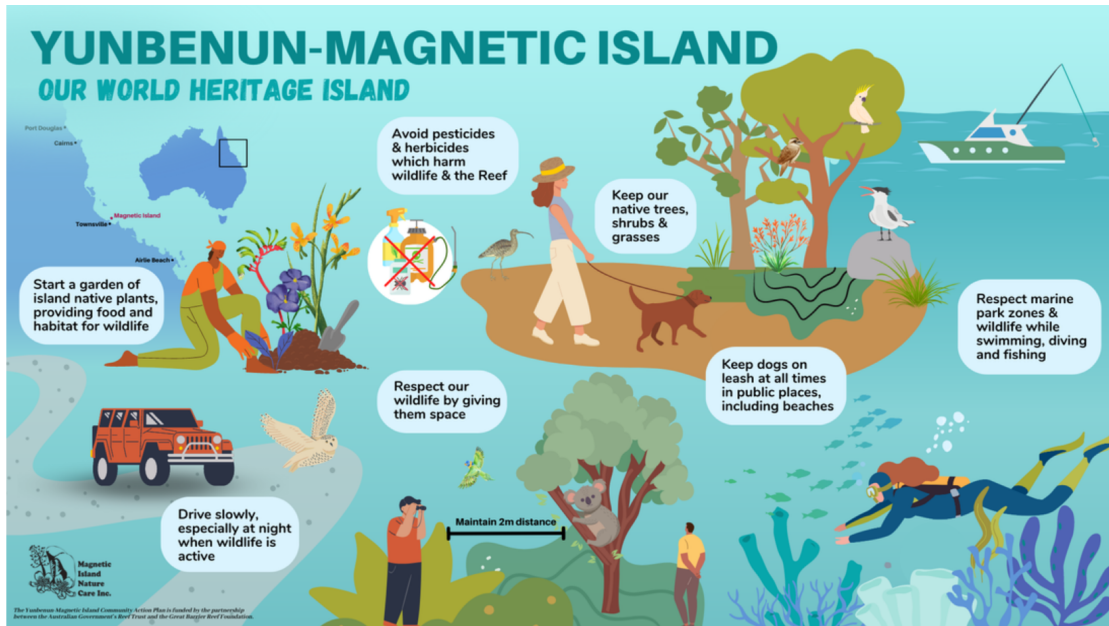


Image from MINCA web page [Threats to our terrestrial environments and our World Heritage values](#)

★ Ecosystem Monitoring Project

The main objective of the Community Partnerships for Ecosystems Monitoring Project was to harness the energy and knowledge of residents, Traditional Owners, and stakeholders to systematically record, report on, and communicate the island's marine and coastal ecosystem health, and factors affecting this health. This project established partnerships to advise and implement the following:

- Working with scientists and managers to train residents, Traditional Owners and stakeholders in ecosystem monitoring and reporting techniques.
- Encouraging two-way knowledge sharing between Traditional Owners, scientists, residents, and Reef managers.
- Increasing voluntary participation in ecosystem monitoring and citizen science initiatives to benefit the Reef and to inform management responses.

The Ecosystem monitoring projects kick-started new, on-ground initiatives to identify key knowledge gaps and drive action. These included projects like Trek for Trash; Under Alma ; Maggie on Tap; and Magnetic Island State School Adopt-A-Creek Program.

The Ecosystems project was completed at the end of 2023, with the end of its funding from the Great Barrier Reef Foundation (GBRF). The GBRF funding for the Protect and Strengthen Traditional Owner Cultural Heritage Project finished as of end 2023. The final report has been handed down is here [Community Case Study - Magnetic Island](#)



The Ecosystems monitoring projects and Eco Engagements projects ought to continue and their success built on. It is anticipated that those will continue by one or more of the working groups who will either lead, support or collaborate with a third party. If funded, an Eco Engagement facilitator will work across the various working groups to provide them with the necessary and essential support on Eco monitoring, community engagement projects and events.

MICDA engaged a non indigenous, islander coordinator to lead the Protect and Strengthen Traditional Owner Cultural Heritage Project. The Wulgurukaba have been integral and part of the OWHI project who have also worked with the government and other groups to regenerate and protect areas of Magnetic Island including the green zones at Geoffrey Bay and Alma Bay. They work in partnership with all the groups looking after country: Arcadia Coast Care, Geoffrey Bay Coastcare, QPWS, MINCA, MINT, NQ Dry Tropics, on projects like rubber vine project, turtle nesting.

The GBRF funding for this aspect of the Traditional owner capacity building has now finished. It is hoped and anticipated that the Wulgurukaba traditional custodians themselves, will continue to receive funding and now be in a position to lead, coordinate, create and implement their own activities and projects from now on.

This project included community engagement NAIDOC events such as weaving workshops with the Wulgurukaba which were immensely popular. There is a need to provide ongoing funding for future NAIDOC events such as weaving workshops, cultural talks and guided walks.

see Chapter on Wulgurukaba

★ Ecosystems Monitoring : where to now ?

Many of the following projects were recommended in the initial Magnetic Island Community Action Plan 2020 and the need for them to be implemented is still there. These projects should be carried out with the support of or in collaboration with the Wulgurukaba traditional custodians, MINT (Magnetic Island Network for Turtles), Arcadia Coast Care, QPWS, Townsville Council, MINCA and/or not for profit groups together with the relevant working group:-

- Ecosystem rehabilitation, fauna conservation & native plant propagation & establishing a bush tucker plant nursery.
- Co-design and undertaking survey and photo monitoring and database design for protection of vulnerable sites and to consolidate existing information.
- Social media production like videos for the ferry to promote and protect cultural heritage, visitor education & information especially around world heritage values.
- On-ground and in-water restoration and regeneration actions including measuring impact around mangroves, saltmarshes, creeks and reef health to inform management decisions and community-led on-ground actions
- Synthesis of seagrass extent and condition data for YMI to guide local priorities for action to help protect local habitats and critical wildlife like turtles and dugongs
- Dune/coastal restoration work, such as enhancing coastal and riparian habitat resilience for resident and migratory species such as Turtle nesting sites.
- Implement coastal and riparian revegetation projects to reduce erosion, improve water quality, protect wildlife and build climate resilience, protecting YMI's wildlife, sea and landscapes to help reduce loss of biodiversity (which in turn can increase GHG emissions).

★ Other specific projects: Community Garden project

The Magnetic Island Community Garden group (MICG) is a MICDA working group MICG group aims to establish community gardens on the island, through a phased approach with Council's support to secure a suitable location for the community garden and to support its design. This project requires funding.

This community Garden project would use humisoil generated on YMI. Food security under a changing climate is a concern for many islanders.

Community gardens are a positive action to build the resilience of the community. The garden could educate islanders about what food to grow on MI more effectively. <https://www.micda.com.au/community-garden>



Image is the current Reef Assist plant nursery

★ **To Sum up and what is needed**

The next stage of Ecosystems is to merge into the relevant working group with a view to implementing actions in a holistic fashion, continuing with vital projects, based on a 'whole-of-island' approach, with a main focus of protecting Magnetic Island's world heritage Values in a holistic fashion.

Funding for Ecosystems monitoring has completed but it is recommended that subject to future funding, current and new projects be funded to build on past successful projects. It is suggested that the Ecosystems monitoring and community engagement projects are best continued and created via the working groups.

Funding for an Eco Engagement facilitator is needed to continue with Eco Monitoring, community engagement and education projects, by providing support to the relevant working group. This enables community engagement and education, ecosystems land and sea monitoring and restoration projects to be carried out in a holistic fashion and by using the whole of island model, to provide the community backbone and involvement for those projects.

Monitoring and community engagement projects need community support and to drive them. Having these projects carried out without the involvement of the island community groups in a holistic approach, may lead to a fragmentation and competing priorities and projects, creating volunteer burnout due to competing demands and governance issues.

6. The Wulgurukaba People



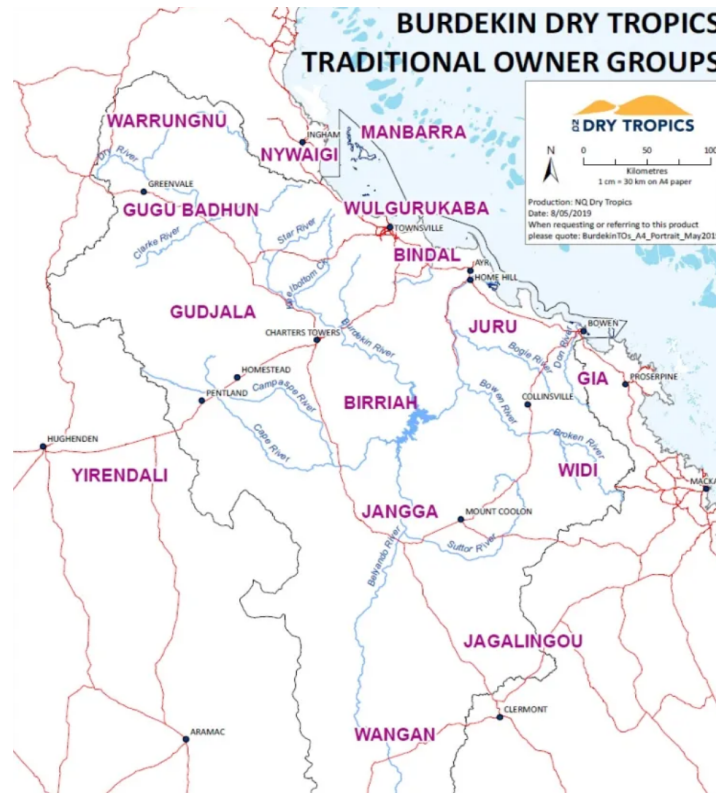
Photo by [@corserimages](#) Commissioned sculpture of canoe people at Jezzine Barracks with YMI in background.

★The Wulgurukaba People

Traditional owners and custodians, the Bindal and Wulgurukaba People are the first people to have lived in the Townsville region. The Wulgurukaba people call their country "Gurambilbarra". According to Elder Arthur Johnson, Wulgurukaba means 'canoe people'. Historical records make specific reference to the use of canoes by Wulgurukaba people. In 1860 at Cape Cleveland, Dalrymple recorded his observations of "a canoe taken from the natives ... being formed of one large sheet of bark about 10 feet long, sewed up at either end with the same cane-like creeper used for this purpose down the coast...capable of carrying six or seven men."

The Wulgurukaba people are descendants of the 'dreamtime' and their traditional country includes Magnetic Island; areas west to the Reid River; south to the Haughton River and north as far as Rollingsstone. Within these areas, the Wulgurukaba people have lived for thousands of years, traveling according to the seasons for ceremony purposes and to make best use of natural resources. The Wulgurukaba people have a spiritual, physical, social and cultural connection to Magnetic Island.

Long before YMI had its current name, it was known as Yunbenun. That name was given to the island by the Wulgarukaba people who lived on the island for thousands of years before European settlement.



Map taken from the Territories page for the Wulgurukaba, page managed by Native Land Digital. Native-Land.ca | Our home on native land

An important symbol of the Wulgurukaba people is the carpet snake (python). Wulgurukaba's creation story tells the story of the creation spirit Gabul the Rainbow serpent (carpet snake) that comes down from the Herbert River, goes out to sea creating the Hinchinbrook Channel and down to Palm and Magnetic Islands. The snake's body broke up leaving parts along the coast. The tail of the snake is at Halifax Bay, and his body is at Palm Island (Bwgcolman), while his head rests at Bremner Point which is Arcadia Headland, Magnetic Island (Yunbenun). Wulgurukaba people have passed down this creation story through the generations.

Whilst the Wulgurukaba inhabited Yunbenun for thousands of years, this connection was disrupted by colonisation. They maintained their traditional way of life until the 1890's when the Townsville port was constructed. The arrival of more European people, the loss of traditional food sources and disease reduced the Wulgurukaba population. Most people were removed from the island in the 1920's and 1930's to be relocated to missions on the mainland of Australia.

A small group remained on the island and many more have returned over the years. According to the 2021 census, there are 56 persons of Aboriginal and Torres Strait Islander descent living on the island.

<https://abs.gov.au/census/find-census-data/quickstats/2021/IQS318021483>

★ **Wulgurukaba People: Native title & Stakeholders**

The Wulgurukaba people hold native title over Magnetic Island and have registered an Indigenous Land Use Agreement (ILUA) for the claim area. The ILUA requires the negotiation of a memorandum of understanding around the preservation of cultural resources and values in the national park, including protection of cultural resources, employment, naming of protected areas, camping and signage. The Wulgurukaba People Indigenous Land Use Agreement (ILUA) covering Magnetic Island was registered with the National Native Title Tribunal on the Register of Indigenous Land Use Agreements in 2010. The Gurambilbarra Wulgurukaba Mada Native Title Claim was later filed QC2020/002 in June 2020.

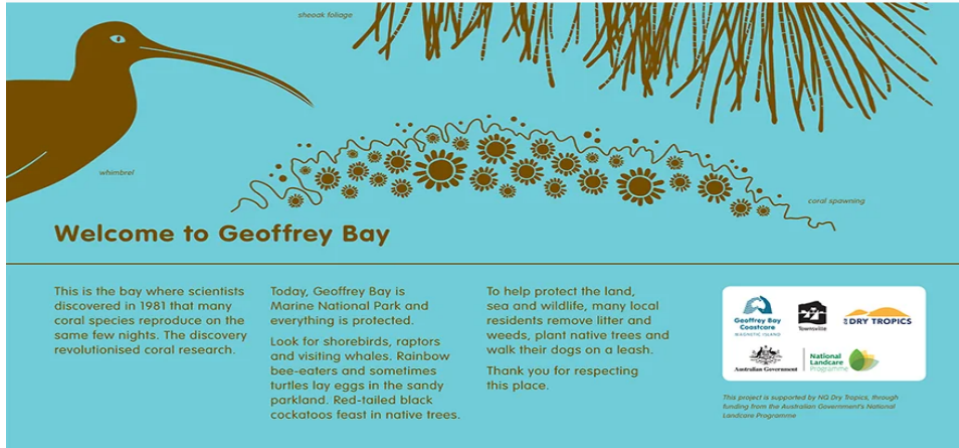
There are small pockets of land held by the Wulgurukaba on Yunbenun which the Traditional Owners are keen to utilise.

Indigenous cultural sites on the Magnetic Island (Yunbenun) have been recorded by the Wulgurukaba people, or in partnership with staff and professionals from the NQ Dry Tropics, Northern Archaeology Consultancy, James Cook University (JCU) and Queensland Parks and Wildlife Services (QPWS) Arcadia Coast Care, MINCDA, amongst others. These sites include middens, rock paintings, waterholes and working sites.

Members of the Wulgurubuka clan group reside on Magnetic Island and in the Townsville area, and are looking after their country and form their own consultative working group as part of MICDA.

As far as Magnetic Island sea country is concerned, QPWS, GBRMPA and the Indigenous parties loosely co-manage the area. The administration of the marine park is separated into policy and strategic levels, the focus of GBRMPA, and operational or 'day-to-day management', undertaken in partnership with the Queensland Parks and Wildlife Service (QPWS).

The Wulgurukaba don't have direct authority over land, sea or marine resources in the way that (for example) the Indigenous Land Corporation or the Anangu Pitjantjatjara have over inland areas in other states, but they have the advantage of being empowered to speak on all matters concerning their own traditional estates.



From: [TRADITIONAL OWNERS \(Orig\) | Arcadia CoastCare](#)

★ Reports on Indigenous connection to Yunbenun

Magnetic Island (Yunbenun) Management Statement 2013

This Report prepared by QPWS recognises that YMI has high scenic coastal landscape values, supports a high diversity of ecosystems and plant and animal species of conservation significance. The Report recognises that Collaborative partnerships with the community and Wulgurukaba Aboriginal Traditional Owners will foster communication and cooperative management of this island. In the Management Statement, Veth and George (2004) outline the following cultural material evidence for past and continuing Aboriginal use of Magnetic Island:

- Shell middens are located within all catchments on the island.
- Pigment art is known at a number of localities both from the coast and the interior of the island.
- Quarry and knapping sites.
- Historic Aboriginal burials on the island.
- The remains of a number of stone-wall fish traps
- Small rockshelters containing cultural deposits are known from various bays and upper portions of catchments.

The majority of Aboriginal material culture sites are intact, and QPWS works closely with the Wulgurukaba people to identify and manage them appropriately. [Magnetic Island \(Yunbenun\) Management Statement 2013](#)

The State of Sea Country Wulgurukaba report 2021

This Report was the first desktop assessment of biological and cultural values of Wulgurukaba Sea Country.

The Report contained recommendations around a Traditional Use of Marine Resources Agreement (TUMRA) and the need to establish Wulgurukaba Land & Sea rangers.

[\(PDF\) State of Sea Country Report- Wulgurukaba](#)

Smith, Adam & Songcuan, Al & Molinaro, Gemma & Fraser, Duane. (2021). State of Sea Country Report- Wulgurukaba.

ATSI Heritage Strategy for the Great Barrier Reef Marine Park 2019

In 2017, the Marine Park Authority undertook extensive consultation with Traditional Owners of the Reef resulting in the 2019 Aboriginal and Torres Strait Islander Heritage Strategy for the Great Barrier Reef Marine Park. The Yunbenun Land & Sea Rangers & the Wulrgurubuka traditional owners are vital to the implementation of this strategy on YMI. The report confirms that coastal development, climate change, and loss of Indigenous knowledge are considered the greatest threats to Indigenous heritage values to the Great Barrier Reef.

[Aboriginal and Torres Strait Islander Heritage Strategy | qbrmpa](#)

There are two main Aboriginal corporations, the Wulgurukaba Aboriginal Corporation (WAC) and the Wulgurukaba Yunbenun Aboriginal Corporation (WYAC). The Yunbenun Advisory Group YAG, is made up of Wulgurukaba Elders and Traditional Owners, including WAC and WYAC and Queensland Parks and Wildlife Service (QPWS).

Many traditional custodians have been working as Indigenous liaison rangers with the QPWS for almost 2 decades, but the dedicated Yunbenun land & Sea rangers have been in operation since 2021 pursuant to a Country Grant program. This project employed and trained rangers to progress Traditional Owners aspirations for a healthy country including through control of Siam weed, feral cat monitoring, fire management and maintenance of walking tracks.

This grant finishes at the end 2023 with no further funding meaning the work of the Rangers may soon cease.



Image is logo for the Yunbenun Land & Sea Rangers

[Yunbenun Land and Sea Ranger, Hayden | Department of Environment and Science, Queensland](#)

★ **Sustainability, circular economy and indigenous knowledge**

“There are valuable components of Indigenous economies that enable communities to thrive while achieving circularity. Surplus in these systems was often shared for community and natural resource regeneration.. There is much we can learn from these systems. Indigenous knowledge has exceptional potential to inform the redesign of global economic processes toward sustainability.”

From Senanayake 2006, Watene and Yap 2015, Klein 2020, Beamer et al. 2021.

[Island and Indigenous systems of circularity: how Hawai'i can inform the development of universal circular economy policy goals - Ecology & Society](#)

Having our Wulgurukaba custodians serve as guardians of the land and seas, in alignment with traditional practices, perpetuates intergenerational well-being of the land and people. This Plan was created applying sustainable development principles which leads to circular economy policies and outcomes. Indigenous knowledge is part and parcel, indeed integral to the process.

★ **Protect & Strengthen Traditional Owner Cultural Heritage**

In 2020, MICDA with MINCA obtained funding to implement the recommendations of the Magnetic Island Community Action Plan (MICAP) including the Wulgurukaba on Country. The Protect and Strengthen Traditional Owner Cultural Heritage was auspiced by MICDA on behalf of Wulgurukba Traditional Owners

This project has Traditional Owners being involved in on-country initiatives through employment of two Traditional Owner part-time coordinators and a non indigenous coordinator to facilitate the traditional custodians participation in updating and maintaining the NQDT cultural database for YMI; Reef-based monitoring activities such as

- Re-visiting and recording changes to previously monitored reef sites
- Recording the condition of local sites using GBRMPA's Eye on The Reef app.
- Monitoring turtle activities .
- Island-based citizen science activities including restoration and revegetation of local waterways in partnership with MICDA, MINCA, Arcadia Coastcare and QPWS.
- Two-way knowledge sharing and to develop a cultural heritage database – record, keep/ store oral histories, culturally significant sites and a Traditional Ecological Knowledge (TEK) base.



Photo Brian Johnson Traditional Owner working with Yunbenun Land & Sea Rangers

The Traditional Owner Coordinators work with other Wulgurukaba organisations and report to the Yunbenun Advisory Group as well as communicating with the wider Wulgurukaba community. The CAP project was completed at the end of 2023, with the end of its funding from the Great Barrier Reef Foundation (GBRF). Final report is here.

[Community Case Study - Magnetic Island](#)

The CAP coordinator arranged for 2022 NAIDOC events such as weaving workshops with local Wulgurukaba which were immensely popular. There is a need to provide ongoing support for future NAIDOC events such as weaving workshops, fishing competitions, cultural talks and guided walks.

It is vital that there is continued funding for the traditional custodians of Yunbenun to care for country.

Many of the following projects were recommended in the initial Magnetic Island Community Action Plan 2020 and the need for them to be implemented is still there.

★ **Future projects & building on current projects**

- Establishing community partnerships to promote cultural awareness and include Traditional owners in decision-making affecting YMI land and sea country.
- Exploring opportunities including funding for projects that strengthen and protect Traditional Owner cultural heritage.
- Increased recruitment of the young generation of Traditional Owners to work on Sea and Land country ranger programs.
- Working with the Magnetic Island museum to store materials and promote Traditional Owner values at the museum and to establish a storage place for Traditional Owner artifacts and information.
- Being actively involved in ecosystem rehabilitation, fauna conservation & native plant propagation & establishing a bush tucker plant nursery.
- Co-design and undertaking survey and photo monitoring and database design for protection of vulnerable sites and to consolidate existing information.
- Produce videos for the ferry and other social media material to promote and protect cultural heritage.
- Produce interpretive signs for the island using traditional language names and promoting cultural heritage information/stories.
- Interpretive training for cultural tours, interpretive signs .
- On-ground and in-water restoration and regeneration actions including measuring impact around mangroves, saltmarshes, creeks and reef health to inform management decisions and community-led on-ground actions.
- Collection and collation of seagrass extent and condition data for the entire island to guide local priorities for action to help protect local habitats and critical wildlife such as turtles and dugongs
- Develop a bush tucker garden and cultural trail/
- Enhance coastal and riparian habitat resilience for resident and migratory species such as Turtle nesting sites.
- Implement pilot coastal and riparian revegetation projects to reduce erosion, improve water quality, protect wildlife and build climate resilience.
- Continuing to build the capacity of Wulgurukaba to meet their aspirations for land and sea country management.

★ **Specific future projects include:**

★ **Wulgurukaba Forum**

The purpose of a Wulgurukaba forum is to connect, share knowledge, create pathways for employment and governance, and land and sea Country planning. A Wulgurukaba Forum will enable information to be shared about what is happening on Yunbenun and inform Wulgurukaba community members about opportunities available to work on country and in organisations such as Australian Institute of Marine Science (AIMS), Great Barrier Reef Foundation (GBRF), The Reef Authority (formerly GBRMPA), or tertiary institutions like James Cook University (JCU), CEIEHF, (ARC Centre of Excellence for Indigenous and Environmental Histories and Futures) or the Sea women of Melanesia.



Image from an NT indigenous rangers forum

A forum held on Yunbenun will give opportunities for Wulgurukaba to share their stories, knowledge, and aspirations for the future of their Country; to bring Wulgurukaba of all ages together to engage the next generation of leaders and to provide an opportunity to share ideas about positive pathways for young aboriginal people in Townsville. Young people will have positive role models and projects to focus on. Connections will be created with stronger relationships so people can work together to have Wulgurukaba engaged and empowered to manage Yunbenun in line with Wulgurukaba values.

★ **Wulgurukaba plant trail**

This has been a long wanted project by the Wulgurukaba for the foreshore parkland between Petersen Creek and Bremner Point (which have cultural significance).



Concept Painting image from Arcadia Coast care

In 2022, representatives from Wulgurukaba, Arcadia Coastcare and Council agreed on an action for a plant trail. Wulgurukaba would lead the project

Such a trail would educate and encourage use of native revegetation & native on the island, which would then reduce biosecurity impact of non-native species, restore landscapes on the islands and would likely to increase native wildlife numbers & diversity on island especially endangered species. It would share and educate about Yunbenun history, knowledge, stories and about caring for country.

[Geoffrey Bay Wulgurukaba plant trail concept plan February 2023](#)

★ **A Wulgurukuba cultural center**

There is a need for a Wulgruukuba cultural center which could be built on the land owned by the Traditional owners at Nelly Bay.

The vision for such a Cultural Centres is to showcase and celebrate the rich history, unique stories and truth telling of ATSI peoples and in particular the Traditional custodians of Yunbenun. Dedicated First Nations Cultural Centres bring communities and cultures together, foster long-term social and economic benefits by creating jobs, training and employment opportunities for First Nations Peoples.

It is envisaged that the Yunbenun First Nations Cultural Centre will be part of hubs, like Cairns and Brisbane, which connect with other First Nations communities across the state, including the network of Indigenous Art Centres and other significant sites and locations throughout Queensland. There are aspirations for such a Centre to be solar powered, waste and water efficient, carbon neutral and be constructed on sustainable principles.

The lack of any affordable or medium term accommodation on the island is the limiting step to developing further land and country employment opportunities for indigenous workforce and skills development.

Any such Cultural centre needs to include self contained or shared facility units to house Wulgurukuba people, especially young ones, needing to be trained and educated on Country.

★ **Sea Country learning for Indigenous Youth**

Australian & Torres Strait Islanders in Marine Science (ATSIMS) is a James Cook University marine science education and outreach program, connecting First Nations high school students to marine science and management learning opportunities led by industry experts. There have been opportunities identified for ATSIMS students to come onto Yunbenun Country for learning about caring for country.

High school students from Palm Island & Townsville with Wulgrukaba family connections can come to Yunbenun to work on projects like, fish counts, the turtle hospital, experience in Reef health surveys with cross pollination on current local school programs around water quality and creeks. This t allows for sea country experiences for indigenous youth, with workshops, education, including on Orpheus island research station. The current GRBPA Reef Guardian program doesn't focus exclusively on indigenous children. <https://www.jcu.edu.au/atsims>



Image from ATSIMS website.

★ **To Sum up and what is needed.**

Funding is needed for all the projects but the first priority project is funding for the Yunbeun Land & Sea rangers, which finishes at the end of 2023, notwithstanding acknowledgement by all stakeholders as to the value of their work to date.

Another example of community engagement was when the Townsville's Enkindle Village School held a cultural, environmental and fire awareness and education day in partnership with QPWS and Yunbenun Land and Sea Rangers on Magnetic Island

There has been community engagement and support for the Rangers and good media around them. Some examples are in this links

[The history of Yunbenun - ABC \(none\) - Australian Broadcasting Corporation](#)
[Indigenous rangers working to preserve Magnetic Island - ABC News](#)

The Yunbenun land and sea rangers have deep community & stakeholder connections, have received training in drone, scientific monitoring, diving and boating, with such training having little longevity, if the Rangers cannot operate on Yunbenun any longer.



Photo of QPWS Wulgurukaba ranger Alex Winn & Kenneth Newman taken from Bulletin article. [Enkindle Village School Townsville visits Horseshoe Bay Rural Fire Brigade](#)

Funding to allow this vital collaboration and two way knowledge sharing between indigenous traditional custodians and land care organisations like QPWS is essential for the care, preservation and enhancement of Magnetic Island world heritage Values, which includes cultural values.

7. Tourism Magnetic Island (TMI)



YMI has been a tourist destination since the turn of the the 20th Century

★ **Aims and Aspirations**

MICDA's aim is to ensure that Magnetic Island is a world leading tourist destination that is sustainable, through land and reef stewardship, carbon neutral and that the quality of life of our community and the cultural identity of our Island home is strengthened. This aim is consistent with those of stakeholders like Tourism Magnetic Island (TMI inc), Townsville Enterprise Limited (TEL) and other Working Groups. There are multiple synergies and interactions between these stakeholders and those Working groups who collaborate with and work with Island businesses and visitors to the Island. Many volunteers and members of MICDA are members of Tourism Magnetic Island, or are business or tourism operators or work in or earn an income, either directly or indirectly in those industries.

[MICDA web site: sustainable tourism](#)

★ **Why is Tourism so important to Magnetic Island ?**

Being located on the World Heritage Listed Great Barrier Reef and with its unique land and sea world heritage values, together with its European history of being a tourist destination, means that tourism is the main economic driver on YMI, bringing in around \$330 million to the regional economy.

This gives an imperative to economic support from the mainland, and all levels of Government. This imperative to provide comprehensive support is not reflected in reality.

Based on figures in the 2023 Tourism Master Plan,

- Visitor numbers of 290,000 (as of 2019) increase the island's resident population of about 2,400 by about an average of 5,576, totalling around 7,976 people on YMI on average.
- Visitor numbers are not distributed evenly, but fluctuate over the peak tourism periods.
- Projections are for an increase in visitor numbers by 98,259 over the 10 years from 2022 (from 299,796 visitors to 398,055) around 25 %
- The expected increase is around 107,560, adding about 7,654 visitors on an average to the resident population (assuming NO increase in the 2400 resident population).
- This could result in about 10,054 people on YMI on any given day.

These visitor numbers and visitor numbers peaks and relative troughs, may place a burden on YMI infrastructure, like its water, waste, energy, transport, health & creates a demand on limited resources, well beyond its resident population.

★ Magnetic Island (Yunbenun) 2023 Tourism Master Plan



The development of the Magnetic Island (Yunbenun) 2023 Tourism Master Plan was funded by the Queensland Government and managed by Townsville Enterprise Limited (TEL) with input and guidance by a Steering Committee, which included MICDA and the coordinator. The Vision of this Tourism Master plan " *is to be a world leading sustainable island destination inspiring land and reef stewardship that enhances the quality of life of our community and strengthens the cultural identity of our island home. " by ensuring growth of the visitor economy is appropriately managed to conserve the significant landscape, environmental and cultural values of Magnetic Island and the GBRWHA."*

The Tourism Master Plan aims for YMI to

- be a sustainable tourism destination (inspiring land and reef stewardship that enhances the quality of life of our community and strengthens the cultural identity of YMI),
- with sustainable environmental management; a sustainable transport network;
- sustainable tourism practices;
- a visitor economy that is resilient and sustainable, with sustainable tourism businesses (that will attract and satisfy target markets and maximise social, economic and cultural benefits to the community);
- new and improved infrastructure that is sustainable, adapts to the circular economy, meets the discharge standards for the Great Barrier Reef to support projected visitor growth and is in keeping with design standards developed for the island.

Ref 1: Magnetic Island Tourism Masterplan.

These aims and strategy accords with the overall aims & strategies of this project, each Working Group & fits with community aspirations and sentiments.

[Sustainable Tourism : web page TAB draft](#)

★ **Tourism Magnetic Island (TMI)**

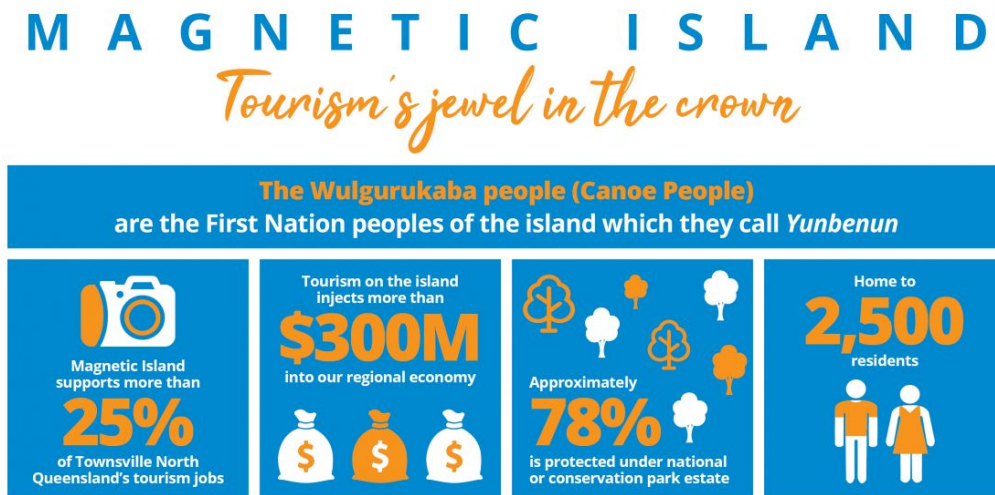


TMI is a not for profit association established in 2011, originally known as Tourism Operators & Business Magnetic Island and is recognised by government & TEL (Tourism Enterprise Ltd) as the tourism & businesses representative for the island.

At the start of this project, Tourism Magnetic Island Inc, or TMI had not operated for a few years and was considering winding up. After establishing a new tourism/business working group which included members of the Tourism business, it became clear that the focus should be to re-establish TMI. With a behind the scenes support by the coordinator, the motion to wind it up TMI at the March 2023 AGM was defeated. TMI has again become the lobby group for tourism and business for the island. MICDA is a member of TMI and works with TMI in a collaborative fashion with all of the Working Groups, and many members of TMI are also members of those working groups.

★Magnetic Island Tourism Alliance (MITA)

The Magnetic Island Tourism Alliance (MITA) was implemented via the Tourism Master Plan. MITA was formed to bring together relevant government agencies, stakeholders and industry representatives to drive sustainable tourism development and an enhanced visitor experience on YMI. TMI, the Traditional Custodians and MICDA are designated members of MITA.



Themes & Projects in the YMI Tourism Masterplan relevant to this Plan

★Design and coordinate the development of and environmental stewardship programs.

Projects are already being carried out on YMI, such as Citizen Science Programs, beach clean ups and the Pub Talk program. It is important for TMI and MITA to have working relationships with the WG to help facilitate and implement such projects.

★YMI Future Visitor Stewardship Program: ‘YMI Future’ Destination Stewardship Program. These can include:-

- Coral garden weeding, coral regeneration, Larval re-seeding/ Seagrass Restoration projects. These projects can also be supported by volunteers & local tourism operators/tourists which also ties into education and information.
- Program to encourage Visitors and Residents on the island to engage in a Guardianship Program and Projects relating to Island Sustainability.
- Creation of interactive information screens at the ferry terminal, web-based information and/or mobile phone applications for free download with a focus of thoughtful tourism, protection of environmental land and sea values and an education focus around the island’s world heritage values.
- Creation of interactive information, signs on the island on walking trails, bush tucker trails and nature trails such as the Arcadia coast care walk.

★Sustainable transport network & Magnetic Island Walking and Cycling Trail Network:

Transition to a zero-carbon bus /ferry fleet, transition rental fleets to electric vehicles, promote dock free e-scooters and e-assist bikes reduce the demand for travel by car. Having a comprehensive walking and cycle trail on YMI. All these projects are consistent with MITAG aims who aim to work with TMI/MITA.

★Develop Magnetic Island Specific Design Standards:

Design standards which include the integration of sustainability and climate resilience considerations. This is consistent with the Decarbonisation Report 2020 recommendation 3. Create sustainable housing design and/or planning codes that are consistent with recommendations of the Planning group.

★Quality Accommodation.

This could focus on transitioning tourism businesses to reduce waste and be powered by renewable energy. Both ZWMI and TRMI aim to work with businesses one on one with practical advice, help and support around eco-accreditation.

★ Digital and mobile infrastructure improvement

YMI is poorly served with broadband connectivity. YMI has no NBN fixed line connections and has a mix of legacy Telstra ADSL connected by radio link back to the mainland, very variable 4G mobile connection for mobiles and home connectivity, NBN satellite and some recent Starlink satellite connections. None of these services provide a comparable service to NBN fixed line services or a optical fibre connection from YMI to the Mainland, in terms of speed, latency or reliability.

The result is poor and unreliable internet services to YMI affecting every business, visitor and resident. Outages and bad connections create issues with customer communications, financial transactions, working remotely, business communications and tourism satisfaction. During busy periods, download speeds often plummet to being unworkable. YMI simply needs funding to have top quality 1st world internet.

★ Revise the Magnetic Island Infrastructure Strategy

Explore and consider opportunities for new and improved infrastructure that is sustainable, adapts to the circular economy, meets the discharge standards for the Great Barrier Reef to support projected visitor growth.

Funding for the Water WG project for water quality testing aligns well with this Tourism Master Plan theme, as just one example of projects recommended in this Report.

★ Carrying Capacity Assessment

Delivery of a whole island assessment of the carrying capacity is recommended around infrastructure and environment to understand future management requirements. Tourism Carrying Capacity" is defined by the World Tourism Organization as "*The maximum number of people that may visit a tourist destination at the same time, without causing destruction of the physical, economic, socio-cultural environment and an unacceptable decrease in the quality of visitors' satisfaction*".

The current planning zones for the Island allow up to 7,000 (on some estimates 22,000) residents if all freehold and non-protected land was developed to their zoning limits. The Tourism plan predicts increasing visitor numbers from 290,000 to about 400,000 within 10 years. There is no data as to the carrying capacity of YMI. Finding the right balance between economic benefits and environmental costs is essential for a sustainable tourism industry by ensuring that tourist numbers do not exceed the carrying capacity of the island.

The Tourism Master Plan identifies MICDA as the stakeholder to commission such a Report and funding for this is recommended.

The Tourism Master plan also recommends looking at options for infrastructure funding with suggestions around increasing revenue through other mechanisms like visitor levies. A levy can provide the necessary funding to ensure the long-term sustainability of the island. An alternative is to investigate a cap on visitor numbers. These options ought to be further examined.

★ **Wulgurukaba tourism: Support Traditional Owners to determine their tourism aspirations and opportunities for cultural tourism business development.**

Projects such as the Wulgurukaba cultural centre and the Geoffrey Bay trail should be funded and these projects also align well with this recommendation of the Tourism Master Plan for YMI.

★ **Regenerative Tourism**



Fig x, Image from *Regenerative tourism: moving beyond sustainable and responsible tourism* Last updated: 02 May 2022

<https://www.cbi.eu/sites/default/files/pdf/research/1968.pdf>

Sustainable tourism was adopted as an approach to minimising the negative impacts of travel. This philosophy, championed by the UN Environment Program and the UN World Tourism Organization, has a focus on containment rather than transformation.

Moving on from Sustainable tourism, is regenerative tourism, defined as a sustainable way of travelling and discovering new places, with the main goal being for visitors to have a positive impact on their holiday destination, leaving it in a better condition than how they found it. The concept goes beyond “sustaining” the environment, and aims to actively revitalise and regenerate it. By using local knowledge and local suppliers it can also strengthen local economies

[Regenerative tourism: moving beyond sustainable and responsible tourism | CBI](#)).

A Regenerative Tourism framework on YMI could be created via the emerging relationships between TMI, MITA, and YMI community via the whole island structure and its working groups.

Such a framework creates stimulating collaboration and partnerships between a broad range of island stakeholders including government, the private sector, island associations and our community. The benefit of this framework lies in the fact that our community, which is impacted by the presence of visitors, is able to be taken into account in any Tourism related development or venture. Importantly, this framework allows for greater involvement from our indigenous Wulgurukuba communities.

It is clear that the YMI Tourism master Plan and the future of tourism on Magnetic Island are or ought to be adopting Regenerative Tourism principles, which is a form of a circular economy.

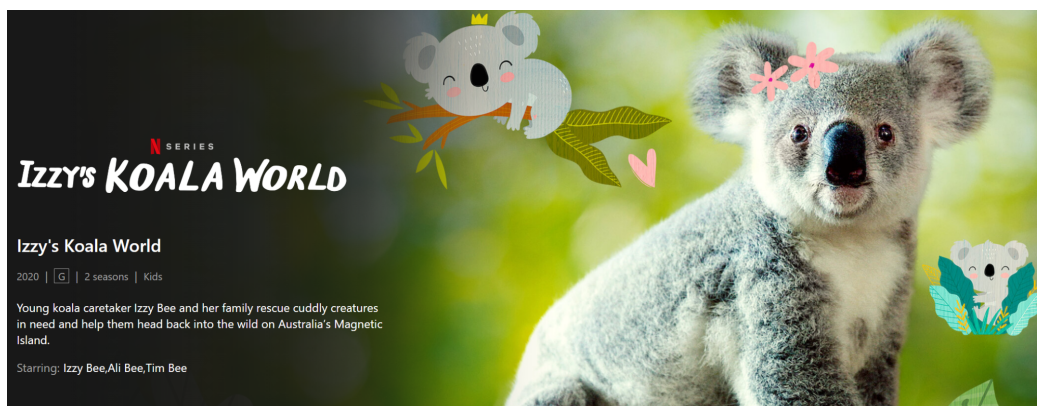


Image from Izzy's Koala World Netflix show.

One great initiative on Magnetic Island exemplifying regenerative tourism, are the plans for a new Koala and other native animal, wildlife hospital facility on the island. The facility would include training areas, a cafe, a theater, and would provide an educational and tourist experience where visitors can learn about YMI wildlife, observe koalas and other animals in close proximity. Such a Centre needs a significant injection of capital funds. The Tourism Master plan identifies YMI's pristine and healthy koala population which is the largest in Northern Queensland as a premier drawcard to the island.

[Watch Izzy's Koala World | Netflix Official Site](#)

★ To Sum it Up & what do we want ?

- Funding for Wulgurukaba activities that focus on cultural heritage, sea and landscapes of our world heritage values and biodiversity which can have a beneficial effect on visitors. YMI island ecosystems will benefit from an improved level of management of natural resources and biodiversity, which protects fragile landscapes and wildlife.
- Funding for TMI events & marketing. TMI is focusing on creating events and festivals held during the off peak seasons, to spread the visitor load on YMI more evenly across a year, and this may reduce the need for additional infrastructure by maximising YMI's current assets. TMI needs creative marketing expertise and events coordination, with island focussed and based paid positions, as island businesses and tourism operators are time poor.
- Funding for Visitor information desk. TMI are currently working on a volunteer based visitor information desk trial which is successful, might be worthwhile expanding into a funded permanent fixture at the Nelly Bay ferry terminal area.
- Funding for comprehensive assessment into YMI's carrying capacity.

8. Yunbenun Magnetic Island Sustainable Planning Group



★The Working Group

This group was established in 2023 and is composed of Magnetic Island community members that have a strong interest in the current and future sustainable strategic development planning requirements for the Magnetic Island community. The members of the group have various qualifications and expertise in the fields of Government policy, Town Planning, architecture, ecology and land management, and includes the presidents of the 3 major associations on the island, Magnetic Island Residents and Ratepayers association (MIRRA), Magnetic Island Nature Care Association (MINCA) Magnetic Island Community Development association (MICDA) and Arcadia Coast Care. [MICDA web site: YSPG](#)

★Sustainable Planning: Aims

The group's focus is land use around YMI now and in the future and how best to preserve and enhance the natural landscape, the village atmosphere and create a sustainable human community.

The intent is to preserve the island's World heritage values and the iconic national marine parks around the island, balancing our human community needs and the imperative to reduce GHG emissions. The group works in partnership with the whole community, other community associations, relevant stakeholders and provides opportunities for community consultation.

★How does the Planning group work ?

The group meets around once a month and some of those meetings involve members of Council's planning team who have been open and collaborative in their approach and information sharing. At this point, the group has not carried out any community engagement.

As a new group, the focus has been on its establishment and obtaining volunteers to become part of this working group and establishing good relationships with stakeholders. Community engagement in the form of information sessions with community groups, internet based information etc is a project for the group in the near future. As planning is a complex issue, community engagement needs to be carefully prepared and presented



Social media inviting community members to be part of this WG

★ **What is Sustainable Planning ?**

Magnetic Island, a residential offshore continental island with its unique World Heritage profile, has unique planning needs. The current Townsville City Plan considers sustainable environmental planning in Overlays for Coastal environment, cultural heritage, natural assets, water resource catchment.

Ref 20: Detailed information as to what is Sustainable Planning see Appendix

Environmental assets are protected by the Commonwealth and State legislation. None of those protections or considerations focus solely on YMI. There is no specific overlay to identify and map the scope of the vulnerable World Heritage Values of Magnetic Island.

The Group considers that the protection of the island’s world heritage values is an overarching sustainable planning consideration and environmental sustainability themes must be applied to as part of planning principles, including using the precautionary approach. The precautionary principle states that if a product, an action, or a policy has a suspected risk of causing harm to the public or to the environment, protective action should be supported before there is complete scientific proof of a risk.

Planning needs to be for future generations on YMI not for short term infrastructure and development outcomes. Planning should consider individual or precinct/ village planning decisions and policies, which have cumulative impacts on the natural environment, sustainability and impacts on services or carrying capacity.



The Group seeks to ensure that stakeholders focus on these outcomes.

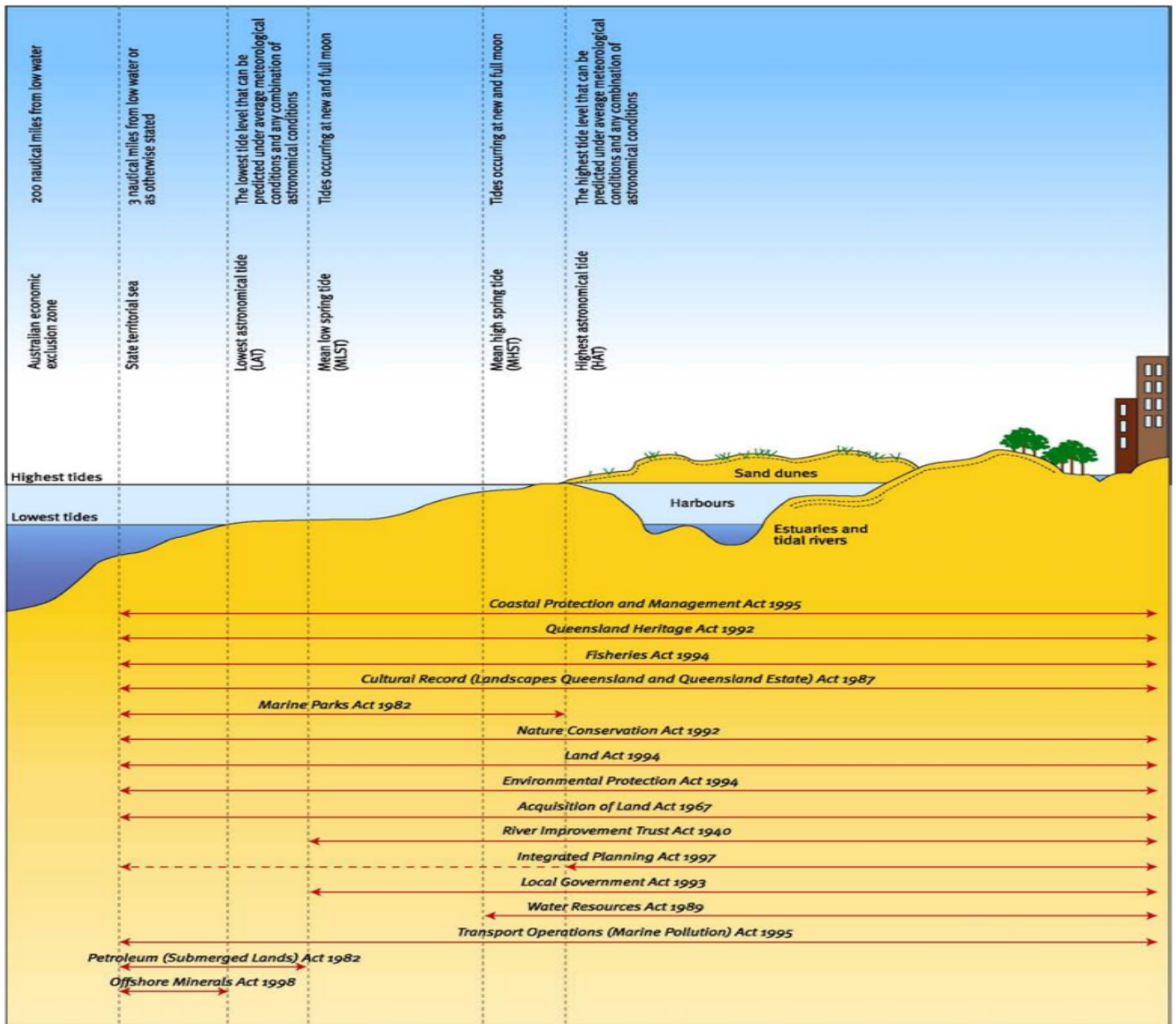
★ **Why does this Group need to act ?**

YMI has significant and specific management needs, exacerbated by climate change, showing the importance of risk assessment, and a need for adaptation. Because the island is within the Townsville Local Government Area, the Townsville City Plan is the planning instrument which can best integrate climate change considerations in all aspects of planning, management, and monitoring of YMI.

The City planning instrument operates within a State statutory planning framework, and is not responsive to urban planning needs of a landscape in a World Heritage area. YMI’s entire coastline has all levels of government and statutory instruments around its use and protection. These need to be considered in all aspects of planning in a proactive rather than reactive manner. The State Government has jurisdiction for the protected areas on Magnetic Island. The protected areas of the island represent around 75% of its land mass and most of the boundaries of the protected areas are alongside urban environments and this interplay and interconnectedness between urban /human use and protected natural zones is evident in every bay, and every street of the island.

A collaborative approach with Council especially in planning which essentially manages all development and infrastructure on the island, is essential to the protection of the island’s world heritage values.

The protection of the Island's world heritage values is a necessity for the Local Government Authority planning process to consider and then to apply the Federal Government's EPBC Act Policy statement 5.1 which is specific to Magnetic Island, and incorporates the World Heritage Values of Magnetic Island on the scale of the Great Barrier Reef World Heritage Area.



Source: *The State of the Environment Queensland 2003* (EPA, 2003a).

★ **What is the EPBC policy statement ?**

The Environment Protection and Biodiversity Conservation Act 1999, (EPBC Act) is Australia's main environmental law, giving a legal framework to protect and manage unique plants, animals, habitats and places.

YMI is not one of Australia's 20 properties on the World Heritage List but Magnetic Island is the ONLY place and community with its own specific EPBC Policy 5.1 Region Magnetic Island (2010). This Policy states that Magnetic Island is within the Great Barrier Reef World Heritage Area and is surrounded by the Great Barrier Reef Marine Park.

[Magnetic Island, Queensland Region EPBC Act policy statement 5.1](#)

The policy states (page 14) that "World heritage properties are places with natural or cultural heritage values that are recognised to have outstanding universal value. The Great Barrier Reef World Heritage Area (GBRWHA), which includes Magnetic Island, is listed as a world heritage property. The values of the GBRWHA incorporate EPBC Act-listed threatened species and ecological communities."

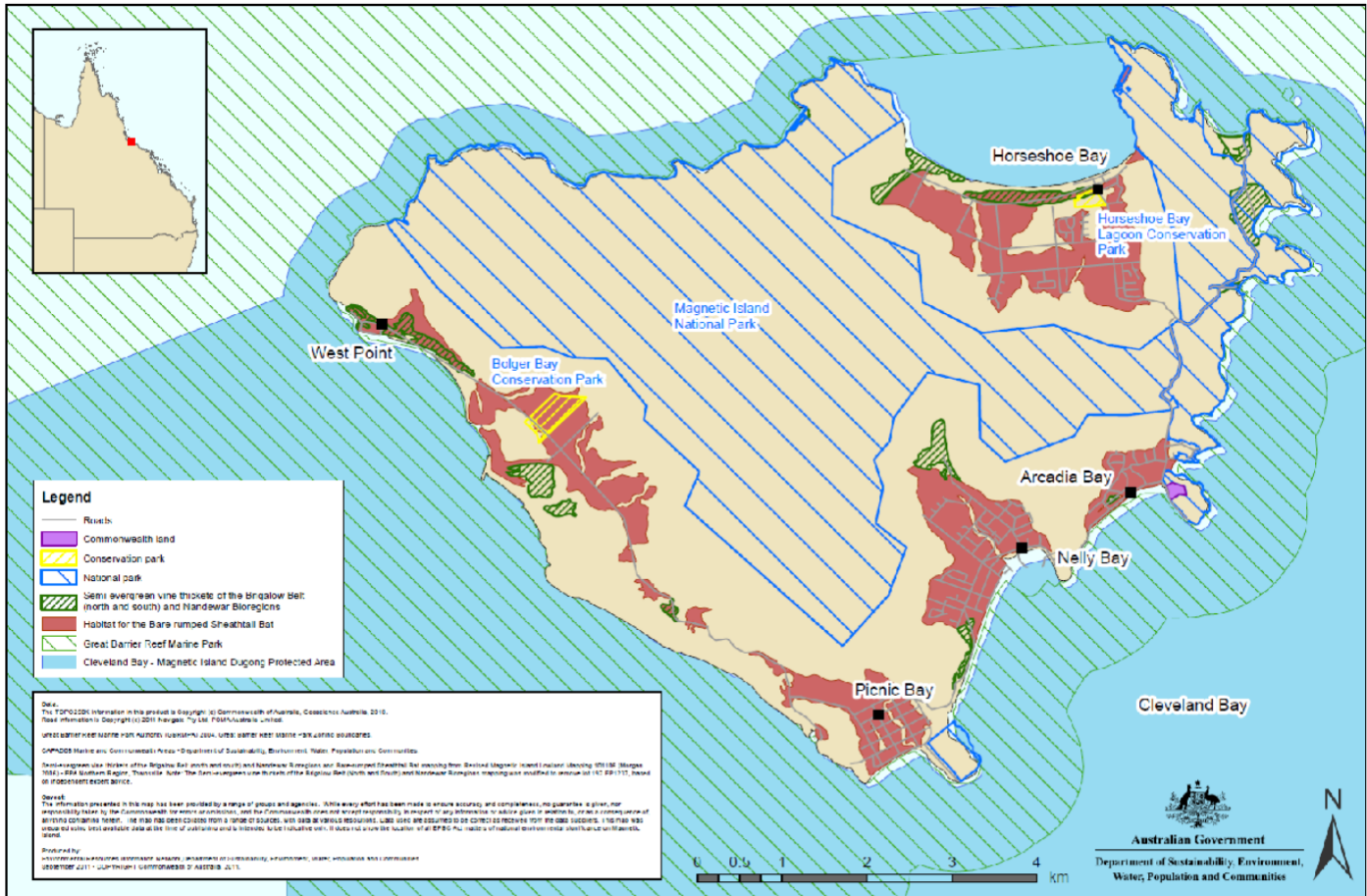
★ EPBC Policy issues

The Group is addressing, as far as possible, issues identified by the Federal Government in the EPBC Act Policy statement 5.1. Magnetic Island is experiencing significant development pressures. Much of this pressure is centred on the lowland and coastal areas of the island. Key threats include:

- habitat degradation and fragmentation
- land clearing
- poor water quality (for example, elevated nutrients and sediment concentrations from land-based erosion, dredging, run-off and waste discharge)
- marine debris and litter
- introduction of exotic plants and animals, and
- increased human presence (for example, disturbance of sea turtle and bird nesting sites through noise, direct harassment, inappropriate lighting and increasing vessel traffic).

The Group liaises with stakeholders, especially Council to have the island's world heritage values, village environment, carbon reduction strategies and sustainable planning needs and aims, included in any planning law review with a specific focus of YMI's unique topography, geology and proximity to marine and land national parks & conservation zones.

The objectives of the Federal EPBC Policy for YMI must be kept in mind and be incorporated in any planning or development on Magnetic Island.



Map from the EPBC policy 5.1 : Magnetic Island protected areas and habitat distribution.

★ **Current Planning Projects : Review of the Townsville Council City Plan**

The Townsville City Council City Plan was developed in accordance with the Planning Act 2016 and Planning Regulation 2017 and adopted in October 2014 with a 10 year operational life. Townsville City Plan sets out the vision for how Townsville should grow over the next 25 years and is Council's key document for determining development applications.

The City Plan and the LGA Infrastructure Plan (LGIP) are being reviewed as part of its 10 year statutory review process and this is due for completion in October 2024. According to the State Planning requirement, that review must take into account "community aspirations."

This group is working with Townsville Council as part of that review process in so far as Magnetic Island is concerned with an aim of making submissions and commentary on the various stages of the review process which are currently taking place. Other reviews taking place are the Townsville Council Growth strategy in 2025 where issues of Magnetic Island Local area planning can be considered as part of that package.

★★Magnetic Island Local Area Plan

The group recommends that any review of the City Plan and future review of Council planning laws, must ensure that YMI has its own local area plan.



Photo of YSPG meeting with Council

In approving the draft 2005 City Plan, the then Minister for Environment, Local Government and Planning, and Women, the Hon Desley Boyle MP, required that a Local Area Plan (LAP) be developed for Magnetic Island (District Code 8). This code, although not perfect, had a specific planning scheme just for YMI which was and still is appropriate. The Division 8 Plan included Precinct Development Outcomes and Desired Environmental Outcomes. This Plan seemed to be based on the earlier 1989 YMI Management Plan which addressed environmental conditions, existing development and use of the island, infrastructure and community services, and development constraints and opportunities. This overarching view and detailed planning is not contained, as far as YMI is concerned, in the current City Plan.

With Council's development of the Land Use Proposal (2011-2036), MICDA was advised that Council would include a LAP for YMI by early 2013. Despite community agitation and submissions made at that time, a Magnetic Island Local Area Plan was not created when the current City Plan for Townsville was handed down in 2014.

★Why is there a need for a Local Area Plan for Magnetic Island

The current City Plan for Townsville places YMI as a suburb of Townsville with development assessed according to generic criteria as a whole. It certainly does not suit the topography of Magnetic Island which contains:

- Urban development focused on a narrow coastline which is limited to about 25% of the island land which is not in protected areas;
- Urban development within 100 or so metres of a conservation area (a National Park or Queensland Parks & Wildlife park), a waterway, or a coast line which fringes the Great Barrier Reef Marine Park.
- A variety of differing use, within close proximity of each other, including residential, commercial, industrial, service, marine infrastructure like wharves, marinas and jetties, waste & water treatment and transfer stations, all within 4 small villages with populations of about 800 or so.



Ref Map is from *From Magnetic Island Catchment story: land use on YMI*
<https://qgsp.maps.arcgis.com/apps/MapJournal/index.html?appid=db22f5427e284c0f99379a470b3f72f8>

The Townsville City planning framework is managed through precincts, not local area planning and the group feels that is not the correct approach for YMI because :

- Using Precincts as specific locations in a zone as a management instrument leads to fragmentation. Using individual precincts to reflect the individual character of each bay of YMI does not meet the holistic planning needs of the island. YMI is different to other Townsville suburbs.
- Magnetic Island World Heritage values are not recognized holistically unless in a YMI Local Area Plan and cannot be done effectively on a precinct basis.
- A Local Area Plan for YMI enables specific planning outcomes for the island to be more clearly identified. Colocation of urban development in this WH environment warrants a tailored and discrete approach to local area planning.
- YMI needs a holistic approach tailored to the specific needs of an island community which has world heritage values, in a manner that is sustainable for now and generations to come, both socially, environmentally, and economically.

It is relevant that a master planning approach has been taken in other Queensland Local Government Areas in response to comparable key drivers like in YMI, namely an economic perspective, and a unique environmental setting with a need for proactive management of ecological processes, such as Spit [Gold Coast], released 2019, and Gumpi (Dunwich) [Stradbroke Island] (draft plan currently under review)

Long term Objectives:

★ Develop Sustainable housing policies and codes for YMI

The Decarbonisation Report 2020, Recommendation 3 is to Create sustainable housing design and/or planning codes within council areas. There is currently no sustainable housing design or planning codes within the council area, hence a broader plan will increase housing standards and ensure new investment is made taking into consideration energy efficient building and design practices.

★ Monitoring and responding to development applications and broader government development actions

This is an ongoing task involving both monitoring and action and needs to become one of this working group's core functions, by working with the current Heritage and Infrastructure Policy group (HIP) within MICDA. It is here that the shortcomings of the EPBC Policy 5.1 are relevant. The island's World Heritage Values are central to any consideration of these proposals. Current developments that have generated community concern and action

- disposal of Department of Defence land on Bremner Point Arcadia
- permit proposal for an additional jet ski operator for more island bays, still under consideration by GBRMPA.
- port expansion/channel dredging
- TEL implementation of the YMI Tourism Plan, which can have major impact on the island

The task of monitoring and responding to development applications and legislative reforms, an ongoing process. In order for the Group to consider reviewing any development application, it must be selective and are only at issue if there are demonstrable significant impacts.

★ **Lack of Short Term Accommodation for residents**

The MI Tourism Masterplan states that as of July 2022, there were 392 listings and occupancy were around 82% of private short-term holiday rentals on the Island (e.g. Airbnb). The use of residential properties for 'tourism' purposes places additional strain on local government infrastructure and community services. Families have had to leave the island due to lack of rental properties, which in turn, has impacted on funding for the local school. There are difficulties finding workers for the island, due to lack of such accommodation.

Given the high number of short term rental accommodation properties on Magnetic Island, the Tourism Master plan has recommended regulating the use of residential properties for tourism purposes. One suggestion in that plan is to levy differential rates, with a higher rate applying to those properties used for tourism purposes. Another is to regulate such use by licensing, and/or to place conditions and restrictions on such use from a planning or building viewpoint.

★ **Crisis and Emergency Response**

There is currently no public cyclone shelter, place of refuge or evacuation centre on YMI Island and the need for an island facility has repeatedly been identified by the YMI community. The disaster management plan for the Townsville Region includes actions for YMI and the Council, however there is no stand-alone evacuation or disaster management plan for the island. The need was also referred to in the 2023 Magnetic Island Tourism Master Plan.

YMI needs the proposed facility due to increasing risks around natural disasters (cyclones, storm surge, flood landslide and bushfire) with access to services on the mainland via marine transport not available during natural disasters.

There are currently no suitable facilities available on the island to disseminate information community-wide or provide safe refuge during a disaster. Funding is needed for this facility. [MICDA report by HIP 2022](#)

★ **Research, advocacy and lobbying around legislative & Policy issues**

There is an ongoing need for targeted research into government initiatives in the pipeline which may impact on Magnetic Island. Of particular significance is regional (landscape) planning which is a corollary of the federal environment development of new environment legislation and State bioregional planning. Biosecurity measures are a priority given the importance of island remnant ecosystems, both within the national park and in the lowlands.

There is a lack of consideration of cumulative impacts on development and land & fringing seas use on YMI. Cumulative impacts incorporated in any strategic assessment will help identify, plan for and manage existing and emerging risks to the Great Barrier Reef World Heritage Area and adjacent coastal zones on YMI, ensuring the ongoing protection and management of the area's unique environmental values.

Further research into these policies and their implementation may enable this Working group to develop a case to the federal law reform task force that cumulative impact assessments be included in any legislative/policy statement for YMI. This is to avoid the 'death by 1000 cuts', a phrase often used by environmental advocates which can characterize over development, and seen in tourist destinations both overseas and in Australia. This may be a risk to YMI and was addressed in the Tourism Master plan, noting that tourism is increasing.

★ **To sum up, what does this group need ?**

Funding for a paid facilitator, to support the Group.

There is an enormous amount of time, expertise and work required to fully research, understand and provide feedback to the group and the broader community, on planning issues. Planning issues are inherently complex. Volunteers simply don't have the capacity to dedicate such time and effort to such complex issues hence the need for a paid facilitator for this working group.

9. Marine Action Magnetic Island



★ Working Group

MAMI was established in August 2023 and is composed of community members interested in or with expertise in marine science and related issues. The group uses action and education to protect the sustainability and health of the waters surrounding Magnetic Island, which are part of the Great Barrier Reef World Heritage Area and the Great Barrier Reef Marine Park. The group works in partnership with stakeholders, other island associations such as Magnetic Island Nature Care Association, (MINCA) Arcadia Coast Care, Magnetic Island Network for Turtles, (MINT) and the whole community.

[MICDA web site: Marine](#)

★ Aims & how the Group works

The group aims to protect a marine environment for residents and visitors to enjoy, now and in the future, and to reduce and minimise our impact on the Island's World Heritage values and its unique natural marine environments. MAMI aims to ensure that any use of our marine environment is as sustainable, resource efficient and as carbon neutral as possible. MAMI aims to be proactive as well as reactive, engaging in policy and legislative reform initiatives via the group's expert & lay membership.

It is anticipated that the Ecosystems Monitoring will be incorporated into this Marine Group, in so far as their marine related projects are concerned. Community engagement, information & education around marine issues for visitors and residents, internet based information etc are projects for the group in the future.

★ **Why does the Marine Group need to act ?**

There are a plethora of laws, government and other agencies which oversee, control and protect the marine environment and coastlines around YMI. The Marine group aims to work with stakeholders to allow policies & actions around those threats which impact or are carried out on YMI are island appropriate, community supported and more importantly, holistic. The Group's current and proposed projects take into account the threats and actions that are relevant to YMI and identified in the Reef 2050 Report and the last 2019 Outlook report.

YMI is part of the Great Barrier Reef Marine park which itself is part of the Great Barrier Reef World Heritage area. Magnetic Island's entire coastline has all levels of government and statutory instruments around its use and protection. These need to be considered in all aspects of use of our marine environment, in a proactive rather than reactive manner.

The Great Barrier Reef Marine Park Authority (GRMPA) (now known as the Reef Authority) has long recognised the important of Magnetic Island as part of the World Heritage listed Great Barrier Reef stating in their last 2019 Outlook report that "*The principal residential islands include Palm Island and Magnetic Island, with stable populations of about 2400 and 2300, respectively. Islands of the Reef form part of the property's outstanding universal value.*"

The protection of the Island's world heritage values is a necessity for any activities or use of the marine environment and for stakeholders to consider and apply the Federal Government's EPBC Act Policy statement 5.1 which is specific to Magnetic Island, and incorporates the World Heritage Values of Magnetic Island on the scale of the Great Barrier Reef World Heritage Area.

The EPBC appendix 5.1 Policy statement for Magnetic Island provides for protection of the island's world heritage values in specific marine locations which include:

- Uninterrupted vistas and high aesthetic amenity (such as in Geoffrey Bay, the 5 Bays, Arthur, Florence, etc
- EPBC Act listed ecosystems including mangroves and seagrass
- EPBC Act listed species including sawfish, dugongs, green, hawksbill and flatback turtles and migratory Shorebirds
- coral reefs -high density coral fringing

- Wulgurukaba indigenous coastal and seascapes and values.

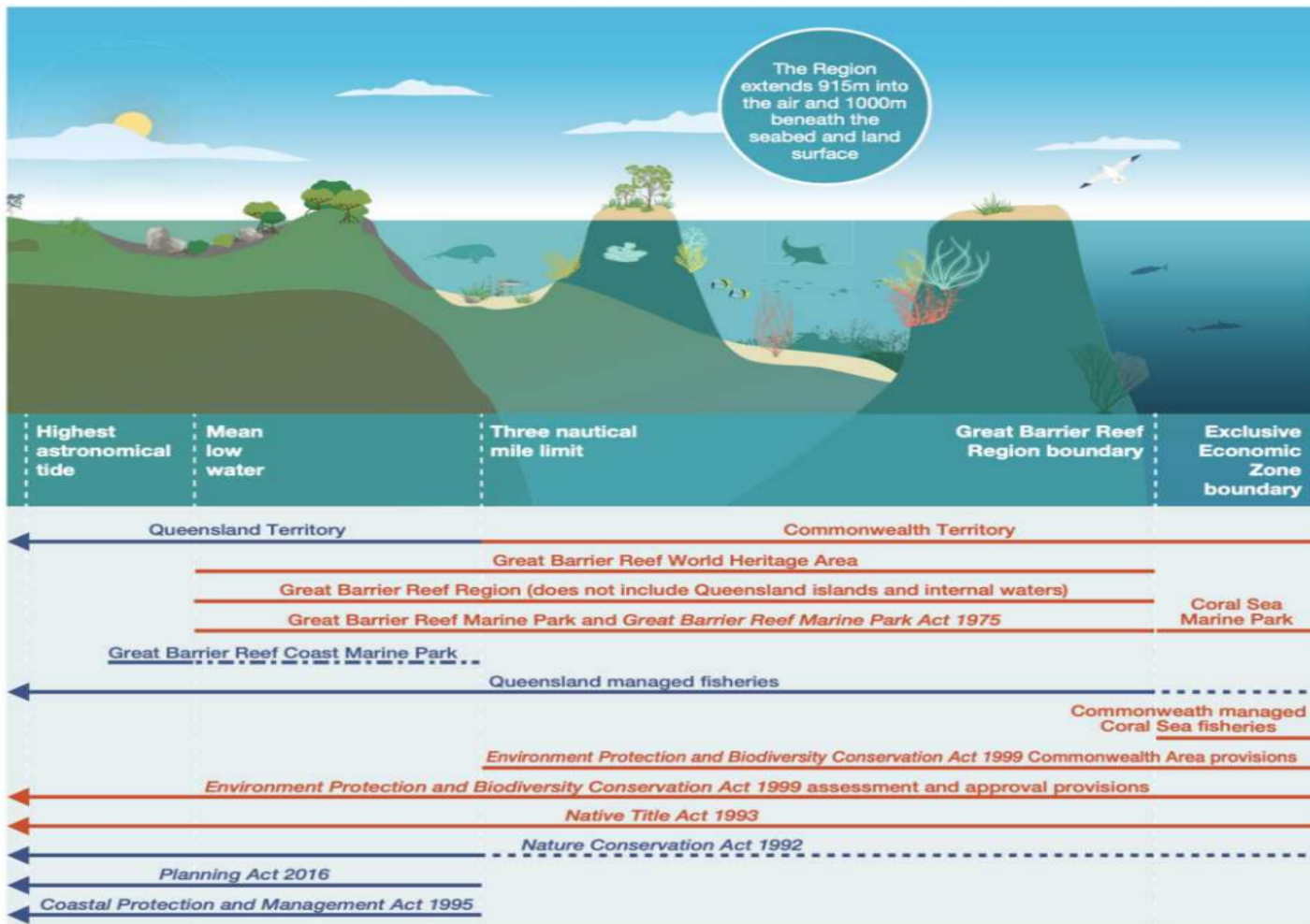


Figure 22. Map of jurisdictional boundaries of management authorities (from GBRMPA 2019).

A healthy marine environment, especially coral reefs are an important resource in small tropical islands like YMI. Reefs play a significant role in supplying sediment to island shores and in dissipating wave energy, thus reducing potential foreshore erosion. YMI's fringing reefs provide habitat for a host of marine species underpinning beach and reef-based tourism and economic activity. Coral reefs, mangroves and seagrass environments are vital ecosystems as hosts for marine species, playing a significant role in the well-being of any island communities like YMI and in natural coastal protection from erosion and storm events.

★ **The Reef 2050 Plan & Great Barrier Reef Outlook Report 2019**

The Federal Reef 2050 Plan is Australia’s overarching long-term strategy for protecting and managing the Reef. The last GBRMPA Outlook report was in 2019 and is the third comprehensive report in the series.

It confirms that the Great Barrier Reef Region still faces significant pressures ranging in scale from local to global. The report finds the greatest threat to the Reef is still climate change. The other main threats are associated with coastal development, land-based run-off, and direct human use (such as illegal fishing).

[Outlook Report 2019 | gbrmpa](#)

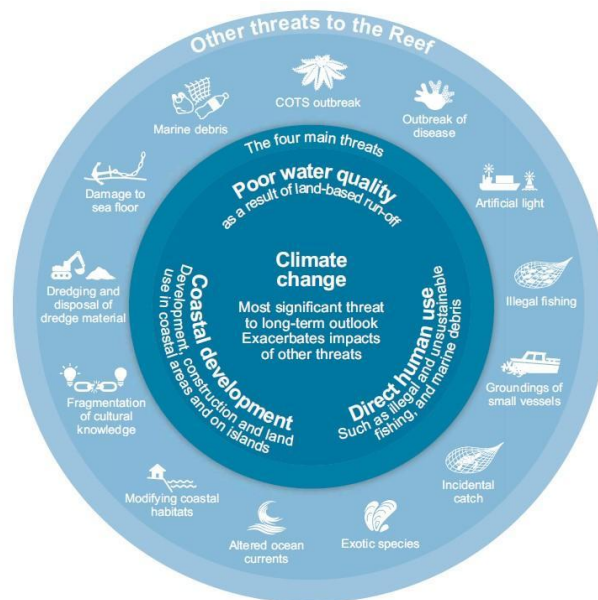


Image from [Reef 2050 Plan | gbrmpa](#)

Climate change is the biggest threat to the health of the marine environment on YMI. Coral bleaching, ocean acidification, poor water quality due to land-based pollution, marine pests, overfishing and illegal fishing, coastal development, all damage and continue to damage YMI marine ecosystems. Impacts of increasing temperatures are many, such as on turtle hatchlings, as YMI is a turtle nesting site. Climate change is causing feminisation of green turtles, which may impact on future populations.

Coastal inundation is the largest climate related threat to the land component of YMI, including rising sea levels, increasing intensity in storm surges, coastal erosion and increased flooding during storm events. The majority of the island’s infrastructure is located along the coastlines and bays are more likely to be cut off. Climate change is likely to increase the severity of these extreme events.

Flooding and stormwater during extreme weather events, impact the island's fringing reefs.

The Marine Group has put together a number of projects & themes, which seek to address the impacts and threats to the health and sustainability of our marine environment, and the initial projects include :-

★ **Monitoring and responding to proposals which impact on YMI marine Environment**

MICDA instigated the Reef Community Action Plan in 2021 and commissioned Sea Research to resurvey all the old monitoring sites surveyed between 1989 and 2006. It was envisaged that this would give some indication of the long-term changes experienced by YMI fringing reefs over a 33 year period. That report will help in future monitoring, restoration and regenerative actions on the coral reefs that surround the Island. There is a great video about this report. [Coral surveys on Magnetic Island reefs: Long-term monitoring on the inshore Great Barrier Reef](#)

Ref 21: Link to the Report: Magnetic Island Long-Term Coral Monitoring

Current marine issues the Group is looking include:-

- Proposed disposal of Defence land at Bremner Point & Alma Bay stormwater works
- Permit proposal for an additional jet ski operator for more island bays, still under consideration by GBRMPA.
- Port expansion/channel dredging
- The Reef Authority's Management Plan for Magnetic Island
- Cumulative impacts
- Tourism Master Plan

Both monitoring and action needs to become one of this working group's core functions and the island's World Heritage Values are central to any consideration of these proposals. The task of monitoring and responding to Marine Park permit applications, development proposals on coastlines especially near Green Zones on YMI, and legislative reforms, is an endless and ongoing process.

★ **Bremner Point**

More than an acre of land owned by Defence in Geoffrey Bay, in an relatively undeveloped headland called Bremner Point, have been marked for public sale and development.

The site lies along a protected Marine Green Zone and a protected fringing reef with a heritage listed and protected shipwreck called the Moltke.



Four former Defence Force holiday units and more than an acre of land in Geoffrey Bay, Magnetic Island are up for sale.

Geoffrey Bay is particularly significant as this is where local scientists discovered that coral spawning was a predictable event covering the whole Great Barrier Reef. There are no sewer or stormwater lines to the development sites which run alongside the marine green zone. The marine group has concerns that the adjacent Green zone will be affected by run off due to future development and impact on the visual amenity of the protected marine area. The presence of domestic cats in this area, may impact on marine and rock wallaby species due to toxoplasmosis, found in cat litter and faeces. Bremner Point holds cultural significance to the Wulgurukaba.

★ Arcadia Stormwater works

The Marine group is supporting the actions of Arcadia Coastcare about recent Council works redirecting urban stormwater into Alma Bay, which is a Green Zone and the most popular swimming beach on the island, which also has protected fringing reefs. Recent Council works are diverting the nearby urban catchment into Alma Creek and Bay, with concerns around slowing or treating this extra stormwater run-off. Concerns include:

- Increased flows may erode known turtle nesting habitat at the creek mouth
- Urban stormwater flowing into Alma Bay will degrade water quality in the island's most popular swimming beach and Marine National Park green zone



Photo Turtle nesting site at Alma Bay in front of the Surf Club

These works may impact on the water quality around Geoffrey Bay when the 2nd stage of these stormwater diversion works are undertaken and the Group will need to monitor and work with stakeholders around this threat at that Bay as well.

★ **Jet Skis and other commercial permits in the Marine Park**

The Reef Authority must advertise and engage in public consultation for any new permits or extended application for permits for commercial or tourist operations within YMI waters. The group considers the Reef Authority ought to include renewal of current permits, in that public consultation process. This will allow the YMI community to provide comprehensive and proper feedback, as to how those permitted activities have been carried out in reality within YMI waters. The Group aims to monitor, investigate and engage in on the ground community consultation with individual members including businesses, and if needed, lodge submissions, as part of the public consultation process for such permits.

★ **Port expansion/channel dredging**

Dredging the shipping channels which lie off YMI is a long standing and ongoing issue. Dredging results in large amounts of suspended sediment affecting the reefs on the island.

Large boat propellers on container ships, barges etc suspended sediment, exacerbating the smothering effects associated with increased suspended sediment loads settling on to coral reefs.



The Group continues to have concerns around the dredging process, aiming to work with community organisations like MINCA, or MICDA and Ports Townsville.

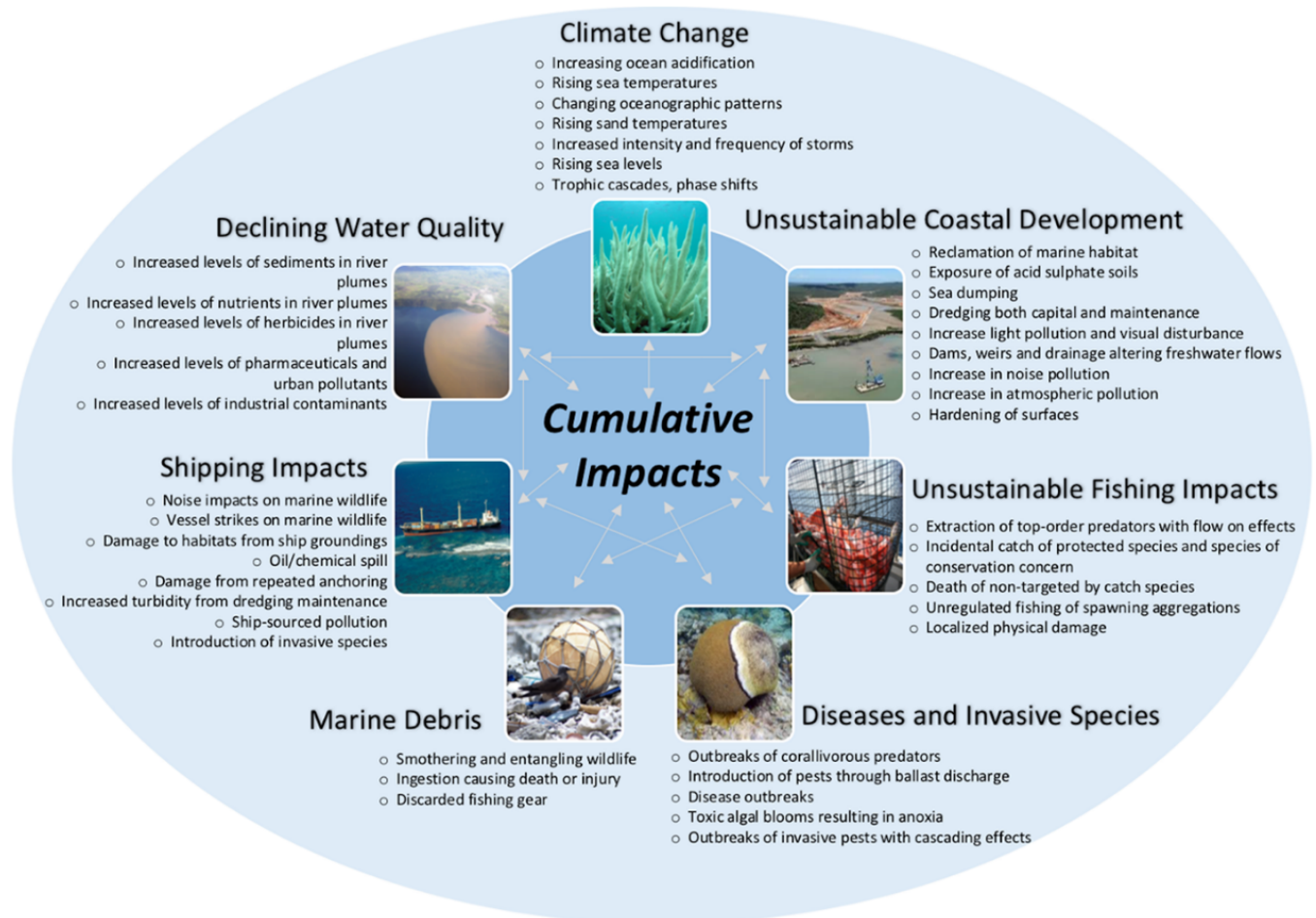
★ **The Reef Authority's Management Plan for Magnetic Island**

The Reef Authority is reviewing the Southern Reefs Management plans in 2023 as part of its larger overall review of all Great Barrier Reef Management Plans. At the moment, apart from zoning maps, there is no dedicated Magnetic Island Management Plan. It is understood that the Reef Authority will be looking at YMI in the next 2 years. Issues such as Green Zones, moorings, reef protection zones, reef markers, recreational use like spear fishing or jet skis, will be considered. The group is keen to be part of this process and inform the Reef Authority through community consultation..

★ **Cumulative impacts of marine use and development on YMI**

The cumulative environmental impact of actions is pivotal to Magnetic Island World Heritage Values. While there is a Cumulative Impacts Management Policy developed by the Queensland Government and Australian Government, working with the towards the Reef 2050 Long-Term Sustainability Plan (the Reef 2050 plan), it may be that this policy is inadequate when it comes to the Reef Authority acting or assessing proposed, current and continuing permits for activities impacting on YMI waters and marine environment. Moreover, there is no public consultation process for any permits being renewed thus, additional permits and uses can be exponentially increased, without taking into account the cumulative impacts.

The Group considers that the Reef Authority needs to engage in a targeted and comprehensive cumulative impact assessment for all of YMI bays, coastlines, mangroves and outer wetlands, in the form of a statutory Strategic Assessment, looking at past, present and future impacts (development should be the focus), in the context of preserving YMI's World Heritage Values.



Ref 22 Image from Biodiversity of the Great Barrier Reef

Development by development seems to be the approach taken by the Reef Authority when it considers and reviews developments, marine park use and permits, particularly in YMI bays. An approach like that to marine use on YMI may well lead to degradation of the world heritage status of the island's marine ecosystems and scenic values, if the sum of developments is not considered over adequate spatial and temporal scales. The Group seeks to review and make submissions around this policy issue to relevant levels of Government.

★ Master Tourism Plan and tourist management

YMI is experiencing an unmanaged and increase in tourism visitation often into the sensitive marine environment. Current impacts include:

- Trampling of the coral reef ecosystem during low tides due to reef walking, or snorkelers standing on or kicking coral
- Damage to coral reefs by recreational & commercial boating and other marine devices such as jet skis.
- Lack of knowledge or disregard of marine zones, illegal fishing.
- Plastic, especially single use plastic, fishing lines.
- Trampling of the pneumatophore root systems of the mangrove stands and seagrass beds which support nursery grounds, like endangered sawfish.
- Extensive disruption of migratory shore birds in their critical resting and feeding habitat.

Some of the marine projects seek to address these challenges such as the Safe Snorkelling Guide, the Geoffrey Bay access point, Marine Zone information packages and Visitor guides.

[Magnetic Island Tourism Masterplan](#)

★ Other MAMI projects: Fringing Reef Protection around YMI

Snorkel and Trail Guide

The current Snorkelling Trail Guide currently in circulation on YMI which focuses on the 2 tourist snorkel trails at Nelly Bay and at Geoffrey Bay but it does not incorporate all the bays, nor does it cover in detail, safe snorkeling practice, safe access points for snorkeling or diving, or contains pointers to obviate damage to marine ecosystems. The Group intends to create a grading system for snorkeling on the reefs around YMI and an updated hard copy Guide and/or video, for distribution to tourist operators, snorkel gear/dive shops hire. Funding is needed to research, design, create and distribute the Guide, and to create web based content, in consultation with TMI.

[Magnetic Island Snorkel Trails](#)

Geoffrey Bay Boat ramp

The old boat ramp is used by divers and snorkelers to access the adjacent Green zone, Geoffrey Bay and is slippery and difficult to use, often causing injury to users.

The ramp is still used by the Magnetic Island Ferries (the barge) in the event that the Nelly Bay marina with its barge entry point is unavailable (say after a cyclone). Accessing the snorkel trail via the beach at Geoffrey Bay rather than the ramp, may not be ideal as it involves walking over coral; dangerous animals like stonefish and cones; disturbing the mangrove nursery and distance. TMI has advocated for and the Marine group supports this for an easily accessible, safe and usable accessway for recreational water users to enter Geoffrey Bay.

There are a number of stakeholders such as Council, Magnetic Island ferries, the Dept of Environment and Science, and the Reef Authority all of whom have an interest in and varying levels of responsibility for this area. This makes this project complicated. Funding would be needed for design and installation for an access point safer and less likely to result in damage to people or the marine environment.

★ Marine protection: Illegal fishing & Compliance and Information about zoning in a clear easy way that is focused on YMI.

The Great Barrier Reef Outlook Report 2019 identified that fishing continues to negatively affect the health and resilience of the Reef. No-take (green) zones have healthier ecosystems with less coral disease, fewer outbreaks of crown-of-thorns starfish, and fish and coral communities recover faster following impacts from cyclones and coral bleaching. No-take zones can contribute significantly to populations of species such as coral trout in areas that are open to fishing, through the export of larvae. Illegal fishing in no-take zones can have flow-on effects on the future sustainability of marine species.

The current Reef Authority signs at Geoffrey Bay (GB) and especially the snorkel trail points are almost impossible to read or interpret with no information about safe snorkeling/reef protection. Other GBRMPA signage and information about zoning, and marine use on YMI are currently inadequate and difficult to interpret. There is no specific social media targeted at YMI residents or visitors about zoning or marine use or the value of Green Zones.

The group seeks to change behaviours around marine zones, such as it being socially unacceptable to fish in a green zone and the reasons behind the marine protection and zoning system.

The group sees a need to inform visitors who arrive on the island or at spots around the island about fishing/protecting the Reef. The group proposes to create a map of solely of YMI with clearly defined marine zones and symbols, available on line and provided at ferry and barge points in Townville & the Nelly Bay terminal.

Funding is needed for the design and implementation of the maps, & social media.



A Green Zone is a 'no-take' area and extractive activities like fishing or collecting are not allowed without a permit.

★ **Guide/E book on scientific and marine info for YMI:** A 'virtual library' of source material specifically focused on YMI. This includes a current Fish Guide project. There is a lot of knowledge and information created by scientists and community members focussed on the YMI environment which is on line, readily available or not even known about. The Group sees such a library as being a free and publicly available resource.

★ **Coastal restoration :** Projects which might be considered as partnership or supporting not for profit associations such as Envite, might include CoastSnap' which is a global citizen science project to capture changing coastlines. This data assists scientists to understand and forecast how coastlines change.

★ **Protection of flora and fauna:** Restore and protect turtle nesting sites and dune habitats is a proposed partnership to conduct small-scale research programs looking at the correlation between beach vegetation and nesting/hatching success. This data will be used to develop a land management tool to generate management strategies for revegetation.

This will help inform on-ground revegetation works which complement current restoration activities to help reduce sediment loads impacting surrounding seagrass, mangrove and fringing reef communities and increase disaster resilience against climate related change.

★ **Marine Safety: Jet ski usage/safety concerns**

There have been concerns raised around jet skis travelling at speed or in a risky manner in marine zones and popular snorkelling areas. The Group seeks to develop social media and address policy around this risk to visitor and marine users safety.

★ **Ecosystems projects which the Group would like to continue & support.**

Funding is needed to continue such projects like the Maggie Mangroovers, Pub talks, and Under Alma Citizen science projects, the Yunebun Fish Guide and Targeted Community Beach Clean-ups. The beach clean ups can gather ghost nets and marine debris which can be used by the Zero Waste YMI group.

★ **To sum up & what this Group needs.**

Human activities have a negative impact on many of the world's oceans, jeopardising marine life, habitats, and ecosystems, which led to the creation of marine protected areas (MPAs). The general public uses MPAs for recreation such as fishing, kayaking, sailing, boat tours, snorkeling, or wildlife viewing. Commercial fishermen rely on the waters and the marine life in them for their livelihood. Scientists and researchers use marine protected areas to study marine life and habitats. MPAs are "living laboratories" for scientists and researchers.

This group wants to ensure that the waters around YMI which are within marine protected areas (MPA), function now and in the future, as intended.

Funding is needed:-

- To research, design, create and install YMI focused Marine zoning signs and maps, social media and visual media such as videos, directed at residents, businesses and visitors and to create web based content which is supplemented by hard copy signs and posters.
- To create a YMI focused E-Library as a free and publicly available resource.
- Upgraded snorkel guide & Fish Guide.
- Safer entry to Geoffrey Bay snorkel trail : upgrade or bypass the current old boat ramp.
- Funding for Eco Monitoring and Eco Engagement projects identified.



- A paid facilitator, to support the Group. There is an enormous amount of time, expertise and work needed to monitor and research, understand and provide feedback to the group and the broader community, on marine issues including policy and legislative reform and help with submissions around issues of concern.

Whilst stakeholders like Council and GRMPA etc have jurisdiction over the coast and marine areas of YMI, they often operate at a regional level and broad policy levels. Stakeholders are often unaware or fail to consider the World heritage values of the island and its marine environment nor work with each other in a holistic fashion.

The Marine Group was created as a result of these deficiencies so as to have a focussed island based group with a vested interest, expertise and knowledge, working with stakeholders to ensure that their decisions, policies and activities in and around YMI are created and implemented in a holistic fashion. The group wants to ensure that account is taken of the needs and aspirations of the island community and the World Heritage Values marine environment.

The Marine Group recognizes the strong and integral connection to the sea country and the Wulgurukaba traditional custodians.

[\(PDF\) State of Sea Country Report- Wulgurukaba](#)

Indigenous values around sea country resonate with the aims and aspirations of the Marine Group. Echoing the words of Rodney Dillon, ATSIIC Land and Sea Commissioner, in 2001

“Fundamental to the way we interact with the sea is our belief that we are a part of the sea, and the sea is a part of us, always has been and always will be. This belief is maintained through our stories passed down from one generation to the next.

This intimate attachment to the sea affects the way we interact with it. We never abuse it by unnecessarily taking or destroying the creatures and plants that live in it. It is sufficient for us to only take what is needed to feed our families, and share or exchange with neighbouring groups. Our traditions strongly discourage individual greed and the treatment of nature with disrespect.”

10. Magnetic Island Health Working Group (WIHWG)



★The Working Group

The Magnetic Island Health Working Group is composed of members of the YMI community. The Group is working with Townsville Health Service, the Magnetic Island Health Clinic, YMI Care, the GP clinic and other relevant stakeholders to ensure that residents living on Magnetic Island have access to health services that are equal in standard to those enjoyed by those on the mainland.

The group works in partnership with the whole community, the Local Magnetic Island Community Advisory Network (CAN) and relevant stakeholders.

[Health | micda.com.au](http://micda.com.au)

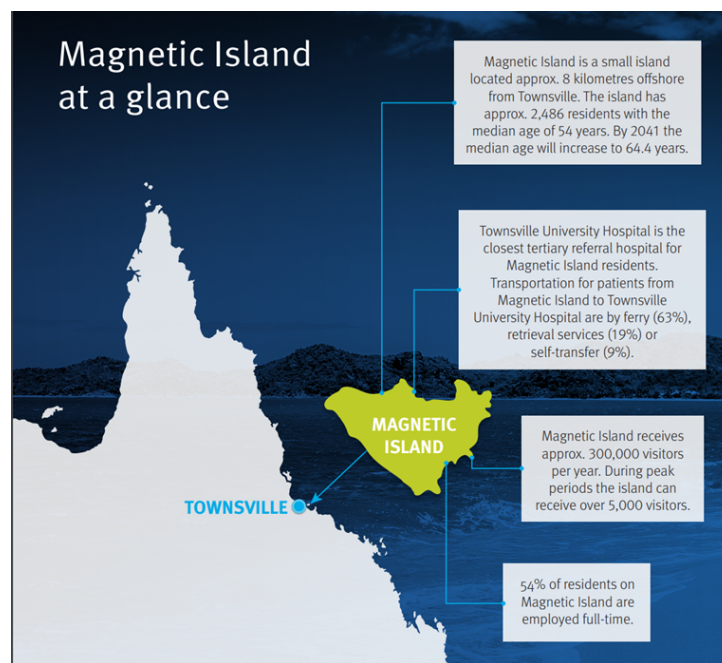
★Objectives

The group will work to help implement the 2023 Magnetic Island Health Services Plan (The Plan).

The Plan will be reviewed by the working group from time to time to ensure it continues to meet the needs of YMI residents and advocate for changes to the Plan to be incorporated in any future Health initiatives or provision of services.

★ **The Health Masterplan & this working group**

A health working group was established by MICDA in 2018 in response to concerns raised by MICDA members regarding staffing and resource issues at the Island Emergency Clinic; the private GP service and the general (at the time) shortage of doctors on the island; and on Island servicing of Palliative Care health needs. Advocacy with Townsville Hospital Health Service (THHS) led to the establishment of a Magnetic Island CAN (Consumer Advisory Network).



From: Magnetic Island (Yunbenun) Health Service Strategy
[Magnetic Island Yunbenun Health Service Strategy 2023-2033](#)

In 2021, THHS invited the YMI community to express interest in being members of this new CAN, and the Magnetic Island CAN was established. Being an official THHS CAN means that the island community now has a voice in the current and future development of THHS service delivery. While the MICAN includes some MICDA members, they contribute to the CAN as individuals and not as MICDA representatives.

The Magnetic Island Health Services Plan (The Health Plan) was handed down in July 2023, after Townsville Hospital and Health Services (THHS) worked with the island community via THHS Community Advisory Committee and Board, and the local Magnetic Island CAN (detailed above), service providers and community associations.

The purpose of The Health Plan is to provide direction for the delivery of primary healthcare services on Magnetic Island over the next 10 years.

★ **Why both the CAN & the Magnetic Island Health working group?**

Magnetic Island CAN (Consumer Advisory Network) CAN's role is to advise Townsville Hospital and Health Services THSS about their delivery of acute services and in case of the local CAN, to deliver such services to Magnetic Island. Their role is limited in scope. The CAN is only one key stakeholder of the bigger Health picture for the Island.

The group is interested in a broader Health Services for the YMI, which includes non-acute services. This group collaborates with all key stakeholders and works with the CAN and with the Federal Government through its Primary Healthcare Network and the Private Providerl. Without the constraints of the CAN's terms of reference / code of conduct, the Health WG can advocate and lobby independently of any government service or levels of government.

Consultation on Australia's first National Health and Climate Strategy commenced in 2023 on having our health system meet the challenges of climate change. The World Health Organization has described climate change as the greatest threat to global health this century.

There is a focus on how the health system can adapt to a changing climate, and to reduce emissions. The group addresses, as part of any policy & implementation actions, the impacts of climate change on health. More frequent and intense weather events caused by climate change can lead to more emergency room visits, hospitalisations and deaths.

[National Health and Climate Strategy - Consultation - Australian Government Department of Health - Citizen Space](#)

★ **Magnetic Island's Health services: at a glance.**

The Health Plan finds that YMI has an aging population, with a median age of 58 years, significantly above the state (38.4 years) and national (38.4 years) median ages.

An aging population, such as that on Magnetic Island, requires specific intervention to support the health and independence of the community. Nursing services on the island are an issue as there is currently no funding for post surgery care or palliative care on Magnetic Island.

Townsville Hospital Service has indicated that they are not in a position to fund YMI as it is considered Remote, but YMI is not classified as remote by the Federal government which is why the GPs find it challenging to bulk bill any more on Magnetic Island. YMI is classified as MM 5 under the Modified Monash Model (MM), which is based on the Australian Statistical Geography Standard - Remoteness Areas (ASGS-RA), with MM 1 being a major city and MM 7 very remote. State funded services say we are remote although the federal funded people are saying we are not remote. The YMI classification ought to be MM6 which will increase funding and GP bulk billing on YMI.

This working group supports and intends to assist with the direction and implementation of recommendations from the Magnetic Island Health Services Plan (The Plan), some of which are as follows.

★ **MIHWG current projects and themes : New Magnetic Island Health Clinic**

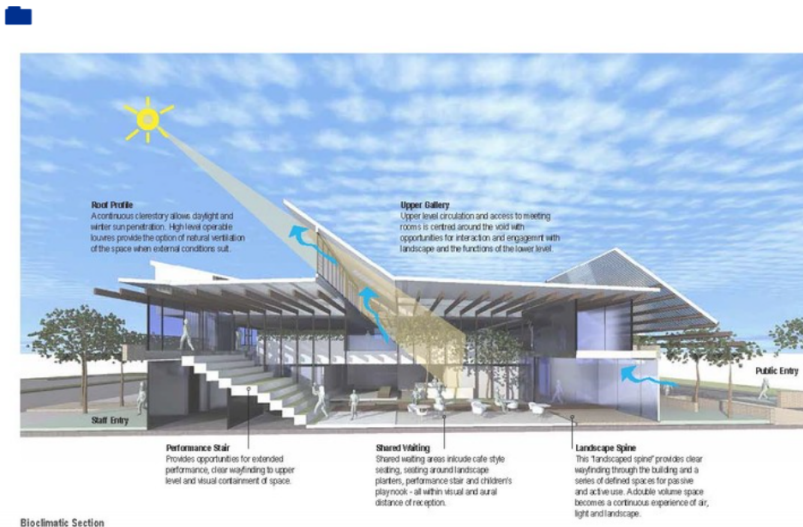
Magnetic Island Primary Health Care Centre (MIHS) was built in the 1970's and is no longer fit for purpose. There is a need for new infrastructure that meets the needs of the community, and becoming a co-location facility for all services. There is currently a lack of capacity in the clinic to care for and maintain patients for long periods of time including overnight, and to negate the need of transfer by ferry or helicopter to the mainland. There is also a perceived lack of access to emergency medical care on the Island.

Any new health clinic would need additional qualified staff on call to better support patients staying overnight if needed whilst waiting for daylight transfer with a high proportion of Rural and Isolated Practice Endorsed nurses. A new MIHS would enhance services, providing options to reduce the high transfer rates, consultation rooms for visiting services and facilities which allow the delivery of procedural services locally. There is a need to include more holding beds, x-ray facilities and additional consultation rooms.

★ **New Green Health Clinic**

There is a need for any new health facility on Magnetic Island to provide safe and quality care in the context of climate change and sustainability.

Energy efficiency – high efficiency lighting; sensor lighting to utility zones; high efficiency double glazing; and louvre windows controlled through a roof mounted weather station to purge warm/cold air and integrated through the heating and cooling system to isolate areas when windows are open.



Bioclimatic Section

Water efficiency – rainwater harvesting, 80,000 litre water storage tanks and re-use for toilet flushing and irrigation. Sustainable transport solutions – cycling facilities for staff and building users including secure bike parking, and showers and lockers. Renewable Energy Technologies – solar hot water heating; and a 25kw photovoltaic solar energy system.

From: Ballarat Community Health Primary Care Centre / DesignInc

[WHO GUIDANCE FOR CLIMATE-RESILIENT AND ENVIRONMENTALLY SUSTAINABLE HEALTH CARE FACILITIES](#)

★ **Internet and telecommunications issues.**

The 2021 Northern Queensland Region HWNA identifies 'patchy internet bandwidth and telephone services' as the primary cause of health practitioner dissatisfaction with telehealth. The Island has very poor internet services, with regular telephone outages and internet speed.

Lack of good communications hampers the development of services on the island and presents a safety risk for those patients located in a black spot and unable to contact emergency services. Telehealth services cannot be provided in a reliable, regular or comprehensive fashion. There is a dire need for better internet services on Magnetic Island.

The current YMI Medical Clinic relies on paper based information and there is a need for accurate and timely service delivery data gathered and accessible by electronic means. Funding is recommended for an electronic records management system within the Clinic.

★ **Accessibility and Access to Health services**

YMI is accessible from Townsville Breakwater to Nelly Bay Harbour by commercial water ferry and vehicle barge in calm weather and by helicopter in rough weather. The trip is at least 2 hours each way if the ferry and bus timetables align. There is no patient travel subsidy for YMI residents to access services in Townsville as the distance is less than 50 km. Patients who need to transfer off YMI are transferred by helicopter (urgent) or by ambulance / ferry / ambulance (less urgent).

The current arrangements for an interfacility transfer involve the patient being collected from the Primary Health Care Centre and transported to the ferry terminal. At the terminal, the ambulance is met by the ambulance services from the mainland who have traveled across on the ferry. The ambulance officers swap stretchers and the patients are wheeled on to the ferry via the open walkway to the ferry. Patients remain on the stretcher in the ferry lounge area with other passengers where the stretcher is wheeled off the ferry via the open walkway and the patient loaded into the waiting ambulance.

This method of transfer has issues around privacy, timing, cost, and length of time for the transfer and its impact on the patient's health, especially social and mental. This process needs to be reviewed with Queensland Ambulance Service. Perhaps a dedicated small marine vessel is in order.

There is a need to assist YMI residents to travel to and from the mainland in order to access services, in a timely, cost effective manner that does not further impact on their mental and physical health. There are suggestions around an EV community bus service, to provide a regular transport service to and from the mainland for islanders with a need to access health and other associated services.

★ **Coordinator for Magnetic Island health**

There are no permanent and ongoing service on YMI which provides connections between individuals with their health needs and varied health services which straddle the mainland and the island such as the chemist, the hospital, mainland specialists, & allied services like radiology, physiotherapy etc.



Care coordinators help patients to co-ordinate and navigate care across the health and care system, helping patients to make the right connections, with the right teams at the right time, to provide information to people seeking answers to their questions about their conditions, and to arrange referrals, appointments and treatments in an island focussed holistic manner.

★ **Allies services Aged Care Services, Palliative Care, Mental Health and ATODS (Alcohol, Tobacco and Other Drug Services), Oncology, Maternity Midwifery and secondary care maternity services, Child Health services**

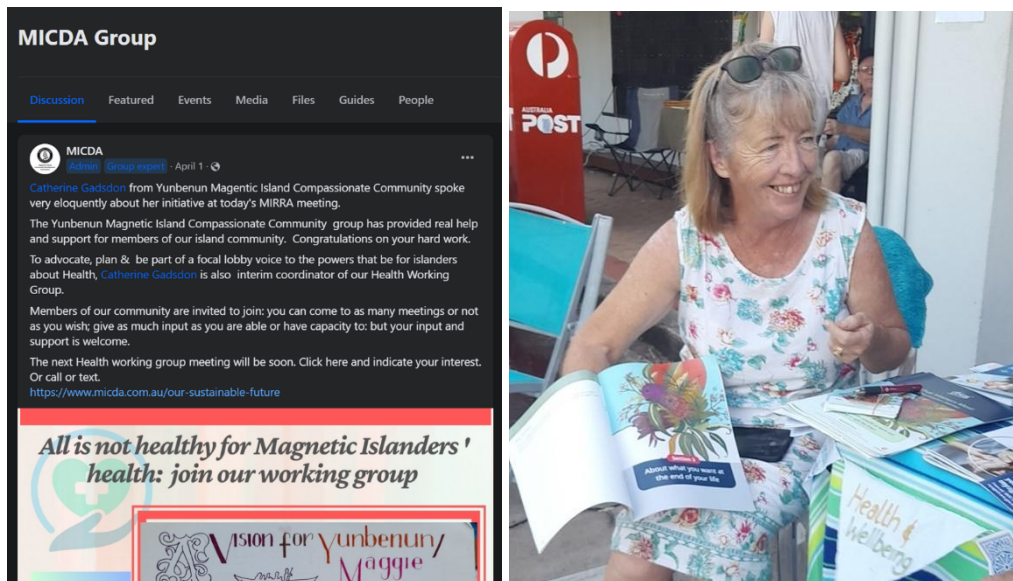
There is a lack of awareness and availability on Magnetic Island for:-

- Aged care services. There is a need for allied Health Services on the Island to be expanded and promoted, as well as specialist service offerings to support aging at home provided through virtual care and/or telehealth.
- Home visits, home care and home palliative care . There is a need to develop and implement a model to support community members to die at home where it is appropriate to do so.
- Mental health services. There is a need for specialist Mental Health/ Addiction service offerings provided through virtual care and/or telehealth.
- Oncology services : Patients have to travel often for hours to the mainland just to change their medication lines which can take minutes. There is a need to identify options for secondary oncology care provision locally and to develop a capacity to support tele-oncology consultations and reviews where appropriate.
- Midwifery and secondary care maternity service and child Health service. These are not easily accessible locally with minimal provision for enhanced maternal and child health care.

- This needs to be provided by virtual care or telehealth and to implement a sustainable model of maternal and child health specialist services locally.

★Community Engagement

The Health coordinator has presented at community associations like YMIRRA meetings, at community events like an Easter Fair, and engaged in media events, to provide information and garner support for the Health WG. There has been social media engagement seeking community members to become part of the Health .



Social Media seeking new members for the group and image of Health Coordinator at YMI Easter Fair.

The current Health working group coordinator established a compassionate community on Magnetic Island launched on Neighbour Day in March attended by 80 residents, most of which were newly arrived to the island.

The Yunbenun Maggie Compassionate Communities initiative aims to empower YMI community members to play a stronger role in the care and support of people at the end of life but also extending to those needing social or health related support. The group is working with Northern Queensland Primary Health Network (NQPHN) who are building compassionate communities in North QLD. Compassionate Communities is a globally recognised whole of community approach to improving the end-of-life experience for people by mobilising local networks, groups and services to be more conscious, aware and equipped to offer support.

★To sum up, what is needed now ?

A first priority for the Health WG is the need for a health care coordinator on Magnetic Island to work with and for both or either of the YMI Clinic, and the GP clinic. The Group has been examining and considering funding applications to enable the establishment of such a service on YMI, however such grant applications are extremely complex and require dedicated time, effort and expertise to properly research, document, and draft. There is a need for a qualified and dedicated paid facilitator and grant writer experienced in health to provide support & assistance for this working group.

The second priority is for the Health WG to lobby and pressure all levels of government and Townsville Health Service for the establishment of a new Medical clinic on YMI and to then work with them, to ensure that the facility itself is constructed on sustainable principles, aligns with community needs and expectations and will provide comprehensive health services for the island for the long term.



Conclusion

Our World Heritage Island Yunbenun /Magnetic Island plan centres around projects which each working group considers important to remediate, protect and enhance the island's world heritage values and address climate change & waste/plastic challenges. The reasoning and evidence as to why each project has been so identified, is contained in the relevant chapters for each Working group.

By having an overview of all the working groups, their projects and work, the coordinator was able to use a holistic approach to collaborate with all levels of Government and stakeholders. Having the Coordinator support and facilitate working groups helped identify commonalities, synergies, reduce overlap, promote communication, event & community engagement, between the groups and/or their members, and the wider community. Having a single coordinator facilitating ready and consistent engagement with stakeholders, rather than multiple points of contact, was vital in implementing and progressing the Strategy.

There is no hierarchy in terms of a numbered list as to what project has more priority than another; nor is there a timeline of defined projects, due to funding which is often for one project and the availability of third parties. Working groups might lead one or more projects, or support or collaborate with the relevant party leading it. All the projects require the support and backbone of the community working groups, the stakeholders and island community over the next decade. These Projects may very well change in scope, priority or needs, from time to time. There is a need for flexibility as this plan is a snapshot in time as to the current challenges facing Magnetic Island.

This report provides a broad range of projects, aims, and aspirations which are open to adaptation and change. Its structure is flexible, in order to be pragmatic to changing funding, community needs and conditions.

Diagram 1: An overview by way of visual representation of Our World heritage Island Yunbenun/Magnetic Island plan is here. [OWHI mind map final report.pdf](#)

Diagram 2: A spreadsheet summarising each Working Group project is here. Each project requires funding. Each particular Working Group has its own Chapter, with detailed reasoning behind each Project. [OWHI Yunbenun Project List final report.pdf](#)

Funding: Apart from funding needed for particular identified projects, this Report recommends funding for:

- Paid facilitators for marine, terrestrial and planning: There is an enormous amount of time, expertise and work required to fully research, understand and provide feedback to the group and the broader community, on planning, marine & terrestrial issues especially around Magnetic Island's world heritage values. Policy advocacy is inherently complex. Facilitator/s are able to carry out research, monitor planning & development applications, legislative changes and reviews, and draft submissions on relevant issues affecting YMI.
- Paid Coordinator/s: All the working groups would benefit from paid support for funding applications, coordinate projects and community engagement; stakeholder or community consultations; grant acquittals; budget; Volunteer support; data collection; document retention. Dedicated support would enable the working groups to operate viably and effectively in this space.
- Funding for Eco Engagement Facilitator: The Working groups need support to create information & education events, such as Fairs, Festivals, Pub Talks. Support is needed for web- based information and web based resource sites created and directed specifically to the community and YMI, including skilled media /communications experts to design, maintain and update web sites. For example, the Zero Waste Magnetic Island web page is an excellent resource established using funding in 2020 but the group requires support for updates. [Zero Waste Magnetic Island](#)
- Expenses around community engagement events and projects like venue hire, printing, food, have largely been funded by the volunteers or sponsors such as Sealink, or fundraising using the 10C bottle collections system. Relying on volunteers to bear most of the cost is not viable in the long term.

- Further funding for Traditional owner capacity building. It is hoped that the Wulgurukaba traditional custodians themselves, will now be in a position to lead, coordinate, and implement their own activities and projects from now on, including community engagement and events.

Capacity constraints on State & Council-provided infrastructure such as community services, roads, sewerage and lack of investment in carbon reduction initiatives which require infrastructure is a challenge facing YMI. A high level of capital is required to support many initiatives recommended in this report. Water, waste, transport, community services, energy, marine and land infrastructure may not be coping with visitor numbers or demand on the island. This investment often falls to Townsville Council with State and Federal Governments often seeing this as a residential/community need rather than a tourism created need.

Whilst the Federal Government has allocated funding for specific projects, it may not have totally taken its share of responsibility for infrastructure provision, marine and terrestrial remediation, protection and enhancement. Without specific funding to address the challenges facing YMI in terms of its land and sea values, this will and has impacted on Magnetic Island's World Heritage Values, which may affect the world heritage listing of the Great Barrier Reef.

Policy and Community Consultation

To address the challenges facing YMI, Council and stakeholders prior to creating policy, design, development or construction on major infrastructure on the island, need to enter into a collaborative and strong relationships with the community and the working groups. The working groups are a sensible and ongoing conduit to tap into community expertise, knowledge and concerns, in a proactive manner.

Where a significant stakeholder like Townsville Council, State or Federal Governments have failed to fully and properly engage with the community prior to the development of policies, the design and delivery of infrastructure projects on the island, this has resulted in actions carried out which have created tremendous community outrage, reactions and concerns. Resolution then becomes more difficult and costly. Townsville Council often works in silos so one area of Council is unaware of what another area is doing. Recent examples of this

- Stormwater works carried out at Alma Bay and the proposed sale of the Brember point land by Defence. (see tabs).
- Transport issues where stakeholders seem reluctant to fully engage with the YMI community. (see tab)

- Lack of comprehensive water quality testing around YMI, capacity issues of the wastewater treatment plant at Picnic Bay on Magnetic Island, and old septic systems still operating on YMI, which may impact on the land and marine environment. (see tab)

Quite apart from funding, there seems to be a lack of appreciation at the Federal level of Government of the need to protect Magnetic Island's world heritage values or in having all 3 levels of government work together to address challenges facing those values. There are policy and legislative challenges around protecting YMI's world heritage values, its climate resilience and future sustainability for the future.

Property managers which includes Magnetic Island groups and community members, Council, levels of government like GRMPA, need to continue working together with Traditional Owners, expert advisers and researchers, policymakers, funders, local communities and other stakeholders to integrate climate change and waste considerations in all aspects of YMI planning, management and monitoring.

It is necessary to prioritise investment for infrastructure, sustainability and circular economy initiatives which in turn, supports regenerative tourism which in turn, may preserve and regenerate the Island's world heritage values, now and in the future. Sustainability, action around man made climate change and the integration of climate resilience considerations into all infrastructure planning, implementation and policy, is also fundamental.

Our World Heritage Island Yunbenun Magnetic Island

The term "Our World Heritage Island" is good messaging and a useful term that encompasses community awareness & promotes acceptance of the fact that YMI has world heritage values. The term should be freely available to the wider community and stakeholders.

The term "Our World Heritage Island" builds on the background of work for decades by community members and associations that the island has world heritage values. The need for a coordinated management strategy has long been recognised in previous decades of community consultation and engagement.

"Community consultation undertaken as part of the development of this plan highlighted a disconnect between governance from the mainland and input from the Magnetic Island community, and a perceived piecemeal approach to planning for the whole island." Decarbonisation report EarthCheck, 2020.

"Discussions held with island residents between September and October 2020 revealed that a major issue for Magnetic Island was the lack of a unifying management plan to adequately address pressures and threats to the island's natural and cultural values." Magnetic Island Community action plan 2021

The close proximity of YMI to the mainland coastline, means that YMI is particularly important as a site for people to experience and appreciate the values of the Great Barrier Reef World Heritage Area, as well as the scenic beauty and natural amenities of the Island. There is a deep connection between social & economic factors and the world heritage values of the island.

OWHI ideally should expand to include sustainability and carbon reduction projects which coordinate with the human aspects and precious resources of the island in a holistic fashion with community support, as identified in this report.

The consequences of actions and decision-making in responding to the challenges of climate change in World Heritage properties are intergenerational, so today's managers also need to involve and consider the views and perspectives of young people and future generations in planning and climate adaptation decisions.

Magnetic Island could become a flag bearer in the region demonstrating climate change action, and in creating and implementing sustainability and circular economy initiatives. By doing so, YMI's experience in addressing such challenges could be an example & knowledge base encouraging other communities to become sustainable by effective transformation on all levels.

Our "Whole of Island" approach will hopefully enable us to speak with one voice as a community to other key stakeholders, and to work with them towards a more resilient future for Magnetic Island's community and environment. Our World Heritage Island is best protected for future generations by a united community approach that includes our natural land and sea, cultural and social values.

Appendix

Diagram 1 :

An overview by way of visual representation of Our World heritage Island Yunbenun/Magnetic Island plan is here.

📄 [OWHI mind map final report.pdf](#)

Diagram 2:

A spreadsheet summarising each Working Group projects is here Diagram 2. Each project requires funding. Each particular Working Group has its own Chapter, with detailed reasoning behind each Project.

📄 [OWHI Yunbenun Project List final report.pdf](#)

Ref 1 : Magnetic Island Tourism Masterplan 2023 TEL

<https://www.townsvilleenterprise.com.au/tourism/magnetic-island-masterplan/>

Ref 2: Our World Heritage Values : List of Reports

2001 Community Action Plan : Peter Kenyon: [2001 MI Community Action Plan Peter Kenyon.doc](#)

2005 Kenchington & Heger report stated: [WHV report 2005.pdf](#)

2013 Economic Development Authority report

2020 Sustainability Decarbonisation Audit report

[decarbonisation report 12.2020 MI.pdf](#)

2021 Community Action Plan: Yunbenun/Magnetic Island

[Video of CAP workshop 11.2020](#)

2023 Tourism Master Plan

[Magnetic Island 2030 Tourism Masterplan Final.pdf](#)

Updated World Heritage Values Report being created by MINCA and to be completed by the end of 2023

<http://www.minca.org/world-heritage-values-of-magnetic-island.html>

Ref 3: Method- *Framework for sustainable island community development from: Tonković, Željka & Zlatar Gamberožić, Jelena. (2014). Sustainable Development in Island Communities: The Case Study of Postira. European Countryside. 6. 254-269. 10.2478/euco-2014-0014.*

[\(PDF\) Sustainable Development in Island Communities: The Case .](#)

Ref 4: *Image from Example of Ridge-to-reef interrelated protection services delivered by ecosystems on small islands. From IPCC, 2022: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change.*[Figure AR6 WG2 | Climate Change 2022: Impacts, Adaptation and Vulnerability](#)

Ref 5 : [Island and Indigenous systems of circularity: how Hawai'i can inform the development of universal circular economy policy goals - Ecology & Society](#)

Ref 6: From: [3 Pillars Of Sustainability Explained \(Guide & Examples\)](#)

Ref 7: Sustainability leading to Circular Economies.

Environmental or ecological sustainability is the carrying capacity of the environment and its long-term ability to cope with climate change, pollution and use of natural resources. A preserved natural environment allows for economic sustainability based on balanced development of food production, marine industries like fishing and tourism.

Economic sustainability is economic growth and efficiency essential for the long term satisfaction of material needs and social stability. A satisfactory level of economic welfare helps resolve ecological problems including man made climate change, making investment in innovation and infrastructure viable.

Social sustainability is how "individuals, communities and societies live with each other and aim to achieve the objectives of development models which they have chosen for themselves, taking into account the physical boundaries of their places and planet earth as a whole". Social sustainability and vitality of the community thrives on the economic potential of the place and low unemployment rate.

Cultural sustainability. Cultural identity is attached to the environment and agriculture and includes the ability to preserve & use indigenous knowledge and cultural identity that also allows for change in accordance with those indigenous and cultural values.

Research shows strategic goals of sustainable development are best achieved when the whole local community is involved. According to the framework, sustainable development at the local level is possible with a holistic and balanced relationship between the key dimensions of sustainability. *An overview of the circular economy*

activity for small island wastes and marine debris : H Chandra and M F A Ismail
2023 IOP Conf. Ser.: Earth Environ. Sci. 1201 012013

[https://www.researchgate.net/publication/372036861 An overview of the circular economy activity for small island wastes and marine debris](https://www.researchgate.net/publication/372036861)

Sustainable Development in Island Communities: The Case Study of Postira Article in European Countryside · September 2014 DOI: 10.2478/euco-2014-0014.

[https://www.researchgate.net/publication/266030935 Sustainable Development in Island Communities The Case Study of Postira](https://www.researchgate.net/publication/266030935)

Reference 8: visual representation of a Waste circular economy. From:CSIRO Circular economy roadmap for plastics, glass, paper and tyres April 20th, 2023

<https://www.csiro.au/en/research/natural-environment/circular-economy>

Ref 9 : (SDG) framework connected to the three pillars of sustainability: environment, society and economy. [The Ocean's multi-faceted role in the UN Sustainable Development Goal... | Download Scientific Diagram](#)

Recognizing the dangers of plastics as destructive and prevalent pollutants, in 2022, the United Nations Environmental Assembly agreed on a resolution named "End plastic pollution: Toward an international legally binding instrument". This resolution establishes an Intergovernmental Negotiating Committee (INC) to draft an international legally binding instrument (ILBI) to tackle this multi-pronged crisis.

[An Opportunity to End Plastic Pollution:](#)

Ref 10: From The Reef Authority in its Position Statement on marine debris.

<https://elibrary.gbrmpa.gov.au/jspui/retrieve/9f06e60f-fa9d-405b-83b5-b01a06cb8f68/v0-Position-Statement-Marine-Debris.pdf>

Ref 11: Magnetic Island The Decarbonisation Report 2020

EarthCheck, ARUP Decarbonisation of Great Barrier Reef Islands – Whole of Community Pilot project Magnetic Island

<https://earthcheck.org/case-studies/great-barrier-reef/>

Ref 12: There are many other islands to inspire and learn from.

[Tilos - Just Go Zero by Polygreen](#)

[DAFNI | Network of Sustainable Greek Islands](#)

[The tiny islands leading the green transition - BBC Future](#)

[This is the world's first zero-waste island. Could Australia be next? | SBS News](#)

[Waste Management - Lady Elliot Island Eco Resort Great Barrier Reef](#)

Lord Howe Island has a community-driven recycling and waste reduction programs and a world class [waste management facility](#) that diverts 86% of the island's waste from landfill. Magnetic Island could easily emulate that within 10 years, with the right strategy, community created solutions, stakeholder support and funding. [Waste management | Lord Howe Island Board](#)

Ref 13: DCCEEW 2022 .

<https://www.dcceew.gov.au/climate-change/publications/australias-emissions-projections-2022a>.

Ref 14: [Magnetic Island Trails Vision Plan](#)

https://www.townsville.qld.gov.au/__data/assets/pdf_file/0027/72648/Magnetic-Island-Trails-Vision-Plan.pdf

Ref 15: visual representation vehicle-to-grid (V2G) concept

<https://encyclopedia.pub/entry/18645>

Ref 16: Renewable microgrids already established in Australia.

Lady Elliot resort is a Reef island and is a mini solar city which is operating on 100% renewable energy.

[Lady Elliot Island eco-resort transition to 100 percent renewable energy.](#)

<https://ladyelliott.com.au/sustainability/solar-power/>

In Western Australia, an initial trial by state utilities [Western Power and Synergy in Alkimos Beach](#) north of Perth involved 119 homes joining a community battery scheme. Households saved \$81,000 on electricity costs over the 5 year trial and consumed 85% less energy from Australia's electricity grid at peak times.

<https://totallyrenewableyack.org.au/watts-happening/yack01-community-battery/>

<https://www.weforum.org/agenda/2022/04/solar-energy-community-batteries-australia/>

Ref: 17: Stage 2 Microgrid : facts

A Pilot Project of (say) 20 houses could be undertaken in one of the four villages on MI. Solar panels and inverters currently cost about \$1,000 / Kwh and battery storage systems are about the same, albeit with only half the expected life. On MI, a 6.6Kw solar panel system with a 5kw inverter (cost approximately \$7,000)

produces almost twice (29 Kwh) the average daily residential consumption on MI (16Kwh).

Even taking account of losses from charging batteries and discharging them (approximately 14 to 18%), there should be sufficient generation on average for self-sufficiency for the members of the microgrid. Averages are by their nature misleading, but this should be mitigated by having more members in the microgrid such that the average of self-sufficiency is more likely to be achieved. The microgrid controls and metering are estimated at about \$1000 per installation. The administration and legal costs are estimated to be \$2,000 per installation. These estimates would be confirmed by the feasibility study.

Importantly, these projects are scalable. A 20 house pilot project is estimated to cost around \$400,000 (20 x solar panels and inverters (\$7,000), batteries (\$10,000), controllers and metering (e.\$1,000/member) and administration and legal costs (\$2,000 per installation). Armed with the full feasibility report, MI would be able to determine the overall costs of the pilot project and, importantly, the price of power between the members (*e.13c/Kwh – See Saul Griffiths Quarterly Essay issue 89 2023*).

Assuming a contribution by members over time for the capital expenditure on the microgrid Pilot Project, this information would also enable calculations to be undertaken to determine a conservative level of debt that could be paid off over the shortest of the economic life of the assets. Such a structure would reduce the amount required from equity providers (e.g., ARENA, GBRF, and members). The precise structure, quantum and security in respect of such debt (if any) will be derived from the feasibility report and requires further work.

Ref 18: [Circular Economy Water](#)

From the Ellen McArthur Foundation, ANTEA Group & ARUP white paper :water and the circular economy: 2019

Ref 19: Background to Ecosystem Monitoring & World Heritage Values Projects

Arup, EarthCheck, Regional Economic Solutions and the Queensland Tourism Industry Council were commissioned by the Queensland Government to assist MI to transition to a low or zero carbon future and become more resilient. This resulted in a report on Magnetic Island as part of the Decarbonisation of the Great Barrier Reef Islands – Whole of Island Community Pilot in 2020. [Magnetic Island decarbonisation report](#)

The intent of that Decarb project was to help the Magnetic island community reduce its emissions and increase resilience to climate change, which in turn benefits the Great Barrier Reef. The outcome of that report enabled MICDA to secure funding from the Great Barrier Reef Foundation (GBRF) and commissioned the Magnetic Island Community Action Plan (MICAP) in 2021. [MICAP 2021](#)

The MICAP Report confirmed the four groups of pressures identified in the Great Barrier Reef Outlook Report 2019 and recognised in the Reef 2050 Plan as posing the highest risks to the Reef, pressures arising from climate change; land-based run-off, coastal land-use change and direct use of the Great Barrier Reef. Recommendations of MICAP project included:

- Promoting awareness of Magnetic Island’s World Heritage Values. This resulted in the World Heritage Values project carried out by Magnetic Island Nature Care Association (MINCA) and funded by the Great Barrier Reef Foundation (GBRF).
- Community partnerships for ecosystem monitoring. This resulted in the Ecosystems Monitoring project funded by the GBRF and carried out by MICDA.
- Strengthen Traditional Owner aspirations for the protection of cultural heritage and economic opportunities on land and sea country. This resulted in the Wulgurukaba on Country Project, auspiced by MICDA, funded by the GBRF.
- Develop, communicate and implement a community vision and actions for YMI’s marine and coastal world heritage values. MI’s world Heritage Values have been incorporated and reflected in this Report and are integral to each aspect of YMI’s landscapes, seascapes, culture and heritage, and in the aims and projects of each working group.
- Develop Magnetic Island as a model for community-driven energy alternatives and energy efficiency with its purpose to establish Magnetic Island as a renewable energy show piece. Suggested carbon reduction projects are contained in this report.

Ref 20: What is Sustainable Planning?

Sustainability is the process of living within the limits of available physical, natural, social, and cultural resources in ways that allow all living things —not just humans

— to thrive long into the future. Sustainable development, on the other hand, aims to create growth and progress through the addition of physical, economic, environmental, and social components that can improve quality of life without depleting resources for the future.

[“Sustainability versus Sustainable Development: What’s the Difference”](https://brocku.ca/unesco-chair/2022/01/10/sustainability-versus-sustainable-development-whats-the-difference/)

<https://brocku.ca/unesco-chair/2022/01/10/sustainability-versus-sustainable-development-whats-the-difference/>

Sustainable planning for Magnetic Island is very different to urban sustainable planning ie planning sustainable cities. What is needed is conscientious urban design for a landscape in a World Heritage Area. Sustainable development is a way of living that is sustainable, politically realistic and feasible to implement. Sustainable planning in this report, uses 3 main themes:

- Urban Sustainable Planning and
- Environmental Sustainable Planning
- Intergenerational Equity

Urban Sustainable planning seeks to resolve tensions between economic development and environmental protection. The six main challenges to urban sustainability include: suburban sprawl, sanitation, air and water quality, climate change, energy use, and the ecological footprint of cities. Other urban sustainability challenges include urban pollution, waste management, and overpopulation. Sustainable urban planning develops innovative and practical approaches to land use and its impact on natural resources.

Environmental sustainable Planning focuses on the goals of protecting the environment and the conservation of natural resources. A way to achieve this goal is to pursue sustainability, which is using resources to meet present needs without compromising future resources.

Intergenerational Equity: this is a concept first set out in the 1990 UK White Paper This Common Inheritance which says ‘We have a moral duty to look after our planet and to hand it on in good order to future generations.’ The Australian Treasury 2021 Intergenerational Report¹, Environment Page 64 “regardless of the future success of global mitigation efforts, some climate change impacts are unavoidable. Over the next 40 years, Australia will need to manage these climate risks through strategic environmental management and adaptation to protect communities and strengthen the resilience of the economy. Early investment in adaptation will mean Australia is better prepared and safer from current and future climate change.”

1

A possible new approach to urban planning might be suitable to the unique position of Magnetic Island as a World Heritage location, is Biodiversity Sensitive Urban Design (BSUD) which is conscientious urban design for a landscape in a WH area - for ecological, community, psychological benefits.



From: [BSUD Home - ICON Science](#)

This new approach would treat biodiversity as an opportunity and a valued resource to be preserved and maximised at all stages of planning and design. In contrast to traditional approaches to conserving urban biodiversity, biodiversity-sensitive urban design (BSUD) aims to create urban environments that make a positive onsite contribution to biodiversity. BSUD seeks to build nature into the urban fabric by linking urban planning and design to the basic needs and survival of native plants and animals.

Ref: 21 *Report: Magnetic Island Long-Term Coral Monitoring: February 2022 Sea Research: A.M. and A.L. Ayling with assistance from D.M. Ceccarelli.* [Magnetic Island Long-Term Coral Monitoring report Final.pdf](#)

Ref 22: From Z.T., Richards & Day, Jon. (2018). Biodiversity of the Great Barrier Reef—how adequately is it protected?. PeerJ. 6. 10.7717/peerj.4747.