

Long-term decline in Great Barrier Reef dugong populations confirmed

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A [new report](#) from James Cook University (JCU) TropWATER reveals a long-term decline in dugong populations along the Great Barrier Reef, spanning from Mission Beach to Bundaberg, and Hervey Bay in the

Great Sandy Strait.

Aerial surveys conducted in 2022 confirm that this declining trend has persisted for almost two decades, despite Australia's renowned global status as the host of the world's largest population of these marine mammals.

The 2022 Dugong Aerial Survey: Mission Beach to Moreton Bay report is part of a series of [aerial surveys](#) conducted every five years to monitor the distribution and abundance of dugongs along Queensland's coast. The 2022 survey focused on the Mission Beach to Moreton Bay region, with surveys from Cape York to Cairns set to commence in 2023.

Lead [dugong](#) researcher, JCU TropWATER's Dr. Chris Cleguer said the report shows a clear declining trend since 2005, with an estimated annual population decline of 2.3% from Mission Beach to Bundaberg.

"We observed a decline in overall dugong numbers, with the area of most concern being the southern section of the Great Barrier Reef from the Whitsundays to Bundaberg," he said.

"Alarmingly, we observed very few calves in this region, and only two mother-calf pairs spotted in the Gladstone area.

"Our report reinforces the urgency in addressing threats to dugongs."

While the overall population is declining, the 2022 [aerial survey](#) confirmed areas of high dugong numbers in specific regions, including Hinchinbrook, the Townsville area, and Shoalwater Bay.

The dugong aerial surveys in the Great Barrier Reef are one of the most critical Reef monitoring projects. Minister for the Environment and Water Tanya Plibersek MP said the Government is committed to putting

a stop to biodiversity decline.

"This research, sadly, draws a clear picture of what we already know—that more needs to be done to address species decline in Australia, including on the Great Barrier Reef," she said.

"I want to see this majestic creature on a path to recovery."

"That's why we're restoring important blue carbon ecosystems like sea grass which dugongs call home, and investing A\$1.2 billion to protect the Great Barrier Reef.

"We're also supporting the Queensland Government to phase out gillnets in the Great Barrier Reef, which are a key threat to dugong populations."

Great Barrier Reef Foundation Integrated Monitoring and Reporting Director Charlie Morgan said the Great Barrier Reef supports one of the world's largest dugong populations.

"The condition and behavior of individual marine species such as dugongs can tell us a lot about ecosystem health as a whole so the news that this iconic marine animals' numbers are declining is another sign that the Reef needs our help to protect it from the growing impacts of climate change," Ms Morgan said.

Hervey Bay, located south of the Great Barrier Reef, showed the most significant estimated rate of population decline at 5.7% per year between 2005 and 2022. These findings are linked to back-to-back flood events in early 2022, resulting in extensive seagrass loss and depriving dugongs of their primary food source.

"Seagrass habitats are very sensitive to [extreme weather events](#) like cyclones and flooding, and often healthy meadows can deteriorate within

a matter of weeks or months following an event," Dr. Cleguer said.

"It's highly likely that some dugongs would have died from starvation, while others would have moved away to habitats near Gladstone in search of food.

"We found the dugongs that did stay found refuge right in the heart of Hervey Bay, where pockets of deeper seagrass were still holding out.

"The case of Hervey Bay serves as a warning of what may continue to occur under future climate conditions, it underscores the urgency in preserving and understanding seagrass habitats, particularly the deeper water ones."

JCU TropWATER researchers consulted with Traditional Owners along the Queensland coast. The report discusses how new technologies and communities could be used by Indigenous rangers in sea country management.

"This consultation confirmed that Traditional Owners are very keen to be informed on the results of the surveys as well as opportunities to be actively involved in future monitoring," Dr. Cleguer said.

"By training up Traditional Owners on sea country we could have more regular and finer scale monitoring. This could help to detect changes in population size to allow managers to intervene quicker."

Director of JCU TropWATER, and leader of the National Environment Science Program Marine and Coastal Hub, Professor Damien Burrows, highlighted TropWATER's renowned expertise in seagrass and dugong research, with a strong commitment to preserving these vital ecosystems and megafauna.

"We have over four decades of extensive research covering both dugongs and seagrass habitats, spanning from southern Queensland to Shark Bay in Western Australia," he said.

"Our researchers are exploring [innovative technologies](#) such as drones, AI, body condition assessments, e-DNA and genomics approaches to enhance our monitoring and advance our research of dugongs and seagrass, including their interconnections.

"We are also actively collaborating with Traditional Owners on sea country, providing communities with the necessary tools to monitor both dugongs and seagrass effectively."

More information: Christophe Cleguer et al, 2022 Dugong Aerial Survey: Mission Beach to Moreton Bay , *James Cook University* (2023). [DOI: 10.25903/s661-1j55](https://doi.org/10.25903/s661-1j55)

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