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HD **GRIEF OF THE REEF**  
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Its a national and global icon, but an unholy row brews in the underwater cathedral off the Queensland coast, pitting economics against emotion, cash versus conservation.

This is where it begins - 85km north-east of Bundaberg off the Queensland coastline, a white cay rises out of the ocean bed, its bony fingers reaching out to create part of what Captain James Cook called, in June 1770, the coral "labyrinth".

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Lady Elliot **Island** is the southernmost coral cay of the Great Barrier Reef. Visible from space, the reef extends more than 2300km along the coastline, a 344,400 sq km mosaic dotted with some 3000 coral reefs, 600 continental islands, 300 coral cays and about 150 inshore mangrove islands. Lady Elliot marks the southern start of a reef system so beautiful the United Nations Educational, Scientific and Cultural Organisation, in its 1980 annual report, asserted: "If only one coral reef **site** in the world were to be chosen for the world heritage list, the Great Barrier Reef is that **site**." Granted heritage status in 1981, the reef is a biodiverse wonderland where some 1500 species of fish swim, 4000 species of mollusc cling, and 400 species of coral spawn. Diving beneath the surface on Lady Elliot is like visiting an underwater cathedral, a serene and silent place where giant turtles lumber by like old men of the sea, and stingrays inch their way across the ocean's floor.

But a storm is swirling around these deceptively calm waters, one in which state and federal governments, minor political parties, **mining** giants, environmentalists, tourism operators, anglers, locals, visitors and everyday Australians alike all have a **stake**. Here, at the gateway to the reef, begins the story of the protracted battle over how best to conserve it.

In May last year, Australian newspapers and other national and international media outlets carried headlines such as "World Heritage Shame!" and stories warning that the reef might be listed as "in danger" by UNESCO when the global watchdog convenes in Qatar in June this year. If this comes to pass, Australia will be the only developed country in the world to have a heritage **site** on the "in danger" list, a potential global embarrassment no-one on either side of the debate wants to happen.

So how did it come to this? The warning came after UNESCO sent an 11-day monitoring mission to the reef in March 2012. Its report found the reef's management wanting, issuing the equivalent of a diplomatic slap on the wrist to both state and federal governments. Among other recommendations, it asked them to continue to provide funding to compile a "Reef Water Quality Protection Plan", and to subsequently publish a "Reef Water Quality Report Card", which was released in July last year.

The report gave the reef the equivalent of a "C", downgrading the inshore water quality from moderate to poor. And it was this downgrade that prompted the slew of warnings about the imminent demise of one of the world's great natural wonders.

But just how imminent, or even likely, that demise may be is the subject of such wildly differing opinions that Captain Cook might have been more prescient to describe the great reef he encountered in 1770 as "the political labyrinth".

What most agree on are the main dangers to the reef's health - rising water temperatures, the crown of thorn starfish infestation, agricultural fertiliser and pesticide run-off, natural weather patterns such as floods and cyclones and, most controversial of all, increased industrial activity in, or nearby, the reef's waters.

Specifically - and it's an issue thornier than any starfish infestation - is the effect of dredging within the reef's waters to create channels deep and wide enough for ships transporting **coal** and other exports to make their way through. The expansion of Queensland's **coal** industry in the past ten years has meant a parallel expansion of infrastructure to support it, prompting UNESCO to note in its report:

"The scale and pace of development proposals appear beyond the capacity for independent, quality and transparent decision-making ... few developments are refused, some overlap and no development limits have been set by governments." This brings us to the flashpoint of the reef debate, Abbot Point, a picturesque spot about 25km north of Bowen in North Queensland.

On December 10 last year, federal Environment Minister Greg Hunt gave the green light to the port authority for dredging that would allow the development of three **coal** export terminals. His decision marked the end of a lengthy process that saw the previous Labor government balk twice before the post, and Hunt himself postpone an earlier decision.

Dredging approval allows three **million** cubic metres of dredge spoil to be dumped somewhere within the reef's waters (the Great Barrier Reef Marine **Park** Authority was expected to make a decision on the dredge disposal by yesterday, January 31.) The minister simultaneously announced approval for a new **coal** terminal at Abbot Point for India's Adani **mining group**; a \$20 **billion** Liquefied Natural Gas facility on Curtis **Island** (about 11km off Gladstone in Central Queensland) for Arrow **Energy**; and a gas transmission pipeline to Curtis **Island**, also for Arrow **Energy**. The announcement came with some 45 environmental conditions for Abbot Point and 35 for Curtis **Island**, including a maximum of 1.5 **million** cubic metres to be dredged in any given year, and for dredging to be limited to between March and June, avoiding peak coral spawning times. Hunt described the Abbot Point conditions as "some of the strictest in Australian history", and his decision to go ahead with the project was either applauded as sound and stimulating economic policy or regarded as the environmental equivalent of spraypainting over the Mona Lisa.

For the Queensland Government, the Abbot Point decision was, in many ways, a no-brainer. "Listen, you can't be green if you're hungry," Jeff Seeney says. The Deputy Premier seems a little weary of having to explain his government's strategy for the reef, pointing out that he loves the natural wonder "as much as any other Queenslanders", adding that he has a son who lives in Cairns and several other family members employed in various industries "dependent on the reef's good health".

"I, like many other Queenslanders, love the Great Barrier Reef and appreciate its uniqueness, its beauty and the real need to look after it for future generations." But, says Seeney, he is also a realist, one who believes the biggest threat to the reef is "the collapse of the Queensland economy".

"If you look anywhere around the world, the countries where the economies are failing are [those that are] also doing very poorly environmentally," Seeney says. "A healthy environment needs a healthy economy to support it." To that end, late last year and about three weeks before the Hunt announcement, the state government released its own draft "Queensland Ports Strategy", declaring five Priority Port Development Areas in Queensland. These development areas would apply to the ports of Brisbane, Mackay/Hay Point, Abbot Point, Gladstone and Townsville, where development would be "concentrated and encouraged" over the next ten years. Seeney says the development areas were the government's response to one of UNESCO's key recommendations that it "ensure no port developments or infrastructure be permitted outside the existing and long-established major port areas within or adjoining the **property**".

They have a dual function: "We're ensuring our powers to restrict development within five existing ports, and enabling development within those areas so that it isn't incentivised to go somewhere else," Seeney says. There's no doubt **mining** is big **business** in Queensland - according to 2012/2013 data from peak industry body the Queensland Resources Council, it's worth an estimated \$75 **billion** to the economy annually, including **purchases**, jobs and additional economic activity. If this figure is correct (the Greens in Queensland call it "wildly exaggerated"), then no wonder the government is keen to protect it. For example, in November last year it gave \$28.4 **billion** via reduced start-up royalties to support **mining** projects in Central Queensland's Galilee Basin.

**Mining** is not, Seeney insists, the big bad wolf of the reef debate; rather it's been miscast by "conservationists and a number of other groups who are philosophically opposed to any further expansion of the **coal** industry". "I think we need to understand where the real pressure on the reef comes from, and all the scientific evidence points to several things - natural weather events, plus urban and agricultural development along the coast of Queensland. Yet port development and dredging is often

used as a cynical tool in the debate playing on the genuine concern I and all Queenslanders have for the Great Barrier Reef," Seeney says.

He points out that it was the newly minted LNP Government which put a stop to the previous Labor government's much larger plans for Abbot Point. They included six proposed new **coal** terminals, and a whopping 35 **million** cubic metres of dredging. "Our proposal will require one-tenth of the dredging Labor was proposing, which was, of course, ludicrous, so we stopped it." Seeney, it seems, doesn't dispute dredging has an adverse effect on the environment. What he, and others, question is just how much of an effect, and how long-lasting.

IN THE TORRES STRAIT ISLANDS where he is conducting research, Jon Brodie believes he knows the answer. Shouting down a crackly and windy phone line, the Senior Principal Research Officer with the Australian Centre for Tropical Freshwater Research at Townsville's James Cook University, and **lead** author on the 2013 Scientific Consensus Statement on the Great Barrier Reef compiled for the Queensland Government, gives his verdict: "Well, dredging the reef is a disaster, of course, and everyone knows it's a disaster. We've seen in the past what happens to areas where dredging which is not monitored and managed to best practice occurs, and yet here we are, allowing it to happen within the Great Barrier Reef of all places," he shouts.

But while it seems everyone knows dredging does something to the water, just what it does is murkier. After dredging, its spoil needs to go somewhere, and the current preferred disposal methods are dumping it at sea, or by building a rock wall, known as a bund wall, in shallow harbours, backfilling it with the spoil, and re-terming it "land reclamation".

Both dredging and spoil dumping (in the water) produces "plumes" of fine sediment, which can be transported by currents, breaking up and reconfiguring again and again as it travels. The travelling plumes create cloudy and turbid water, which causes problems for coral and seagrass growth, both of which need clear waters to thrive.

The seagrass meadows that sway so picturesquely along the seabeds of the reef also provide havens of food and shelter for fish, turtles and dugongs.

"The reef has lost 50 per cent of its total coral over the past 27 years," Brodie's voice crackles down the line - and general consensus agrees with this figure, if not with the causes. "The dugongs have almost gone, apart from up here in the Straits, and the turtles and seagrass they feed off are declining. The water quality has declined, the crown of thorns continues to expand, so where in that environment is this amount of proposed dredging a good idea to throw into the mix?" Brodie asks. "It's just one less stress on the reef that could have been, and should have been, avoided." Projected estimates of the amount of spoil the Priority Point Development Areas - including the newly proposed Abbot Point development - would create are again wildly varied. Brodie says his own calculations show 140 **million** tonnes of spoil will be created over the next decade.

Seeney dismisses both the figure and the way Brodie reached it as "guesstimates", and points to his government's evidence that identifies the major causes of coral and seabed loss on the reef as cyclone and storm damage (48 per cent), crown of thorns starfish (42 per cent) and coral bleaching (10 per cent). Those figures come from a study published in 2012 by the Australian Institute of Marine Science and the University of Wollongong.

"Such studies make it clear that extreme weather events [such as the 2010/2011 Queensland floods and Cyclone Yasi] and the legacy effects of over a century of agricultural development have combined to produce water quality impacts ... and [they make it clear] that the contribution of port development and dredging make to water quality changes are minor," Seeney asserts.

The deputy premier says he will be happy to provide UNESCO with documentation showing that water quality improvements in the reef are on a "positive trajectory".

"Contrary to what some parties would have us believe, it's not all doom and gloom."

HIGH UP ON NORTH QUEENSLAND'S ATHERTON Tableland, **dairy** farmer Colin Daley is part of the good news. Daley, 51, is a member of the Reef 2050 plan, a collaborative project between farmers and the federal and state governments which began in 2008, and was formerly known as the Reef Rescue program. Farmers are given financial incentives (\$200 **million** to date, \$200 **million** more pledged over the next five years) to introduce better management practice to reduce run-off sediment, containing the nutrients nitrogen and phosphorus (catnip to the destructive, coral-devouring crown of thorns) and pesticides, to the reef.

The first phase of Reef 2050 ran from June 2008 to June last year, and saw 2100 farmers improve their soil management techniques and fertiliser and pesticide applications. The scheme has been widely seen

as a success, with a measurable reduction of 360,000 tonnes of agricultural sediment in its first two years, from more than 1.5 million hectares of land.

Daley, speaking from his 258ha, 240-head property, says he is "really happy" to have joined the incentive. "I've been on the farm all my life, born and bred on this briar patch. I started dairying straight out of school, and back then you didn't think too much about things like run-off, but of course it makes sense to reduce it where we can.

"We're a high rainfall area on the Tableland, 3000 feet [900m] above sea level, and a lot of it ends up going down to the coast and out to the sea.

Our creek, for example, flows into the Johnstone River near Innisfail, and in turn out to the ocean." With what Dr Peter Doherty, a fellow with the Australian Institute of Marine Science, describes as a "tsunami" of crown of thorns starfish edging down the Queensland coastline, the reduction of run-off from farms is a proven weapon in the battle to contain it. While the starfish are also increasing in number due to natural causes such as flooding (which causes the water to become laden with nutrient-rich sediments), one study has found that farm run-off was responsible for more than 40 per cent of coral loss over the past 27 years.

Daley admits candidly that when he first signed up for Reef 2050, the attraction was probably "a little more profit-driven", but now it has become part of his family's farming "legacy".

"The main thing we have done is instead of letting the manure just run off from the yards, we now contain it in a pond, and then spread it over the largest possible area. That way we're reducing the run-off and its intensity, we're not overloading a tiny area, and we're really diluting what does go out.

"We've also really cut down our fertiliser applications, and use of pesticides. We no longer do any broad-acre spraying; rather, we do spot-spraying of weeds, and yeah, I feel pretty good about that. If we can in our own way stop the progression and blooming of starfish, then I would be pretty happy about that, I reckon.

"I've got three kids, and that makes you think a bit about your legacy. The reef is an icon, one that I reckon we should all do our bit to protect."

IT'S NOT A HARD SELL, THE REEF. Worldrenowned, its stunning underwater structures are the stuff of which postcard dreams are made, and a place Queenslanders are quick to claim as their own natural wonder. Its state of health is the one issue about which Greens Senator Larissa Waters believes all Australians care deeply, the one battle, as she puts it, "I think we [the Greens] can win".

"If you ask anybody would they like to see the reef protected for all time, they'll of course say yes, but if you tell them that may not be the case, they seem amazed ... 'Wow, this reef we thought was so beautiful and protected is actually under threat?' "I think one of the reasons some of the more reckless decisions about the reef have been allowed to get through is because people have an assumption that it is somehow protected, when recent announcements are showing us very clearly that it's not." For Waters and the Greens, the number one threat to the reef's health remains climate change, but the senator concedes that particular message is increasingly hard to sell. "I think there's been so much noise about whether or not climate change is real, it's drowned out the facts, which is that when oceans warm, it does real damage to coral, with only a one-degree rise in temperature needed to cause mass bleaching," Waters says. "But while climate change is the main threat, the drivers of climate change are also a threat, including the massive new coal mines planned for the Galilee Basin, which in turn have caused the demand for the shipping routes out of the Great Barrier Reef." So, perhaps instead of the less palatable climate change debate, the Greens are focusing their efforts on lobbying for a complete ban of dredging and offshore dumping of spoil within world heritage waters; to stopping all port expansions, including Abbot Point; and on the protection of areas such as the Fitzroy River Delta (south of Rockhampton) and Cape York, also mooted for new coal and gas port developments. Waters says the Greens further question whether mining is "the great economic hope it's made out to be", and the real amount of jobs the industry creates.

"Our research through the Australia Institute [which describes itself on its website as an "independent think tank"] shows us that 86 per cent of mining profits go offshore; communities rarely benefit, particularly in the case of fly-in, fly-out mining, and that a healthy reef actually creates roughly 35,000 more jobs than the mining industry, with 63,000 jobs directly attributable to a thriving reef." Australian Marine Conservation Society Great Barrier Reef campaign director Felicity Wishart takes a somewhat softer stance. "We recognise that Queensland has a number of active working ports and we are not saying shut them down, nor are we saying no more mining," Wishart tells Qweekend.

"But we are also saying, let's take a breath here. In the past few years, particularly from 2009, there has been this massive race to expand our **coal** industry, major expansion plans in the Surat and Galilee basins which has led to this twin demand for expanding our ports.

"In 2009 **coal** was fetching up to \$180 a tonne, now [at the time of writing] it's down to \$94 a tonne, and all the signs are that the demand for our **coal**, particularly from **China**, is decreasing. So - and it's a pretty big question when you are looking at fiddling with something as finely balanced as the reef - is all this expansion really necessary?" A study by Britain's Oxford University entitled "Stranded Down Under?" and released in late December last year suggests it may not be.

Commissioned by the **Hong Kong** and Shanghai Banking Corporation, the report found that while Australia has current proposals for 89 **coal** mines, with the potential capability of doubling annual output from 430 **million** tonnes in 2011 to 980 **million** tonnes by 2020, global **coal** prices may not match the price of production.

The report said that both Clive Palmer's proposed **China** First mine in the Galilee Basin, and Alpha **Coal** Project - 79 per cent owned by Indian **company** GVK and 21 per cent owned by Gina Rinehart - have likely production costs well above the present \$94 a tonne, leaving them both vulnerable to delay or cancellation.

"So," Wishart further asks, "are we risking the reef for something which may not even prove to be as economically viable as first thought?" "Absolutely not," counters Seeney, adding that all his government's data points to a continuing, thriving **coal** industry. **Coal** is still Queensland's predominant commodity export, representing 63 per cent of volume, with the government's Priority Point Development Areas currently handling 87 per cent of its \$54.5 **billion** in exports.

But should the boom bust, Seeney says, "it doesn't really matter, because like any infrastructure it would have to be deconstructed ... but I can't really see that day."

JUST FIVE WEEKS AFTER HUNT GAVE the green light to dredging at Abbot Point came the environment minister's further announcement, on January 20, of an independent commission of inquiry into the Gladstone Harbour dredging project of late 2011. When dead fish, or those presenting with cloudy eyes, bright red lesions and other signs of stress, were found in the harbour, all **commercial** fishing was suspended for several weeks while a formal investigation was conducted.

Local **commercial** fishermen, some of whom also fell ill during this period, pointed the finger squarely at dredging **operations** which had begun in May that year to service the \$33 **million** Curtis **Island** Liquid Natural Gas project, but the Gladstone Ports Corporation has repeatedly claimed "heavy flooding" was largely responsible for the environmental disaster.

In late December, a former employee of the GPC-turned-whistleblower, John Broomhead, publicly claimed that a damaged bund wall, built to contain dredge spoil, had leaked toxic pollutants into the harbour. Broomhead, a former environmental manager for the GPC, further claimed that the leakage followed design changes made to the wall to cut costs.

In making his most recent announcement, Hunt said the inquiry would be afforded "sweeping investigative powers", and it is believed it will also examine possible links between the former federal and state Labor governments and the GPC, and whether correct environmental procedures had been followed. While engineering consultants BMT had told the GPC in November 2011 that the leaking wall was a major factor in the collapse of the marine ecosystem, the GPC allegedly withheld this from the public for more than two years, ostensibly adhering to its "heavy flooding theory".

Indeed, when Qweekend interviewed Seeney, it appeared the state government had also been kept in the dark about the new evidence. "What really happened," Seeney said, "rather than what the alarmists would have us believe, all of the evidence tells us a big element was the extreme wet season we had, wherein a semi-enclosed body of water almost became fresh water for some time, and a large number of fish that were artificially introduced into stocked impoundments nearby were washed into Gladstone Harbour." Qweekend requested an interview with GPC executive officer Craig Doyle on several occasions, but calls went unreturned.

What Hunt's commission of inquiry may uncover will be yet another chapter in the turbulent fortunes of the reef, with environmentalists no doubt hoping it will sound the death knell for the Abbot Point dredging project - or at least defer its commencement.

Back in the pristine waters that surround Lady Elliot **Island**, all is calm. It's part of a designated "green zone" - a place where no fishing, and certainly no dredging, is allowed within a 30m offshore zone. Seeney's "greenies", as he calls them, would no doubt love to see the entire reef designated as such, but economic practicalities make this unrealistic.

In the meantime, a little girl, watched by her father, fits her mask and snorkel for her first glimpse of what lies beneath her finned feet. She begins to swim, her mask flat on the surface, but almost immediately stops. "Dad, Dad!" she yells, her own face full of natural wonder. "You've got to see this, you won't believe what's under there, it's really, really" - she searches momentarily for the right word - "great!" And the one thing everyone shares in this particular story is the hope that it always will be.

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