

HARBOUR

# INSIGHTS

GLADSTONE HEALTHY HARBOUR PARTNERSHIP | 2022

**BECOME A**  
*harbour hero*

OUR NEW COMMUNITY  
ENGAGEMENT PROGRAM

*mud crab*

**MONITORING**

LOOKING AFTER  
GLADSTONE'S ICONIC  
MUD CRABS

MEET OUR  
**NEW PROJECT**  
**OFFICER,**  
HANNAH

*from data*  
**TO REPORT CARD**

INSIDE THE WORK OF GHHP'S SCIENCE TEAM

# CHAIRS' *welcome*

Besides being Queensland's largest multi-commodity port, Gladstone Harbour is rich in marine resources, from fish and coral to seagrass and tidal wetlands, creating a stunning natural beauty.

The Gladstone Healthy Harbour Partnership (GHHP) was formed in 2013 to collectively inform management decisions to improve the water quality and health of the ecosystem. This Partnership between government, industry, research organisations and community groups independently monitors and reports on the health of Gladstone Harbour (the first annual Report Card was released in 2014).

The Report Card continues to monitor and report on the environmental, social, cultural and economic health of the harbour, through an annual set of scores and grades, across these four spheres. The data underpinning the scores in the Report Card is assessed by an Independent Science Panel before it is released. Through the GHHP's Report Card, community and industry alike can access the results of all this scientific expertise.

GHHP is grateful for the input and support from its Partners in producing a robust Report Card that is trusted by the community. We would also like to acknowledge and thank Fitzroy Basin Association for their support in hosting GHHP over the past 10 years and look forward to working with our new host, CQUniversity.

*Prof. Iain Gordon*

GHHP INDEPENDENT CHAIR

Report cards are widely used to help summarise and communicate the condition of diverse natural systems, such as rivers and estuaries.

Gladstone Harbour is a highly complex system, as a coastal area influenced by stream inflows, coastal and ocean processes, and natural events, overlaid by a range of anthropogenic influences. This complexity means that a report card is an ideal approach to summarising and communicating the condition of the harbour area.

As part of this process, specific monitoring programs are undertaken each year in Gladstone Harbour for selected aspects of harbour health. Results come in for 106 different measures, many assessed in different zones in the harbour. These are evaluated and condensed into scores that summarise condition and trends. Similar to a school report, those summaries are presented as grades for key indicators and components, making it easy to communicate.

The process is overseen by the group of technical experts that comprise the Independent Science Panel (ISP).

*Prof. John Rolfe*

ISP CHAIR

# mud crab MONITORING

## Looking after Gladstone's iconic giant mud crabs

Giant mud crabs are one of the most commercially valuable shellfish, a key fisheries resource for Queensland, and hold cultural value for Indigenous Australian peoples. But despite their ecological, economic and social importance, there remain significant gaps in the understanding of mud crab biology and ecology. In 2017, the Gladstone Healthy Harbour Partnership (GHHP) commissioned CQUniversity to develop a mud crab indicator for the Gladstone Harbour Report Card, and a long term monitoring program to continue to score and grade the indicator annually.

Gladstone Harbour boasts ideal mud crab habitat of mangrove-lined estuaries and is a key commercial and recreational fishing region, which project lead Associate Professor Nicole Flint says made it the perfect location to study mud crabs.

"The mud crab indicator is composed of three different measures that were designed to reflect the range of environmental and extractive pressures in Gladstone Harbour. Working with the Indigenous Sea Rangers from Gidarjil Development Corporation, each year we compile information on catch rates, sex ratios (the ratio of males to females

and the prevalence of rust lesions," Associate Professor Flint says.

"This provides a valuable comparison over time and we have been able to refine the indicator as new data and information has become available."

Associate Professor Nicole Flint says the ongoing partnership with GHHP allows the research team to work continuously to identify new data that could feed into the indicator and scoring methods.

"The mud crab indicator is used to independently monitor, and report on, the health of the harbour against GHHP environmental goals, and inform annual Gladstone Harbour Report Cards

"Before this, mud crabs had not been included in ecosystem health report cards in Australia or elsewhere in the world," she explains.

"We recently completed our sixth year of monitoring, providing scores and grades for the 2022 report card, and building a long-term dataset to better understand these important animals."



# from data TO REPORT CARD

A behind-the-desk look at the work of  
GHHP's Science Team

While the data contained in GHHP's annual Report Card may look simple enough when reduced to an easy-to-read, four-page leaflet, you can guarantee the process required to do so is quite the opposite. We chatted to Dr Mark Schultz and Mac Hansler from GHHP's Science Team about their role in producing the report card and how they synthesize the hundreds of measurements, grades and scores collected each year.

## WHO COLLECTS THE DATA EACH YEAR AND HOW?

MARK: The data used to create the Report Card is collected by the Port Curtis Integrated Monitoring Program (PCIMP) and contractors engaged by GHHP including AIMS (Australian Institute of Marine Science), James Cook University (JCU) and CQUniversity. Data collection for the 2022 Report Card began in July 2021 and concluded in June this year with repeat sampling used ensure consistency between years. For 2022, the team collected data for seven environmental, eight social and nine economic indicators. These new measurements will then be combined with previous data for mangroves and Indigenous cultural heritage to calculate the final scores and grades for 2022.

## HOW DO THE FINAL SCORES AND GRADES GET CALCULATED?

MAC: Our contractors input all the data into GHHP's Data Information Management System (DIMS), which enables them to calculate the scores and grades for each measure based on methods developed in conjunction with GHHP's Independent Science Panel (ISP).

3 | HARBOUR INSIGHTS



MAC HANSLER



DR MARK SCHULTZ



It's then up to Mark and I to review the resulting scores, grades and reports before the DIMS is used to calculate the overall zone and harbour scores.

For the Environmental component, the scores for each indicator such as seagrass or coral are aggregated upward from the measures to produce the final scores for each indicator and indicator group. The indicator groups, water and sediment quality, habitats and fish and crabs, are then aggregated to produce the overall Environmental score and grade. Apart from fish health, where a whole harbour score is produced, scores and grades are also generated for each of the 13 individual harbour environmental monitoring zones.

A single whole harbour score is produced for the Social, Cultural and Economic components. For Indigenous cultural heritage, scores and grades are produced for four management zones and as well as an overarching regional score. While all of these components are included in each annual report, new data for Social, Cultural and Economic indicators is only collected every four years.

### WHO PUTS THE REPORT CARD TOGETHER?

MARK: Mac and I have the job of writing all the components for the Report Card, including the technical report, website material and draft report card text. We're actually working on all of that at the moment in preparation for the 2022 Report Card launch early next year. We'll then circulate the drafts for each of those components amongst GHHP's Management Committee and Independent Science Panel before it all gets passed to our Communications Team to design and format.

### BESIDES PREPARING THE ANNUAL REPORT CARD, WHAT ELSE DOES YOUR JOB ENTAIL?

MAC: While the Report Card and all its components does form a big part of our role here at GHHP, there's plenty of other tasks that keep us busy during the year. We coordinate ISP reviews of all report card projects, review reports and manage the different science projects GHHP conducts during the year, meet with the wider regional report card network, manage the DIMS system and ensure that all project results get communicated to the community and our stakeholders through the various products and publications we produce. We're currently preparing for the final ISP, Management Committee and Partner meetings of the year, where we'll deliver all of the 2022 Report Card results.



# meet our NEW PROJECT OFFICER

Introducing GHHP's newest team member, Hannah Russell

Working to improve the health of our oceans and waterways is something GHHP's new Project Officer, Hannah Russell, is certainly no stranger to.

Having previously worked as the Burnett Mary Regional Group's Paddock to Reef Regional Coordinator, Hannah was responsible for sharing the program's Great Barrier Reef water quality report card along with any local projects that fed into the report and communicating how they related to the government's Reef 2050 Water Quality Improvement Plan. The role also gave her plenty of community engagement experience, having organised events such as the Burnett Mary Regional Integrated Science Forum – a two-day event that highlights the outcomes of the latest natural resources projects undertaken in the region.

Combined with her Bachelor of Applied Science degree from the University of Queensland and previous role as a Research Worker for CQUniversity's 'Integrated Habitat Restoration on the Discovery Coast' project, Hannah's wealth of industry experience makes her an asset to the GHHP team.

After making the move from Bundaberg to Gladstone in July 2021 and starting her role at GHHP in August 2022, Hannah is excited to further share GHHP's vision with the wider community.

"The vision of healthy, accessible, working harbour that everyone can enjoy is fantastic and one that I can't wait to help share with the community," she says.

"I'd also love to contribute to possible improvements across the different environmental, social, and economic indicators, as I believe there's always more that can be done when it comes to responsibly managing our waterways."



# become a HARBOUR HERO

The new community engagement program that aims to get all harbour users involved

While the Gladstone Healthy Harbour Partnership has always been proactive in publicising Report Card results to the wider community and promoting the harbour's health through community events and resources, there hasn't traditionally been many opportunities for individuals to take an active role in the organisation. Yet this is all set to change in the coming months with the launch of the 'Gladstone Harbour Heroes' group - a new community engagement initiative designed to keep members up-to-date with GHHP activities, opportunities for involvement in social surveys or citizen science, and create greater awareness of the report card results.

GHHP's Chair, Professor Iain Gordon, says the initiative is all about giving individuals the chance to develop a greater sense of ownership and pride in the harbour.

"As an organisation, we believe that taking care of our great harbour, its health and habitats is something that everyone can get involved in - from families and kids who love spending their weekends at the beach to local boaties and fishing enthusiasts."

The group is free to join and open to anyone who is interested in or utilises the harbour, thereby not limiting involvement to local residents alone. Members will receive regular email updates on the work of GHHP, be the first to know about upcoming events and receive a free 'Harbour Hero' members hat. To join, simply visit [www.ghhp.org.au/community-involvement](http://www.ghhp.org.au/community-involvement) and complete a short form.

# OUR partners

The work and achievement of the Gladstone Health Harbour Partnership wouldn't be possible without the support of our partners.



Gladstone Healthy Harbour Partnership

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