



THE UNIVERSITY
OF QUEENSLAND
AUSTRALIA

CREATE CHANGE

UQ Healthy Moreton Bay Initiative

Toward a thriving Moreton Bay by 2032



Moreton Bay is internationally recognised as one of the most biodiverse marine ecosystems in the world.

It is the largest and most unique estuarine bay in Australia, where tropical and temperate flora and fauna coexist, surrounded and increasingly encroached on by the millions of people who live, work and play there. Environmentally vulnerable, it is an urban seascape located near one of Australia's fastest growing metropolitan areas, with a 50 per cent population increase across Brisbane and the Gold Coast expected between now and 2041.

At the heart of Moreton Bay are its Traditional Owners and Indigenous cultural heritage. More than 2,000 Quandamooka and Kabi Kabi people continue to practice cultural, spiritual, educational and environmental stewardship of the land and waters with which they have a 25,000+ year relationship. The Quandamooka Yoolooburrabee Aboriginal Corporation (QYAC) is seeking to have Moreton Bay designated a UNESCO World Heritage site.

Approximately 1,000 native animal species, many threatened, live in Moreton Bay or rely on its diverse, interconnected habitats during migration. These include:

- well over 360 bird species—more than 40 per cent of all bird species in Australia
- six of the world's seven sea turtle species
- many species of shark, including the highly endangered grey nurse
- stingrays and manta rays
- a vast array of tropical and temperate fish
- bottlenose and humpback dolphins
- as many as 800 vulnerable dugongs
- humpback and other whales.

The southernmost populations of many tropical species, like dugongs and humpback dolphins, are found in Moreton Bay along with the northernmost populations of many temperate species. The overlap of ocean climatic zones is a major contributing factor to the area's biodiversity. Habitats range from sandy beaches, mangroves and salt marshes to seagrass meadows, rocky shores, intertidal mudflats and coral reefs.

The Challenge

What makes Moreton Bay special is also what puts it at risk. As a relatively shallow body of water, it acts like a semi-enclosed, sheltered lagoon separated from the ocean by sand islands. It is accessible and picturesque—and it is heavily impacted by human development. The bayside suburbs of Greater Brisbane impact its western shores, while some 2.5 million people—approximately 10 per cent of the Australian population—live in the central and northern bay surrounds. It accumulates sediment, nutrients, pollutants and litter that flow in from fourteen major river catchments. Land erosion is a significant issue.

Without question, the area is damaged ecologically and this damage will grow as environmental pressures intensify. Robust conservation strategies and practice, including substantive intervention, are imperative to achieving and maintaining a healthy bay and surrounds.

The social context in which all of this takes place cannot be ignored. Moreton Bay's historical, socio-political and economic landscape is complex and challenging to navigate—a jigsaw puzzle evolved over many years, with many pieces and players. Change will require committed effort and collaboration across a diversity of interests, stakeholders and constituencies.



Why UQ? Why Now?

The time has never been better for the Healthy Moreton Bay Initiative at UQ. Brisbane and Australia will be showcased to the world through the 2032 Games. The region will change significantly as it prepares to host an international event of almost unparalleled profile with a strong sustainability agenda.

Moreton Bay can be either a shining star in Australia's Olympic story, or a disappointment. The eyes of the world will be on us and local councils, the Queensland and Australian governments, businesses, agencies and communities—all will be motivated to ensure it is the former. Achieving this is a primary goal of the UQ Healthy Moreton Bay Initiative.

A thriving and sustainably managed Moreton Bay by 2032 depends on a deep understanding of ecological pressures and on identifying viable, actionable strategies for relieving them to preserve the exceptional biodiversity found there. UQ is well positioned to play a transformative role in the restoration and ongoing conservation of the bay through targeted research to inform decision making and action. The University has already made considerable investment in Moreton Bay research, partnering with other universities and organisations.

Existing world-class interdisciplinary expertise and resources, much of it tied to UQ's Moreton Bay Research Station, means that the initiative begins from a position of strength. Of course, success hinges on more than the work of one

university or organisation. None of this can be done in isolation and any significant and lasting change must honour the cultural, economic and social character of the bay area and the interests of its many and diverse stakeholders. With a history spanning over 50 years in the area, UQ's relationships at Moreton Bay extend well beyond research and, here too, the new initiative will be well placed to create positive change.

2032 Games aside, the increasing ferocity of climate change impact has sparked a growing appetite for environmental protection, intervention and restoration. The public, politicians and corporations are paying attention to a rising number of weather events, coral bleaching and the jeopardy that coastal communities the world over find themselves in. More and more, biodiversity, sustainability and conservation are the topics of the day—wicked challenges with which UQ is already fully engaged, where the University has solid government and NGO connections, and where collaborations extend locally, nationally and internationally.

The environmental degradation facing Moreton Bay from urbanisation and climate change is not unique and reflects problems facing coastal ecosystems globally. Research driven by the UQ Healthy Moreton Bay Initiative will have worldwide relevance and impact, and will bring with it local as well as global partnerships and collaboration.



What will it take?

The goal of the research initiative is to identify, develop and embed sustainable ecological management processes and practices to minimise the catastrophic threats and losses now facing Moreton Bay. These include sediment that smothers coral reefs, seagrass beds and mangroves, killing the many and varied species that rely on them for life.

This will be achieved within a holistic framework that supports a diverse range of solutions-driven research projects, pulling data and learnings together in creative ways and driving innovative policy and practice. The key to innovation lies in a unique collaboration across social and ecological science, fieldwork, policy and intervention.

Large scale analysis, synthesis, modelling and solutions testing, aided by AI and analytics, will be made possible by a sophisticated digital interface that all collaborators can contribute to and use. Automated monitoring of water quality, invasive species, fish populations and more will be run from the station, with data made freely available to stakeholders.

It is a 'whole is greater than the sum of its parts' approach to generating new knowledge and applications to empower effective planning, conservation and community engagement. UQ will work collaboratively with Traditional Owners and community partners—governments, NGOs, businesses—sharing findings and recommendations to support sound decision making and real change.



The research framework

Healthy Moreton Bay will interface with, and leverage from, research underway not just at UQ but at other universities in Australia and around the world, galvanising a cross-disciplinary conservation research collective in which the Moreton Bay Research Station will play a central role.

Key areas of research focus include:

1. Establishing baselines to monitor ecosystem health, environmental variables and biodiversity

Comprehensive ecosystem and biodiversity assessments of Moreton Bay against which to measure future impacts are lacking. To fill this gap, intensive sampling of environmental variables, including water quality, will be undertaken across the bay. High resolution underwater imaging, remote sensing and environmental DNA will be used to inventory biodiversity in coral and seagrass habitats.

2. Understanding human uses and values

Sustainable management of Moreton Bay requires an understanding, currently lacking, of the value it has to people. To build that understanding, social scientists will survey diverse constituents and communities, creating a comprehensive picture of the places they value, the activities they undertake there, and what makes these places important. Informed by this research, enduring conservation practice that hinges on public ownership can be developed.

3. Effective conservation planning, ecological modelling and testing for long-term success

Ecological modelling and spatial prioritisation will be employed to determine the range of management actions and solutions required for a healthy, sustainable bay. These include actions focused on land-based human activities resulting in run-off of nutrients and sediments (e.g. urbanisation, agriculture), and marine-based human activities (e.g. boating, fishing, dredging). Collaboration with management agencies will support ongoing conservation initiatives, including marine park zoning and land-use/run-off management.

How will we get there?

The UQ Healthy Moreton Bay Initiative requires, as a first step, a research Chair with a global perspective and proven track record of innovation in conservation research and practice. Over a minimum 5-year appointment, the Chair will bring the research framework to life and deepen the interface between field data and solutions modelling and testing. The Chair will work closely with the many UQ academics who already have strong connections at Moreton Bay, including those in the Centre for Marine Science, the Centre for Biodiversity and Conservation Science, the Moreton Bay Research Station and the School of the Environment. The Chair will also expand collaborative relationships with government and community and with other universities actively engaged in the area, particularly around the Moreton Bay Research Station.

Equally important to the initiative’s vision is the fostering of rising research stars—those up-and-coming researchers who are passionate about the environment, coastal communities and ecosystems. It is these individuals who will carry the work forward long into the future, not just at Moreton Bay but around the world, having learned under the expert tutelage of world-leading experts in the field.

Indigenous PhD students and fellows are key to the success of this program, which will include established successful strategies for attracting people of Aboriginal and Torres Strait Islander descent into the planned interdisciplinary clusters and the establishment of an Indigenous Scholars in Residence program.

The strength of this initiative lies in collaboration and the integration of unique and complementary expertise. Its promise lies in the postgraduate and even undergraduate students who will have the opportunity to be part of the initiative.

Stage 1 of the initiative will move forward with philanthropic funding for:

Healthy Moreton Bay Endowed Research Chair	\$5M [min]
Interdisciplinary research fellows/early career researcher cluster* [6]	\$2.5M
Interdisciplinary PhD student cluster— Healthy Moreton Bay scholars* [6]	\$500K
Indigenous Scholars in Residence program	\$500K
Stage 1 funding required	\$8.5M

*at least one of which will be Indigenous



The Moreton Bay Research Station

The existing Moreton Bay Research Station was built in 1949 with a strong fisheries research focus. It has evolved considerably since that time and serves as the only research hub for Moreton Bay, used extensively by researchers from not just UQ, but other universities and institutions including CSIRO, and by international scientists studying the unique flora, fauna and coastal ecosystem.

An expanded and upgraded research station will be respectful of and reflect its location on Indigenous, titled land. Improved systems will support Healthy Moreton Bay research and the all-important interface between field data and solutions modelling and testing. Sophisticated information systems to accommodate expanded monitoring, data capture and data sharing is a must, supporting real-time interface between field data collection, analysis, solutions testing and decision making.

The station’s extensive research and conservation effort will be game-changing, as will the dialogue and engagement it enables, so central to the vision of the initiative. The new space will be a dynamic gathering place and an iconic symbol of ecological and social transformative change, bringing together scientific and Indigenous knowledge in the development of meaningful solutions.

Moreton Bay Research Station expansion	\$17.5M*
Visiting Researcher and Indigenous Lecture program	\$2M
Digital infrastructure	\$2M
Stage 2 funding required	\$21.5M

*rough estimate only

Total funding required	\$30M
------------------------	-------



Milestones

2024/5	Research framework formalised, strategic partnerships and relationship plan scoped, including processes for consultation, information sharing, collaboration
2025/6	Research Chair in post and Indigenous Scholars in Residence program established; digital/information systems scoped, including automated monitoring systems
2026/7	Fellow and PhD positions in place
2028	Initial outcomes from Research Chair, fellows and PhD students
2028	Moreton Bay Research Station expansion underway
2032	Launch of expanded Moreton Bay Research Station and related programs

Collaborators and partners

The UQ Healthy Moreton Bay Initiative hinges on and will contribute to a broader alliance driven by shared vision and goals for Moreton Bay. UQ's initiative will benefit from strategic, ongoing collaboration among researchers from across this University, and with internationally renowned researchers and experts from Queensland, Australia and around the world. We will draw on best practice wherever it exists and we will build local and global capacity by sharing what we learn.

Integral to success is the leadership of the Quandamooka Yoolooburrabee Aboriginal Corporation (QYAC), The Moreton Bay Foundation, along with key community, industry and government stakeholders.

Philanthropic opportunity

Realising this ambitious plan requires a visionary investment of \$30M over the next five years.

Funding will support the research framework under the direction of an exceptional research Chair. It will support the next generation of conservation scientists and community leaders. It will create the expanded spaces and systems needed for positive change. And it will drive collaboration and strategic partnerships, including with Traditional Owners and the broader community, to enable critical decision making and action.

The UQ Healthy Moreton Bay Initiative is about local as well as global impact. Through it, best practice in the field of conservation will evolve in new and innovative ways for a thriving Moreton Bay and, more broadly, thriving coastal ecosystems around the world. Equally importantly, it will ensure that this extraordinary place is protected, preserved, enjoyed and respected for generations to come.

We seek inspired philanthropists and partners to join us in this once-in-a-generation opportunity. There is no time to lose. You can help take solutions forward—for Moreton Bay, for vulnerable coastlines everywhere, and for the amazing biodiversity and cultures that make them so special. Together we will show what the innovative power and commitment of Queensland and Australia can do.

UQ welcomes the opportunity to work with you to create meaningful, lasting impact in Moreton Bay and beyond. We thank you for this opportunity to partner with you to make a difference.



For more information:

Brenda Tournier

Associate Vice President, Advancement
Faculty of Science

b.tournier@uq.edu.au

+61 447 537 384

About UQ

<https://about.uq.edu.au/>

For more than a century, The University of Queensland (UQ) has delivered knowledge leadership for a better world. The most prestigious and widely recognised rankings of world universities consistently place UQ among the world's top universities. UQ has also won more national teaching awards than any other Australian university. This commitment to quality teaching empowers our 55,000 current students, who study across UQ's four campuses, to create positive change for society.

Our research has global impact, including in the areas of biodiversity conservation and marine and freshwater biology, delivered by an interdisciplinary research community of more than 2,500 academics and researchers at our six faculties, eight research institutes and more than 100 research centres. UQ helps to shape the future by bringing together and developing leaders in their fields to inspire the next generation and to advance ideas and knowledge that benefit our communities, our state, our country and our world.

UQ's Faculty of Science consistently places highly in international rankings and indexes across our many disciplines. From environmental management, biodiversity and agriculture to biotechnology and biology, our expertise is widely acknowledged as world leading. The Faculty has a proven record in advising and collaborating with industry, government, research and community partners, and with our alumni, to create positive change.



CREATE CHANGE

CRICOS Provider 00025B • TEQSA PRV12080

