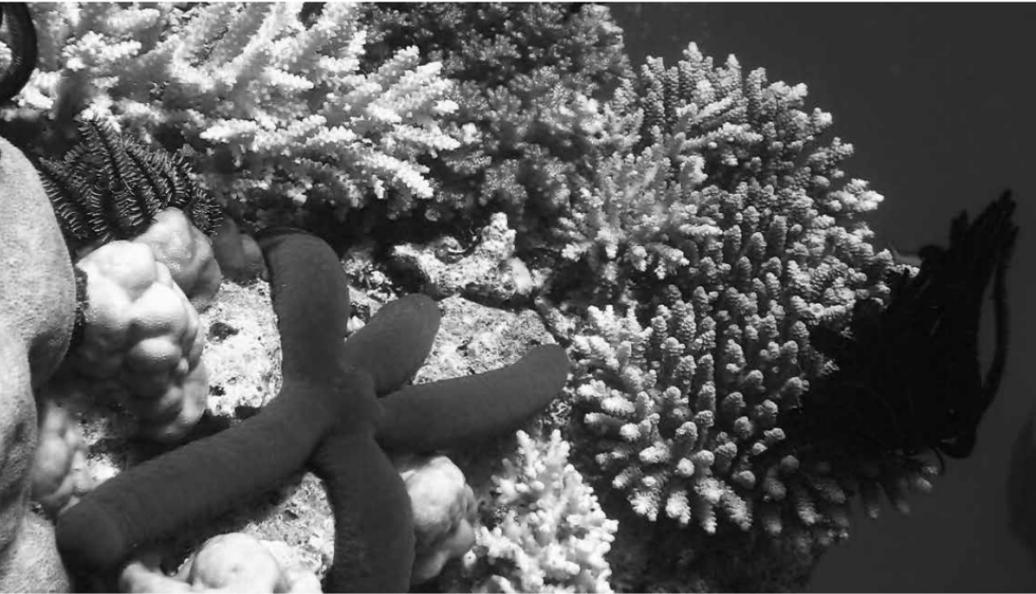




**DANIEL BURDON**



The Great Barrier Reef is just that – one of Earth's most significant physical barriers, akin in its own way to the Himalayas or the dense forests of the Amazon. Image © 2004 Richard Ling [www.rling.com](http://www.rling.com).

## BENEATH THE SURFACE

Behind the Battle for Hearts, Minds and the  
Great Barrier Reef

*Daniel Burdon*

A moment of anxiety follows the plunge, backwards, off the side of a boat into the tropical waters of the Great Barrier Reef. Entering a realm in which humans are out of place, the world beneath the surface is an alien environment. It is, literally, a plunge into the unknown.

But to a young scuba diver exploring the reef's waters in the early 1970s, it was an environment with which he would become most familiar. In 2001, Dr J.E.N. 'Charlie' Veron reflected on the anxiety that accompanied those early dives: 'We all felt that. We waited for the bubbles to clear just to make sure that there wasn't a big tiger among the sharks that always gathered around.' It was, perhaps, a sense of powerlessness. The diver is an observer in a place

where he is not the dominant species, subject to the whims of powerful forces he cannot control.

Overcoming the momentary anxiety, the young diver was unable to resist taking solitary night dives, where the reefs, ‘seen by moonlight, when one is all alone’, became ‘wondrous, peaceful places ... In very clear water the whole reef becomes a weird silver-grey and is full of life. Crustaceans crawl everywhere. Corals, seen mostly in silhouette, have tentacles extended, making all manner of other-worldly shapes.’

In 1973, the young diver and aspiring scientist, who later professed he knew ‘next to nothing about corals’ at the time, turned down three steady job offers to take a role in Townsville at James Cook University as a coral researcher. His work at JCU and later as chief research scientist at the Australian Institute of Marine Science, and that of his collaborators, would come to redefine the knowledge of corals around the globe. Over the course of a remarkable career, Charlie would dive the most diverse reefs nature had to offer, and become known as the ‘Godfather of Coral’.

His early work culminated in the creation of the definitive taxonomy of the reef’s corals. Not only a scientist, Charlie is, perhaps foremost, a passionate diver and underwater observer. After more than 6000 hours of diving over more than half a century, he speaks with a disquieting sense of wonder and loss for the changes he

has seen beneath the surface of the Great Barrier Reef's waters:

I observe a lot – you may not study bushfires, but if you're a bushwalker, you notice the change. Under the water, I've been noticing change all my life on the Great Barrier Reef, but it really came home to me what was at risk after two trips to Japan and south-east Asia. Over decades apart, I saw the catastrophic impact, not just to corals, but the whole ecosystem. I spent over a month diving in south-east Asia a few years ago, and did not see one shark. To not see one shark shows how badly that region is already fished out.

The plight of the sharks, he wrote in 2001 in the *Atoll Research Bulletin*, was 'symptomatic of what is happening to reefs'. The destruction of reefs world-wide was already 'going on at an awesome pace', he wrote. For the once-inspired observer, the decline of reefs globally, and particularly the Great Barrier Reef, was not an abstract notion, but a personal experience.

'Now coral reefs are bearing the brunt of global climate change. Having worked in all the major reef regions of the world, my job has become depressing – the last thing I would have once expected.'

The documented decline of the Great Barrier Reef has been attributed to several key factors, an Australian Institute of Marine Science (AIMS) study found in 2012.

The landmark study was the first to produce concrete figures to demonstrate the scale of the reef's decline since

white settlement. Based on almost 30 years of monitoring the outer-shelf reefs, it found half of the reef's coral cover was lost between 1984 and 2011, and the recorded mass coral bleaching events were only the tip of the iceberg.

Almost half of the coral lost was attributed to ferocious cyclones and tropical storms, at 48 per cent, and a further 42 per cent to the coral-devouring crown-of-thorns starfish, while coral bleaching caused by increased water temperatures contributed a further 10 per cent of losses. AIMS research director Dr Jamie Oliver said that while there had been earlier papers pointing towards the mass coral loss, this was the 'first one that was able to show for the whole length of the Great Barrier Reef, particularly for offshore and mid-shore reefs, that there was an average decline ... But it was not always the same; the northern parts actually didn't show very much decline, while the southern and mid sections of the reef showed much more decline.'

The study has since been used by both environmentalists to lobby for more action and less industrialisation; and the coal industry, as evidence that the decline had little to do with industrial development. However, the study itself points to the 'major anthropogenic risk factors', including rising seawater temperatures, ocean acidification, water pollution from land run-off, dredging, destructive fishing practices, overfishing and coastal development.

It was no coincidence that the study showed more damage to the southern and mid regions of the reef, where

water quality is significantly degraded and agricultural and industrial development has had a much longer history than the sparsely populated far north. The study and the 27-year decline it recorded demonstrated the reef's vastness, showing how regions such as the far north could remain relatively pristine, while the southern regions succumbed to human influences.

The sheer immensity of the reef has long been one of its key weaknesses. A great barrier of interconnected ecosystems and inherent diversity, it resists definition. Yet, despite the apparent paradox of a singular name defining such a multitude of different environs, the name remains apt.

The Great Barrier Reef is just that – one of Earth's most significant physical barriers, akin in its own way to the Himalayas or the dense forests of the Amazon. For thousands of years it has preserved the Australian mainland against tropical storms and coastal erosion, from the powerful winds and oceanic currents winding through the Pacific. Despite the seeming everlasting nature of the reef we know today, it came about as an immense quirk of nature. The result of centuries of environmental flux and the grindingly slow shifting of continental shelves, the reef today is a vast, yet delicate, coincidence of time, place and climate.

The reef entered into the story of Australia's white settlement first as a danger, scragging the hull of the Endeavour as Captain James Cook worked his way up Australia's east

coast in June 1770. Explorer Matthew Flinders was the first, in 1802, to give the entire reef its tripartite name, which now almost elides into a long single word.

It was the 1908 publication of naturalist and journalist Ted Banfield's book, *Confessions of a Beachcomber*, detailing his observations on Dunk Island, which first captured the imagination of those who would later be called 'eco-tourists', sparking international interest in both visiting and preserving the reef. Banfield's work, dedicated to the preservation of the reef, would be a key catalyst, drawing people from around the globe to the natural wonder over the ensuing decades, both raising awareness of the reef's inherent value and increasing the human pressures exerted on the ecosystem. Today, those visitors and the industry supporting their travels is worth more than \$6 billion a year and employs more than 60,000 Queenslanders – the single largest employer on the reef.

Many of the first visitors were of a like mind to Banfield, not least of whom was Sir Matthew Nathan, Governor of Queensland in the early 1920s. After reading Banfield's work and visiting the reef, Sir Matthew would, in July 1922, write to the Governor-General Sir Henry Forster and Premier Ted Theodore proposing an investigation 'with regard to the problems of the Great Barrier Reef', which he wrote were 'now engaging the attention of the Royal Geographical Society'. It was the first in a long succession of inquiries into the challenges facing the reef.

The reef coastline, meanwhile, drew fishermen, crabbers and pearlers, thriving on the productive waters of an immense lagoon created by the string of in-shore reefs, islands and cays stretching almost the entire length of Queensland. The settlers came, with axes and fishing nets, dominating a wild and varied landscape, from the undulating hills and plains of central Queensland to the thick rainforests of the far north. On the land, farmers and cattle producers cleared the scrub, planting pastures for grazing and ploughing land for wheat, sugar, legumes and vegetable crops, drawing water from the rivers and building homesteads, roads, towns and ports.

The endless march of civilisation brought with it further environmental concerns for the reef, along with a storied history of unrest and contestation. In the 1960s, developers fantasised of coral limestone mining on Ellison Reef and oil exploration on the Swain Reef. At a famous May 1969 symposium of the Australian Conservation Foundation in Sydney, many speakers set their face against reckless exploitation. The director of the Australian Museum, Dr F.H. Talbot, said that the primary consideration had to be that 'whatever we do to this asset we must not damage it ... we may use it to the full but only consistent with its continuance'. He urged that control of all activities on the reef be vested in a single body: 'Not control of mining by one department, tourism by another department, national parks by another, and reefs by another, which is the present

situation in Queensland.’ In a meeting of the Great Barrier Reef committee later the same year, amid growing calls for action, committee chairman Dr Robert Endean would provide a prescient, urgent message: ‘When the full extent of the tragedy is known, Australia will be condemned by the scientific world.’

Dr Talbot’s proposal would become the overriding objective of a coalition of like-minded campaigners – environmentalists, artists, writers and activists – who would turn local concerns about the reef into the first national ‘Save the Reef’ campaign in the early 1970s to bring about the guardian body, the Great Barrier Reef Marine Park Authority, in 1976. Five years later, the authority’s remit was extended by Australia’s successful nomination of the reef for listing as a World Heritage Area.

Mainly a reaction to the prospect of the industrialisation of the reef, the first Save the Reef campaign was also somewhat a retort to the rise of one of the state’s most notorious Premiers, Sir Joh Bjelke-Petersen, a man later dubbed the ‘Hillbilly Dictator’. Already firmly entrenched at the top of Queensland politics, Bjelke-Petersen was an unashamed advocate for industrial development. But his fervour for progress would lead in part, over two decades, to the creation of a political environment in which corruption flourished and the interests of developers overrode all else.

Journalist Chris Masters, then a *Four Corners* reporter who helped expose corruption in the state’s police,

described the time in a reflective essay for the *Griffith REVIEW* in August 2008, 20 years on from the startling revelations of his story, ‘The Moonlight State’:

A common criticism of process overtaking progress fails to recognise just how far process had broken down in the Joh era. A failure of process sunk him in the end. Integrity of government is not just a moral issue: there are practical consequences. If the system is crook, that system fails to work.

The welcoming embrace with which the state government first offered proposals to drill for oil on the reef was one of many signals of a ‘crook’ system. But with the rise of the Great Barrier Reef Marine Park Authority its sister organisation, AIMS, and James Cook University’s coral reef programs in the early 1970s, uncertainty and political rhetoric would soon be replaced by scientific fact.

Through the 1970s and 80s, the work of painstakingly documenting the corals and interactions on the reef would lay the foundations of what we know today of the immense variety and intricate relationships of the organisms that call the reef home. The authority would, during the ensuing decades, use the knowledge base that Charlie and others had created to manage the use of the reef, with the focus initially directed at the most visible industries – fishing and tourism. Management zones were eventually created, with fishing and tourism excluded from some of the most valuable areas, and new rules governing what could happen across the remainder.

Before the authority created the zones and built a regulatory system to govern the reef, fishers could go where they liked and operated in a largely unregulated environment; tourists could remove shells from coral growth and take them home as souvenirs.

In 1984 AIMS would begin close monitoring of the corals of the mid and outer shelves of the reef, the first such holistic monitoring system of coral reefs in the world. Originally mainly a data collection exercise, AIMS research director, Dr Jamie Oliver describes it as ‘the longest, most comprehensive reef-monitoring program in the world’. But, while focused monitoring commenced on the outer and mid-shelf reefs, those furthest from the reach of human impacts, long-term monitoring of the in-shore reefs would not begin until 1992. Dr Oliver could not explain why the monitoring program did not initially focus also on the in-shore reefs. Others put it down to a lack of resources and the early focus on managing tourism, rather than completing more research about the state of the reef.

It would be another 12 years before the first major assessment of 33 inshore reefs was completed in 2004, revealing both the variable nature of corals up and down the reef, and the ‘widespread and severe effects’ of major coral bleaching events on the shallower inshore reefs. Despite being hampered by a lack of knowledge on the ‘rates of recovery’ from such damaging events, the 2004

study provided clear evidence that recovery periods were essential for corals to adjust and rebuild after any major stressful event, natural or anthropogenic.

Just as science was beginning to define how the reef reacted to harm, other research had revealed signs that land management practices deep inland from the water's edge were also having an impact on the thousands of corals of the inshore reefs.

A series of research papers in the late 1990s and early 2000s would begin unravelling the situation. Surmised by an expert scientific panel's submission to a Productivity Commission inquiry in 2002, the problem was that 'major land use practices in the reef catchment have led to accelerated soil erosion, as well as increased fertilizer and pesticide application, with consequent increases in sediment, nutrients and pesticides in waterways flowing to the reef'. Their message to regulators and politicians: 'If we wait for all the relevant research to be completed before making a decision on the level of risk then we run the risk of making those decisions too late.' Action was swift.

Less than a year later, the first reef water quality plan was being put in place, with Prime Minister John Howard and Premier Peter Beattie calling the reef 'priceless', and setting the target to 'halt and reverse the decline in the quality of water entering the reef, within 10 years'. About \$20 million would be put towards the plan, with a further \$10 million for a concurrent compensation program for

fishers and tourism, as the Howard Government moved to expand the protected zones of the reef and ban fishing in about one-third of the World Heritage property.

While it began to address the problem, it was not enough, with another study in 2008 finding that: ‘The development of improved management practices in agricultural lands is required to reduce the risk of exposure to terrestrial pollutants, such as herbicides, in the receiving marine environments.’

James Cook University Professor Jon Brodie’s paper, ‘Herbicides: A new threat to the Great Barrier Reef’, revealed that despite ‘moderate optimism for the long-term resilience of the reef’, land management practices were still hitting inshore reefs hard. The study helped spark the next major phase of action, the Reef Rescue program. The state and federal Labor governments responded with some urgency, injecting \$200 million into the expanded program in an effort to actually reverse the damage.

Specifically, it would fund the sugar industry to reduce its reliance on damaging fertilisers and weed management chemicals and help cattle producers protect the waterways from further erosion, by replanting and fencing riparian zones. It was an approach, to which the later 2014 Great Barrier Reef Outlook report attests, that had some limited success in turning around what had been decades of poor land management practices across the length and breadth of Queensland.

But the incremental nature of those achievements was brought into sharp relief in the late 2000s and early 2010s, as a succession of floods, cyclones and lesser tropical storms lashed the reef. The floods sent thousands of tonnes of sediment downstream into the reef lagoon in what then-Premier Anna Bligh dubbed the ‘summer of disaster’.

The sediments settled indiscriminately on sandy, sparsely populated parts of the ocean floor as well as smothering seagrasses and corals, killing and damaging vast sources of food and habitat for dugongs, green turtles and fish that call the reef home. But it was the series of cyclones between 2005 and 2011 that would do the most immediate damage, with Cyclones Ingrid and Larry decimating the northern parts of the reef. Three years later the destructive winds of Cyclone Hamish would run down almost the entire length of the reef, before Cyclones Ului and Yasi came in 2010 and 2011, again highlighting how integral the recovery periods in the ecosystem’s life cycle were.

The Great Barrier Reef Marine Park Authority’s integral role in preserving and protecting the Great Barrier Reef was, many thought, above reproach. But it was not to last.

‘Let’s just admit it is not an independent authority anymore, it’s just another part of the Department of Environment. It gives the decisions the minister wants

and even if the science and people in there have a different view, it has to do what the minister wants; that's just the reality.' After more than 20 years working for the Marine Park Authority, and a lifetime researching the Great Barrier Reef, Professor Brodie's comments paint a bleak picture of the organisation tasked with protecting the reef.

Born of an environmental campaign to prevent the industrialisation of the reef, the Great Barrier Reef Marine Park Authority's independence may already be a thing of the past. Several sources inside the authority, fearing repercussions were reluctant to comment publicly and spoke only on strict conditions of anonymity. Others declined the opportunity.

The impression left by those who did speak is one of an incremental, decades-long march away from independence towards a largely well-meaning but cowed bureaucracy serving the whims of its political masters of the day. The situation, Brodie said, was not unique in a vast Commonwealth bureaucracy that he believes is 'no longer in a position to give frank and fearless advice at all'.

The ultimate effect of this erosion of independence, Brodie said, would be the 'further degradation of the Great Barrier Reef ... It's just like the government not taking on advice on climate change, not taking advice on port developments, [on how] to do it in an environmentally-friendly way, will lead to the continual decline of the Great Barrier Reef, that's simple.'

Current and former authority employees were more circumspect, but confirmed the independence that existed in its first two decades of operation has been eaten away. Several staff put it down to a series of political decisions to move the authority from providing ministerial advice direct to the federal and state decision-makers, instead filtering it through the Canberra-led Department of Environment.

One such change came in 2003–04, one source said, as part of the Howard government’s re-evaluation of several independent statutory agencies, effectively changing it from an independent body advising the minister, to one of many agencies reporting to the department. ‘It moved the authority out from a body which had direct communications with the federal minister to one which fed into the department – not necessarily reducing its independence, but reducing its influence on the political decision-makers,’ the employee said.

Memoranda, policy documents and communications obtained through a series of Freedom of Information requests bears out the description, showing how the advice from the Townsville authority is shaped and moulded through the department before hitting the minister’s desk. Among the documents were the authority’s early 2009 recommendations to the department about the future of Gladstone harbour.

The highly industrialised port was already feeling the weight of development, and as a succession of proposals

for liquefied natural gas (LNG) plants and other proposals came through, the Gladstone Ports Corporation (GPC) applied for an unprecedented dredging campaign to facilitate the LNG tankers entering the harbour.

It was time, the Great Barrier Reef Marine Park Authority's memoranda showed, to draw a line in the sand.

The official advice from the authority to the department was that all developments in the harbour needed to be properly assessed under a 'strategic assessment'; a complete analysis of the potential cumulative environmental effects of all the developments proposed and underway. If not, it warned, the current federal impact assessment processes would 'fail to take account' of all the potential impacts, and could trigger an unpredictable environmental disaster. The message was not heeded and two years later, as just such an event began unfolding, the international community got involved.

At its June 2012 meeting, after a mission to Australia uncovered more evidence of serious problems in Australia's stewardship of the reef, the World Heritage Committee strengthened its initial calls for action. The committee ordered that both a strategic assessment of the entire reef be completed and an independent inquiry into the management of Gladstone harbour be conducted. Noting the 'potentially significant impact' on the reef from 'the unprecedented scale of coastal development'; the committee also ordered no new port developments be

allowed outside the existing ports, or ‘if it would impact individually or cumulatively’ on the reef.

Despite the Great Barrier Reef Marine Park Authority’s warnings two years earlier, Canberra took little action until the World Heritage Committee intervened.

While the authority officially maintains it is independent of political influence, sources within say the biggest problems lay not with the dedication of scientific staff, but in whether or not the final decisions made were ‘largely political or based on the sound scientific advice provided’. An attitude prevails that there is only so much they can do to ensure decisions are made in the best interests of the environment, rather than those of one or two industries.

Phrases such as ‘a lack of political will’ and ‘our hands were tied’ abound among those once close to the authority’s internal decision-making.

One internal source said the authority and department has been effectively hamstrung by the mining and ports industry at both ends of the environmental assessment process: at the applications stage, where industry pushes for departments to grant speedy approvals, which they argue, should go ahead due to the government’s deteriorating budget situation, and at the political end, through influence exerted on those making the final decision. ‘It’s not necessarily a bad thing – this is how a government and democracy works. But it can become a bad thing when those lobbying government are not concerned at all with

benefitting the environment; their only concern is getting their end product to market.’

Another change to the authority’s structure, questioned by numerous close observers, came in 2006, after a review of the Marine Park Act recommended vesting one person with the two most senior roles governing the authority. Ensuing reforms appointed the same public servant with both the chief executive and chairman’s positions.

While it may not have given rise to any actual conflicts of interest, many question whether it was an appropriate move, given the need for independent oversight of the agency tasked with managing such an important public asset. Certainly, in corporate governance circles, it is regarded as an anomaly among public institutions, and has simplified the authority’s relationship with the minister ultimately responsible.

The evolution of what was once the Great Barrier Reef Ministerial Council further illustrates the slow decline of the authority’s voice at the political level. In 1979, four years after the Great Barrier Reef Marine Park Authority was created, political momentum was such that the Ministerial Council was formed, a candid opportunity for state and federal ministers to discuss the reef’s future. In addition to a statutory body controlling its management, the Great Barrier Reef now had a formal voice and recognition at the highest levels of Australia’s political system that it needed to be well managed.

Between 1979 and 2009, the council met 32 times and became the key setting for high-level talks resulting in numerous initiatives to protect the reef including the original \$200 million Reef Rescue package that now forms a key part of the authority's work. It continued largely unchanged until a 2011 review of the COAG ministerial system resulted in its abolition, as part of wider reforms to COAG councils. Replacing it, a ministerial 'forum' was created, where state and federal environment ministers continue to meet once or twice a year to discuss reef issues. While the forum meets the needs of the intergovernmental agreement on the reef, it holds no formal weight at COAG.

The abolition of the ministerial council meant the end of a formal, recognised voice for the reef in the highest political forums in the country, at a time when it was coming under increasing pressure.

**A**n island continent, long isolated from the rest of the world by virtue of its remote location, Australia has, since settlement, depended on the import of foreign manufactured goods by sea. Similarly, the nation's economy has been driven by exports of resources, both natural and cultivated, through the ports.

Along the Queensland coastline, north of the state's capital, ports have driven much of the growth of the region's economy, attracting people to work and creating economies supporting the workers who operate them. Of

the 20 ports which dot the Queensland coastline, 12 are within the bounds of the World Heritage Area and five are considered major 'reef ports'. The ports at Gladstone, Abbot Point, Cairns, Hay Point and Townsville have been highly valued public assets, and are controlled by four government-owned corporations. Of these, Cairns and Townsville remain largely tourist ports, while Townsville also has a key role due to the large defence barracks in the city. The cranes and coal loaders that distinguish the ports and their growing industrial precincts from the coastal towns built around them are a vivid contrast to the underwater Eden that still exists in many pockets of the reef. Visitors to the Great Barrier Reef do not come from around the world to see the grey dust and relentless machinations of such places; it is the ethereal world under the waves and picturesque islands above that remains the trump card for travellers seeking relaxation, recuperation and an incomparable experience.

However, these ports remain the engine rooms of Queensland's economy. And the trade figures illustrate that resources are the main game. The trade of the tourism ports of Cairns and Townsville, at a total of 13.17 million tonnes in 2012–13 was dwarfed by the resource ports of Gladstone, Hay Point and Abbot Point, which in the same year exported just shy of 200 million tonnes of minerals, the vast majority of which was coal.



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Abbot Point remains Australia's most northern coal port, Gladstone the largest multi-commodity port in the country and Hay Point one of the largest coal ports on the planet.

The numbers are astonishing, with these three coal ports making up almost 70 per cent of all trade volumes in Queensland in 2012–13, or put another way, more than two-thirds of the \$44 billion that make up the state's total exports. But those volumes will soon undergo yet another surge, with LNG now flowing from the first Gladstone plant and new coal mines in the west in early 2015, the dredging proposed near the reef will likely grow.

Between 2000 and 2012, sea dumping of capital dredge material in the reef World Heritage Area was about 14 million cubic metres. But over the next decade, projects already underway and planned could see some 43 million cubic metres of spoil dumped in the reef's World Heritage Area. While the numbers are hard to grapple with, WWF Australia has estimated just one of the proposals, to dredge some 3 million cubic metres of sediment at Abbot Point, would fill some 150,000 dump trucks. Extrapolating such estimates, however fraught, could see the equivalent of 2.15 million dump trucks of sediment dumped in the World Heritage Area over the next decade.

However, as the Queensland Ports Association wrote in its submission to a 2014 Senate inquiry on the reef, such development is an essential part of growing the national

economy. ‘Clearly, our port network is a fundamental precursor for continued economic growth and prosperity,’ the submission reads.

Publicly, the industry also points to its members’ strong commitment ‘to environmental sustainability and ensuring that the World Heritage values in and surrounding port areas are conserved and protected’. The ports and the resource industry driving their expansion have maintained, in the face of growing evidence to the contrary, that the effects of dredging and dumping of sediment near the reef is only ‘temporary and localised’.

Today, the ports are the nexus of Queensland’s industrial complex. Without them, the Queensland resource industry as we know it today would not exist. But, as the ports have grown, so too has the state government’s reliance on the royalties provided by the industry.

And it has writ large the question of balancing the interests of the public and environmental good with the economic gains, particularly for those owned by the government. The power that has come with their integral position has, as one Marine Park Authority staffer put it, led the largest bulk commodity port, on the central Queensland coast to become ‘a law unto themselves’.

Nowhere has the trade-off between environment and economy – and how swiftly and devastatingly it can be mismanaged – been better illustrated, than in Gladstone harbour.

In the southern reaches of the reef, the Bailai and Gooreng Gooreng people named their waters and lands *Koongo*, ‘place of water’ and *Yallarm*, ‘place of shells’.

Sailing by night in 1770, Cook missed the large natural deep-water harbour at the reef’s southern end, although Flinders in his mission to circumnavigate Australia and identify potential development areas about thirty years later did not. Where rolling, eucalypt-studded hills meet the soft, lolling waves; he named Port Curtis in honour of an admiralty benefactor. The settlement to which it gave rise fifty years on would be named for the politician destined to become ‘The Grand Old Man of British Politics’, Prime Minister William Ewart Gladstone.

It became the region’s chief service town, its meatworks at Parson’s Point, established in 1896, operating for nearly seven decades. Now Queensland’s largest bulk commodity port, the town’s wharves first began operating 100 years ago, initially exporting small numbers of live horses and cattle.

By the early 1960s, however, the works was failing, due to a lack of capital expenditure and rising health standards for meat in the United States. As two-thirds of the town’s population of 6000 depended directly or indirectly on the works, its closure just before Christmas in 1963 was pronounced by the *Observer* to be ‘A Body Blow for Gladstone’. Fortunately for the town, a state election loomed, and Premier Sir Frank Nicklin seized on a plan

nurtured by Comalco and the American giant Kaiser to establish an alumina refinery, drawing on the red bauxite earth of the Weipa region of northern Queensland, on the site of the meatworks. The investment decision was hurried through; Nicklin, 'the Gentleman Premier', retained power. Politics and business have long worked hand in glove in this area.

Not that the relations have been free of contention. When the first alumina trickled from the kilns in June 1967, Queensland Alumina's chairman Sir Maurice Mawby forecast that Gladstone would become one of 'the great industrial towns, perhaps not just in Australia but of the world'. Yet the throes of its expansion, involving great quantities of imported labour, caused enormous upheaval, overtaxing local medical, school and recreational facilities.

In 1971, a quarter of Gladstone's population lived in caravans, and there followed quite staggering levels of civil disobedience. In September 1972, one such incident involved the theft of 600 sticks of gelignite from a magazine of the Gladstone Harbour Board, used to blow up a 30-metre electricity pylon near Glen Eden, blacking out 175,000 square kilometres of Central Queensland. Tabloids who imagine us to be living in times of unexampled extremities of protest have forgotten how belligerent industrial confrontation once was.

But if the creation of the Great Barrier Reef Marine Park Authority in 1975 initially negated the offshore

threat of oil drilling and limestone exploitation on the reef proper, it has had little control over events onshore. Gladstone's population more than trebled in the decade after the alumina plant's opening; there followed an aluminium smelter on Boyne Island, then a giant power station and clinker plant, again outstripping the city's coping mechanisms.

In October 1979, the ABC's *Nationwide* presented a report portraying Gladstone, now a city, as 'ugly-scarred, polluted with the potential to be an environmental disaster area'. The ABC's *Four Corners* and *This Day Tonight* followed along similar lines, as did the *Australian* and *The National Times*. Only by a concerted campaign of civic beautification did Gladstone briefly shrug off a reputation for stifling industrial ugliness. In August 2014, after almost annual programs summarising recent developments, *Four Corners* said the town was at the centre of 'an environmental fiasco'.

Today, the town of 31,000 is still dealing with that 'fiasco'; the social and environmental fallout of a further surge, on the back of two key commodities. Essential for steel-making and electricity generation, the coal buried beneath the alluvial plains of the Bowen and Surat basins now accounts for 70 per cent of total traffic through the port – 50 million tonnes of it a year, the bulk of it bound, as for most of the last fifteen years, for China and India.

At night, the decades of industrialisation have lent the town an eerie glow, as the lights of homes turn out, the coal port, processing plants and power station remain lit, every hour or every day, as any break in the supply chain means lost time, lost money.

But there is more to come – far more – and it will set the whole coastline afire. From next year, thermal coal could be being extracted in huge quantities from the Galilee Basin, a vast expanse of land west and north-west of Emerald in central Queensland, long home to cattle producers, Indigenous locals and few others. At least 30 million tonnes will come from Alpha Coal, a joint venture of Gina Rinehart's Hancock Prospecting and Indian power giant GVK. Politician Clive Palmer's Waratah Coal mine hopes to achieve similar heights, despite a rail-access battle with the Newman Government.

Biggest of all will be the Carmichael Coal Mine owned by India's Adani Group, approved in July 2014, which intends to shift 4 billion tonnes of coal in a mine life of 90 years to feed yet-to-be built power stations on the subcontinent. The exploitation of the remote Galilee coal reserves will require more than 500 kilometres of railway lines, leading to new export docks proposed at Abbot Point, near Mackay, in the central region of the reef coastline.

Just as Rinehart and other miners were eyeing off the Galilee, other savvy explorers were looking to central and

southern Queensland and the rich farmlands of the Darling Downs in the search of the high value gas trapped in coal seams across the state. While the technology to allow the fracturing of coal seams and release of the valuable gas within had existed for years, the interest in exploiting the extensive reserves experienced a marked acceleration in the latter years of the first decade of the 21st century.

Queensland had relied on the gas fields for domestic supplies for more than a decade, but larger forces were driving the exploration and expansion during the early 2000s. When the United States began exploiting its coal seams to reduce its reliance on foreign oil and coal, the world was watching, and studious investors and explorers in Australia began snapping up tenements across the state. The tenements that held the reserves would, in little over five years, be identified and drawn together under a host of domestic holding companies, before being on-sold to the giants of the international gas industry – British Gas, Santos and PETRONAS, Shell and ConocoPhillips.

As these multinational interests began buying into Queensland's booming gas expansion, the projects dictated that the nearest viable port should be used to freeze and process the gas into exportable LNG, before loading it on to ships to deliver to the world.

All looked to Gladstone and the nearby Curtis Island, the single largest island in the Great Barrier Reef World

Heritage Area, where preparations were already well underway for the arrival of the multinationals.

In early 2008, the then-Labor state government signed off on changes to the 'state development area' in Gladstone harbour – expanding the area of land put aside for future industrial developments from 22,000 hectares to more than 28,000 hectares – including almost half the World Heritage-listed Curtis Island. To this day, the state's Department of National Parks describes the island of 'wind-sheared scrublands, diverse birdlife and pristine beaches' as 'one of the hidden secrets of central Queensland'. Among the many species of native mammals, birds and plants, the island's mangroves and coastline is home to the listed 'vulnerable' flatback turtles, the Capricorn yellow chat and numerous other migratory shorebirds.

The precinct expansion was vital, then-Labor Deputy Premier Paul Lucas said, to secure the burgeoning \$17 billion worth of planned LNG developments. 'With companies already lining up for gas projects, Queensland has the chance to become a major exporter thanks to untapped coal seam reserves in the Surat and Bowen basins. The Bligh Government is committed to planning for the future of this potential industry that could inject billions of dollars into Queensland's economy.'

He said 'consideration' would be given to 'rehabilitation of any degraded land, protection of areas of high ecological

value' and other uses of the land that 'could be compatible' with the industrial powerhouse. But on the consistency of such developments with the World Heritage status of the island, the state government was mum.

The decision sparked indignation among local environmentalists and wider concerns in the community. For one geologist, smelter worker and president of the Gladstone Conservation Council, Jan Arens, the decision was based on what he believes were false claims that the island was already 'heavily degraded' and overrun by feral animals. 'It's a World Heritage property, and when they came to town and said it's heavily degraded, its rubbish, it wasn't true,' he said. 'It wasn't heavily degraded until they start clearing it for the gas plants, prior to that it was in relatively good nick.'

Government records show the Curtis Island industry precinct was put aside to cater for 'gas transport infrastructure' and 'high impact industry limited to natural gas'. The documents also show the southern half of the island could, in the future, house 'extractive industry', but rules out 'all other uses' of the land. While no mining or gas extraction has happened, the fact that the government supported such operations on the island stands in stark contrast to the island's World Heritage status, under which mines are expressly forbidden.

The island had long been part of the Gladstone Port Corporation's master plan, a strategy aimed at developing

the remaining areas of the harbour, the mangrove-rich areas of Port Alma and the Fitzroy delta and the northern end of Curtis Island.

The excision of most of the southern half of Curtis Island from the reef's World Heritage Area illustrated the considerable influence of the ports and resources industry on political decision-making in Brisbane. A similar picture emerges of the industry's sway in the nation's capital.

In April 2009, after departmental staff consulted exclusively with the ports industry in 2007 on potential changes to the Sea Dumping Act, then-Federal Environment Minister Tony Burke quietly adjusted the regulations governing the dumping of dredged spoil at sea. The regulatory change would slightly increase the fees charged on applications for sea dumping permits, from \$16,500 to \$23,500 for most dumping permits.

But it would also remove key distinctions in the way the dredged sediment was defined. The changes eradicated legislative distinctions in the regulations between contaminated and non-contaminated material, and environmentally sensitive and 'non-environmentally sensitive' areas. The distinction was described as 'an unnecessary level of complexity' and that the environmental sensitivity of proposed dumping areas was already considered as part of the 'planning process'.

On the back of new guidelines for sediment testing for dredging projects released in 2009, the changes would allow

the ports to dump potentially more damaging material in more sensitive marine areas than had been allowed since the laws were brought in 1983. But, like much of the environmental assessment system, the guidelines relied on the industry's transparency with regulators about what potential contaminants may lie dormant in sediments.

While the guidelines demand tests for a raft of potential contaminants, many were not included, guideline co-author and CSIRO sediment specialist Graeme Batley said, on the realistic grounds that 'you can't test for everything'. Rather, the onus was on ports and industry contractors to be up front with regulators and test for any other potential contaminants that, if dredged and re-suspended, could cause environmental harm.

In the months following the change, the Australian Government received several sea dumping applications in the reef's World Heritage Area. A signatory to the UNESCO's London Protocol on Sea Dumping, Australia has, since 1985, reported its projects to dump dredge spoil, sink shipwrecks and other marine dumping activities each year. Between 2006 and 2010, Australia reported an average of 10 approvals a year, mostly of small amounts of spoil dumping for maintenance dredging projects. The largest project during that period was for the expansion of the coal terminals Hay Point, south of Mackay, of 8.6 million cubic metres of spoil. But there was more to come.

The following months saw three new sea dumping applications for capital dredging in the Great Barrier Reef World Heritage Area – two in Gladstone, one for coal wharves and the second for the LNG industry, and another coal export expansion at Abbot Point.

On a scale never before seen, the Gladstone Western Basin dredging project would be the largest single dredging project proposed in the World Heritage Area's history, with 46 million cubic metres of sediment to be dredged from the sea floor inside the World Heritage Area and on the boundary of the marine park. About 11 million cubic metres of that would be dumped offshore in a designated dumping ground, with much of the remainder to be used to reclaim a vast area of the harbour behind a bund wall and set aside for future development.

The other, a coal expansion at Abbot Point, was initially of similar scale, before the state government realised there was little demand for the 'multi-cargo facility' project. Instead, the Abbot Point project would be limited to a 3 million cubic metre dredging and dumping proposal, for new coal terminals, for the Galilee miners.

At both state and federal levels, the seeds of a massive LNG industry and new coal expansion were being sown. But neither the regulatory change, nor the excision of almost half of the largest island in the Great Barrier Reef from the World Heritage Area would immediately reach the ears of the international community. Despite

the burgeoning developments inside the World Heritage, the Australian Government failed to tell the international authorities it had already approved three LNG plants on Curtis Island – decisions which have not since been publicly explained.

**A**lmost two years after the excision of the land, as gas drilling and pipeline construction was ramping up and coal miners were preparing environmental impact statements for what would be the largest coal mines in Australian history in the Galilee, a meeting was held in Paris, France.

Among the many agenda items at the 35th session of the World Heritage Committee on July 7, 2011 was the future of the Great Barrier Reef; the result, a stern reprimand and call for more action. The committee noted ‘with extreme concern’ that Australia had approved ‘LNG processing and port facilities on Curtis Island’ within a World Heritage Area.

The approvals sanctioned major industrial developments on an island, which formed a key part of an ecosystem regarded as having among the highest ‘outstanding universal value’ on the planet.

In its report, the committee further noted Australia had failed to report the approvals of the gas plants and port expansion to UNESCO, urging the nation to report any further planned developments. On the back of the

LNG approvals, the committee also urged Australia to complete a ‘strategic assessment’ of the entire Great Barrier Reef and begin work on a long-term plan for ‘sustainable development that will protect’ the reef. The committee further requested that it be ‘invited’ to conduct a ‘reactive monitoring mission as soon as possible to consider the state of conservation of the property as a whole’. The diplomatic language masked what was essentially an international condemnation that Australia, long regarded as a responsible environmental steward of the reef, had failed in its own responsibilities to tell the world the values of the World Heritage Area were not above the reach of the resources industry.

It was the first global acknowledgement that something had already gone terribly wrong.

**I**n September 2011, the uneasy coexistence that had grown over many years between Gladstone’s fishing community and its ever-growing heavy industry was fatally severed.

After months of reports of dead turtles and other marine life turning up on the beaches and fishermen reporting unusual rashes and lesions on fish in their catches, the harbour was officially closed by the state government, amid headlines in the *Observer*, declaring it ‘contaminated’.

The month-long fishing ban struck at the heart of the town’s longest-standing industry, dividing many for and

against the industrial development that was consuming the region. Coinciding with the largest dredging project in Australian history, any links between the fish disease outbreak that sparked the belated closure and the development have been repeatedly denied by the port corporation completing the work for the gas companies. But it changed forever the attitudes of many locals to the development, and the wider reputation of the town and the Gladstone Ports Corporation in the minds of those who had never visited.

In a town long used to heavy industry, then-independent state MP for Gladstone, Liz Cunningham said the LNG dredging project that preceded the harbour closure was ‘one step too many’, tipping the social and environmental balance. Despite an implied role as a government body to operate the port and do so responsibly, she said the Gladstone Ports Corporation had ‘never been the protector of the harbour ... It’s been mentioned numerous times over the last 10 years that its primary focus was development,’ she said.

Part of the problem, Cunningham and many others believe, was a conflict of interest at the heart of the state government:

Was it both the regulator and operator? Yes it was. But it would say it’s not the regulator, it would say the Department of Environment and Heritage was the regulator. Our community has been quite supportive of industrial development; there are people with concerns,

but in the main most people have been supportive of industrial development. But they don't want to be treated like mugs, and they *won't* be treated like mugs.

The community and Cunningham watched as the ban stopped dead the fishing industry in the region, and the division began to eat away at the town's social fabric. 'We lost a lot of fishing families here, it was tragic. Around the corner from where I live there was a commercial fisherman, he was young but that was all he'd known – he lived with his wife and family. He ended up working separate from his family and had to sell his family home, he moved down to Bundaberg to fish, and I don't know now if the family's back together again or not. And that wasn't an isolated incident.'

In little more than two weeks, Ted Whittingham, the owner with his son Simon of the Gladstone Fish Markets, saw a lifetime of hard work dissolve.

The markets, which brought in about \$16 million to the town and state's economy, employed almost 150 people, processing scallops, crabs and fish for southern domestic markets and overseas buyers in Hong Kong, Singapore and across south east Asia. Once one of the town's biggest employers, it now struggles to keep on 20 employees.

'We were the second largest exporter of scallops in Queensland, much of it to Hong Kong and Asian markets. Overnight, we went from about \$16 million turnover a year to about \$2 million. That was more than two years

ago and it hasn't come back.' Whittingham said the fish disease outbreak and continued uncertainty about the causes has destroyed the region's reputation as a reliable, safe source of seafood. 'In terms of reputational damage, it's buggered,' he said.

The fishing ban prompted the state government to initiate an investigation into the causes, enlisting an independent scientific panel to look into the fish diseases and report back in March 2012. But Whittingham said neither the wider public nor the state government authorities really wanted to look into the matter. 'They don't want to know. The truth of the matter is this issue appeared more in the Hong Kong press than in Brisbane or Sydney. When we were saying there's something wrong here, the state minister and Department of Environment were saying there was nothing wrong with it.'

While the panel in 2012 reported largely inconclusive results, it found more research was needed into the disease outbreak, and could not rule out the influence of either the floods several months earlier or the ongoing dredging. It was the first of two investigations into the harbour's management, but the results did not entirely satisfy either the fishing industry or the port. The panel was only able to review information provided by the state government or port itself, and were hampered by a lack of information. At every point, the port would deny any links between the dredging project and the recurring problems in the

harbour, pointing to the flood and influx of fresh water into the estuarine harbour and to the unquantified estimates of 30,000 barramundi that travelled downstream, placing pressure on food stocks.

One of the closer observers of the ongoing controversy, Jan Arens described the situation as ‘information asymmetry’. Backed by the local conservation council, he was among several groups who filed Right to Information requests with the state government for data about the conditions in the harbour. Despite the federal government approval demanding the port release such information should it be requested, Arens’ and others requests went ignored.

‘All I’m left with is piecing it together in retrospective, and it’s only two years later that I’m starting to see a little bit through that and it looks a little bit murky, and there’s a whole heap of stuff that should have been sending loud alarm bells at the time.’

Ted Whittingham said the ban and the ineffective investigations further divided the town’s fishing industry. When one fisherman, Trevor Falzon, decided to take action in the courts in 2012 against the project, Ted and Simon signed up. The class action was the first of a series of protracted and ultimately fruitless legal battles, with Falzon and other fishermen arguing millions of dollars of losses from fishing grounds destroyed or disturbed by the dredging project. It was based on a compensation clause in the state government’s initial

approval of the project that fishers would be paid for lost grounds.

The original case would, eventually, be thrown out on the grounds the class action could not include the Gladstone Fish Markets. Despite the fishing industry being dependent on the processors, the markets were not legally defined as fishing businesses. It meant the Whittinghams now had no legal recourse for their massive losses. The ruling was catastrophic for the family, affecting Simon's health and, Ted said, ruling out any real chance Simon's young children would have a future in the industry. Being in Gladstone was too sensitive, and the Whittinghams left town.

Ted said the fall-out from the case was divisive:

A lot of them (fishers) don't even talk to us anymore – we've got a lot of support from some people, but some believe we're just fighting it for compensation and money, and that's been fostered by the Gladstone Ports Corporation. We know we're not going to see what we invested back, but what ... we need to have some hard and fast rules set down about development. And it's about the truth. The support we've been given by the community is about that – the community has been lied to, and they want the truth just as much as we do.

But truth was a rare commodity.

After months of investigation and taking samples of fish and other marine life in the harbour, the state government's scientific panel released its final report in January 2012.

The panel took more than 70 samples of fish collected during the final months of 2011 for toxicology testing, and reported finding some levels of heavy metals and other chemicals of concern in the fish. But the depth of its investigation was limited by a strict reporting timeframe. The results of tests on 63 samples of fish and marine life were still pending when the report was due. They have not since emerged in public.

The original testing regime also did not include many toxic heavy metals including mercury and lead and it would take public exposure of those oversights for such chemicals to be included. But the absence of most of the final test results meant the panel's final determination was based on a tiny fraction of the evidence it could have used. The final report showed that the floods and other factors were likely at play, including parasites. But it also could not rule out the role of dredging in affecting the health of fish, hampered by the lack of test results and a lack of information from the port.

Then port chief executive Leo Zussino pounced on the largely inconclusive results, saying the report 'states conclusively that toxicology results from the samples of fish taken throughout the harbour prove there is no link from the fish disease to dredging, or the disturbance of material caused by dredging ... It is now clear from this report dredging is not the cause of the diseased fish found in Gladstone over the last nine months.'

But the public was not convinced, with media reports prominently showing the investigation came back mostly inconclusive. Before the results were even reported, the port had enlisted the CSIRO to conduct its own investigation, specifically focused on heavy metals in sediments.

In an effort to find the real causes, the fishing industry set up a ‘fighting fund’, enlisting the help of aquatic veterinarian Matt Landos, to conduct an investigation independent of the state government. Landos spent weeks on the water and months of his own time looking for any possible links between the symptoms in the fish and the dredging project. While his investigation was also reliant on the original information available, he found marked levels of heavy metals, questionable levels of turbidity, and potentially toxic algae that may have affected the fish.

Released in September 2012, his work looked at the symptoms of the fish and traced them back, finding the floods had played a minor role, if any, in the diseases, and parasites and the dredging project were most likely to blame. The Gladstone Ports Corporation immediately responded, denying any link between the project and the outbreak, and attempting to discredit Landos’ work. It released an unattributed statement, saying his report ‘does not provide any evidence which supports the contention that the health of aquatic species is linked to the dredging being carried out by GPC. It is very important to query the anecdotal evidence given in this report as fact.’

It was the first of many public attacks by the Gladstone Ports Corporation on Landos, one of few credible scientists questioning the line from the port and state government. To reinforce its argument, the GPC paid two other scientists, the CSIRO's Dr Graeme Batley, and University of Tasmania's Barbara Nowak, to review Landos' report. The two reviews, released publicly and used in evidence in a Senate inquiry into a Greens bill to enshrine the World Heritage Committee's recommendations in legislation in 2013, found some weaknesses in his report, which Landos refutes.

Nowak's report validated many of his conclusions, while Batley's refuted out of hand any role the dredging may have played. His review further reported that there was 'no evidence the loss of habitat and food sources were the sole cause of the fish disease outbreak', despite Landos never actually making such claims. On balance, each of those scientists, as well as the original scientific panel that prompted the responses, all found dredging could not be ruled out as a likely contributor to the fish diseases, and possibly the key unassessed cause.

Irrespective of the uncertainty of the actual situation, the two reviews served their purpose. Leo Zussino in May 2013 used them as evidence to a Senate inquiry in an attempt to further discredit Landos and Dr Andrew Jerimijenko, who was also outspoken about potential human effects from harbour waters, after diagnosing

problems in fishermen spiked by barramundi. Zussino wrote the pair had developed:

[A] particular point of view on dredging in Gladstone and are relentlessly pursuing their perceived concerns without any regard for providing any real evidence that supports their claims ... It concerns GPC that these gentlemen continue to present information in the public arena that is either factually incorrect or are assumptions that are not substantiated with the support of any scientifically defensible evidence.

In one foul swoop, the port had effectively discredited two of the most outspoken figures investigating the problems in the harbour. And while both defended their record, and roles as experts in aquatic animal health and human health, the attack on their credibility had a chilling effect – most of the rest of the scientific community kept out of the ‘public arena’.

In July 2012, the port released a media statement informing the public that dredging was temporarily suspended. In a side note to the suspension, the unattributed statement said the dredging was stopped due to ‘extreme tidal movements’ and that a ‘further contributing factor has been the porosity of the newly created bund wall at Fisherman’s Landing’. The brief reference to the bund wall leak was largely ignored and initially received little press, serving to minimise public concern about the issue. But the Gladstone Ports Corporation had already known for more than six months that the bund wall, built to

contain sediments dredged during the project, was leaking ferociously.

A November 2011 memo kept behind closed doors at the port offices for almost two years, revealed the bund wall was leaking at a rate of about 50kg of sediment a second, since June 2011. The spread of potentially toxic acid sulphate soils from the leaking bund wall was modelled by port contractors.

But the modelling was not given to the panel investigating the fish disease outbreak, nor the wider state government or federal government. It wasn't until reports in the *Australian* in December 2013 raised the pressure, that the memo and other documents were quietly released on the port's website around Christmas 2013.

The documents revealed that the huge rises in turbidity in the harbour in the weeks leading up to the September 2011 harbour closure were consistent with 50kg/s of sediment leaking through the wall, in addition to several different dredgers operating simultaneously in the harbour. 'These results indicate that the porosity of the bund may be the key cause of widespread elevated total suspended sediment levels, since material discharged into the reclamation area by the cutter suction dredge can migrate into the harbour. Note that elevated levels observed on the mudflats north of the reclamation area are consistent with the model results from the 50kg/s discharge case,' the memo reads.

Around the same time, the port's key water quality monitoring contractor, Vision Environment, had reported to the port that the leaking bund wall was the likely cause of a huge toxic algal bloom that spread across the harbour. The effects of the algae, the Vision memo showed, were consistent with the symptoms reported in fish and other marine life, and were likely a key part of the disease outbreak. Again, the bloom was overlooked in the state's investigation because the information was not reported. The port had received this information and the bund wall memo within months of the harbour closure. For more than two years the port dismissed any claims the dredging project could be affecting the harbour, all the while having such information at hand and not releasing it.

The concealment of such evidence from both the state government's panel and the wider community had effectively misled the public and prevented the problem being fully investigated in a timely fashion.

And it was not the first time the port had omitted information from regulators, with more than one source close to the project confirming there was a strategy of information suppression at the port long before the LNG expansion.

Asked what the port's modus operandi was regarding the control of information about the project, this was the verdict of one source close to the project, who asked not to be named:

I think that GPC are very good at omitting information

and obfuscation. However, I do think that GPC tell the State and the Commonwealth a lot of information, but not all of the information; [it's] sins of omission ... Often recommendations would be made and GPC would not act on the recommendation. Or they reported the recommendations and did not agree with the recommendations so they delayed action. Also, I think the Commonwealth government was good at ignoring recommendations or issues on some occasions.

One particular case of suppression provides a reliable example of the opaque nature of the port's efforts to keep things out of the public arena. In 2009, as the community was getting used to the idea there would be a massive LNG plant and export terminal on their doorstep, Central Queensland University's Dr Scott Wilson completed a research project, funded by the university and the port.

The latest update on research into the effects of tributyltin (TBT) on molluscs in the harbour, the study found rising levels of TBT contamination in the region of the RG Tanna Coal terminal. TBT, a highly toxic chemical that was once used in anti-fouling paints on the hulls of ships and boats, was banned worldwide in 1989 on small ships. A ban on large ships did not come to pass until 2008, and the chemical's effects are still felt in many harbours around the world. Including symptoms such as 'imposex', or the growth of penises on female molluscs, the chemical has wider effects on many marine animals and fish, centred on the suppression of the immune system in small doses, and can be potentially fatal in acute exposure.

Wilson's study found the legacy chemicals were still present and rising in key areas where dredging was about to start, as part of the 2010 capital dredging project, but also in the vicinity of the Western Basin project. His study recommended wide testing of sediments to ascertain the prevalence of the chemical, before the dredging began. It also demanded the testing include not only TBT, but also its lesser but still toxic breakdown products dibutyltin (DBT) and monobutyltin (MBT).

The study, however, did not see the light of day, and while the port tested for TBT in more than 1000 sediment bores, it took no action on Wilson's recommendations to test for the longer-lasting breakdown chemicals DBT and MBT. These chemicals were not demanded in the testing guidelines, and were ignored. As to whether the dredging may have played a role in the fish disease outbreak, Wilson said it probably was a factor, 'but not a broad scale factor ... It's probably a multitude of things, but if the dredging was, it was probably a localised factor.' As to whether the study should have been reported to the authorities, he confirmed it 'was one potential factor' and 'probably should have been reported'.

The study, on a chemical which may have been dormant in potentially toxic levels in sediments in the area, was similarly not reported in the environmental impact statement for the Western Basin project. The port had buried it, and along with it, any chance the chemical

could be taken into account by the series of investigations into the fish disease outbreak.

The omission in this case was likely a breach of federal environmental law under the Environmental Protection, Biodiversity and Conservation Act, which demands proponents report any such relevant information. But, when raised publicly in the media, regulators in Canberra took the port's word it had no influence and did not need to be reported.

Suppression of such information illuminates an organisation that did not feel beholden to the oversight mechanisms of national environmental law. It also exposed the broader failings in the environmental assessment system, which despite years of efforts to create a workable system had all but failed the Gladstone community.

Leading environmental writer Tim Flannery surmised the wider situation in his 2012 *Quarterly Essay*, 'After the Future': 'Regrettably, the basic tools that government needs to provide adequate environmental protection are slipping from its grasp.'

Dr Veron described recent decisions, such as an approval of a dredging project at Abbot Point, as a 'shocking' one, which 'takes us back to the Bjelke-Petersen years'.

In blunter terms, Prof Jon Brodie said the assessment process, largely controlled by developers, was corrupted by a lack of independence:

Number one – it's corrupted in the sense that the contractors that do the environmental impact

assessments are contracted by the developer, paid by the developer, and in some sense are expected to get the right results. Even if they want to do a good job, they have to tender on the design they are given, not necessarily what they thought to be a fit design.

With Dr Wilson's study gathering dust, when the harbour was closed and questions were circling about the rigour of the state government's investigation, the port enlisted the nation's chief scientific body to help study metals in the harbour's water and sediment.

A team of CSIRO scientists travelled to Gladstone, completing a swift three-day 'snapshot' of water quality on which to base the report. In December 2011, Leo Zussino welcomed their trip, paid for by the port, saying such 'independent oversight' was an 'invaluable part of the dredging project'. But laying bare the intentions of the study, he also said the CSIRO had come on board to 'validate for the Gladstone community that the water testing regime we have in place is accurate, thorough and scientifically sound'.

The study was later used as further evidence dredging was not to blame for the fish disease outbreak, and it supported such conclusions, finding that the absence of high metal concentrations of the metals tested supported the finding that 'the current dredging operations have not elevated dissolved metal concentrations'.

However, the study was based on a previous, and by then out of date study on metals in Port Curtis, from 2004.

In 2005, a more rigorous and up to date study had already been completed in the harbour, in an effort to guide future studies of contaminants in the region, titled 'A Risk Assessment Approach to Contaminants in Port Curtis'. Published in the *Marine Pollution Bulletin*, the study found TBT among the chemicals that should be tested in future studies of contaminants in the region. But, as the CSIRO study was instead based on earlier work rather than the latest scientific findings, the chemical was again ignored.

Prof Brodie, who has reviewed the study, said: 'They did do metals, but the TBT wasn't included and still isn't included to this day. The one pollutant that was definitely present and published was not being monitored at all.'

Just as the fish disease outbreak was most likely a confluence of many different factors, the mismanagement of the entire dredging project – from the warnings in 2009 that were ignored to the suppression and omission of information in the ensuing years – was perhaps best described by one senior marine park authority employee as a 'perfect storm of factors'. It could 'all be traced back to a failure of the planning process', the source said.

Two reports released in 2014 serve to illustrate how the regulatory system had buckled under the pressure, both specifically at Gladstone, but also across the federal government's wider remit to protect nationally significant environmental assets. The Gladstone bund wall review, an extension of the independent review demanded by the

World Heritage Committee, found a host of ‘deficiencies’ in the regulation of the project. Due to limited terms of reference, the review was unable to investigate the fish disease outbreak.

However, it did find that oversight mechanisms had failed on a range of fronts. Among many other issues, the review confirmed that there were ‘inconsistencies in the decision-making process’; ‘inadequate resources applied to compliance monitoring, including poor record-keeping and inadequate follow-up when breach allegations persisted’ and a ‘lack of coordination’ between state and federal governments ‘particularly on compliance monitoring’. Through the gaps in coordination and resources, a lack of follow up on breach allegations and poor record-keeping, the ‘environmental fiasco’ in the harbour had slipped.

Across the wider regulatory system, the Australian National Audit Office’s 2014 report on the federal Department of Environment’s management of compliance with major projects reported similarly shocking findings.

It found that ‘nearly 14 years after the enactment of the Environmental Protection, Biodiversity and Conservation Act, the department is yet to establish mature administrative arrangements to effectively discharge its regulatory responsibilities’. It also revealed the department had adopted a ‘generally passive approach’ to compliance, which was ‘also evident in its approach to the management of non-compliance’.

The audit office's dry bureaucratic report further officially acknowledged the extent of shortcomings in and challenges facing the compliance team 'does not instill confidence that the environmental protection measures considered necessary ... have received sufficient oversight over an extended period of time'. It was more than a failure of the planning process. The system was indeed crook, and in Gladstone, it had failed.

**W**hile the failures in Gladstone represented the worst-case scenario – a development in the reef's World Heritage Area of an unprecedented scale that ran virtually unchallenged – it was essentially a local problem. But as concern about expansions at Abbot Point increased, all the five 'reef ports' would heed the lessons learnt.

Despite four of the five corporations running the major 'reef ports' being owned by the state government, in private these corporations have not always acted as public servants and protectors of the state's interests, both economic and environmental.

Taking what seemed to be a lesson from the private sector, these corporations, with the later privatised Port of Brisbane joining them, in 2001 officially incorporated the Queensland Ports Association (QPA) to represent their interests to the state and federal government and the Marine Park Authority. More than 13 years on from its inception, the association still has no website and little public presence.

Unlike most industry associations in Australia, it rarely engages directly in the public debate. Interview requests sent to one of the association's key members involved in recent lobbying efforts were declined.

Instead, it seems to have managed the agenda and debate through manipulation of the very policies meant to protect the reef from industrial development. There is no better example of the ports exercising influence than the QPA's role in the development of the latest dredge modelling science on the reef, laid bare in hundreds of pages of communications and internal policy documents released under Freedom of Information applications by environmental groups over recent years.

Despite the apparent lack of need for government-owned corporations to have a body to lobby either state or federal governments, behind the scenes, the association has done just that. The ports effectively used an unlisted lobby group to quietly change the direction and impact of the latest science on port operations up and down the reef's coastline, in an effort to protect the coal industry's interests and royalties flowing to government coffers.

In July 2013, after more than a year of work, the Federal Government released a technical report on improving the management of dredge spoil dumped in the reef region, as part of the wider strategic assessment the World Heritage Committee demanded in 2012. The study was the first to quantify the potential spread and re-suspension of dredged

sediments dumped offshore. Most importantly, it found ‘the potential for dredge material to migrate over larger spatial scales and longer time scales than had previously been appreciated’. It was the first study on the reef to incorporate the effects of tides, winds, oceanic currents and waves on dumping sediment over a 12-month period.

The study recommended further research and long term monitoring be put in place, and despite limitations, it found dredge spoil could be continually resuspended for months, travelling more than 100 kilometres from the original dumping site. While environmentalists seized on the research as evidence the effects of dredge dumping near the reef may not be as localised as first thought, the ports industry had already expressed concerns about the study, ‘given the many acknowledged limitations, untested assumptions and lack of validation of the model’.

While it was the first to model such effects over the span of a year, it was by no means the first to look at the role of currents and wind in spreading dumped spoil further afield across the reef lagoon. Some two decades earlier, a study on the oceanic currents that wind their way through the Great Barrier Reef was published, and according to study author, James Cook University oceanographer Professor Eric Wolanski, it was put on a shelf and largely ignored.

Wolanski said his original 1994 report found that in Townsville, some 90 per cent of the dumped sediment was ‘suspended and actually moved away from the original

dumping site'; a phenomenon he has since found was similar across many areas of the reef.

'So it doesn't stay there and where it goes depends on the currents in the area and that's mainly the current when you have a long wave, a swell wave, it's not always related to local winds,' he said. Despite his findings, little action was taken to ensure ocean currents were fully taken into account in dredge modelling until 2012.

To combat the movement of sediment, the Great Barrier Reef Marine Park Authority created new guidelines on modelling the impacts of dredge spoil dumping, which further demanded the models in environmental assessments be verified against field observations, which Wolanski says is still not being followed. 'Basically none of them do that – they take an easy road not to do all the work to obtain all the field data. When you look at them very closely they are wrong. They do not fit with what is actually observed.'

Wolanski argues that the modelling and oversight of environmental impact assessments is largely a product of a system geared towards development, not conservation. He said that when the ports are owned by the state, and the state stands to profit from their expansion, it raises questions of potential conflicts of interest, between the royalties to be gained, and the state's responsibility to protect the environment.

But when action was finally taken two decades after Wolanski's evidence began to emerge, it would be

hampered by the authority allowing the ports to play a key role in the development of the policy.

The scientific reports on dredge modelling released as part of the wider Great Barrier Reef strategic assessment in 2013 had, Prof Wolanski said, finally confirmed for the first time that the evidence the port industry had used for two decades to prove dredging was not damaging the reef, and was both ‘temporary and localised’, was incorrect.

Almost immediately after the invitation to consult on the dredge modelling, the Queensland Ports Association demanded the study not be released publicly. Among the prolific communications between the Great Barrier Reef Marine Park Authority and the Association between mid-2012 and 2013, an email from a staffer at one port neatly surmises the industry’s position: ‘The other ports have expressed equal concern about the accuracies of these reports and the potential consequences of the reports being released without significant changes.’

The port employee was just one of several from different government-owned corporations who wrote that any report that could be released showing ‘severe or irreversible impacts on biota and benthic organisms’ would be ‘incorrect and extremely misleading’. They further urged the authority not only to prevent the report’s public release, but also to ensure it was not taken into account by either the strategic assessment of the reef ordered by the

World Heritage Committee or the wider environmental impact statement process.

The ports noted some of the key limits and weaknesses of the report, highlighting them as part of the case that the dredge modelling should not be used to guide policy decisions on the reef.

Some of those limits were also highlighted by an unnamed coastal oceanographer that the authority asked to independently analyse both the original report, and the ports' interpretation of the study. In that scientist's words, it was the first time in the history of modelling the fate of dredged sediment in the Great Barrier Reef that researchers had attempted to answer a simple question: 'Where does the sediment ultimately go?'

But, contrasting with the port's interpretation that the study overstated the potential effects of dredging and sea dumping, the independent analysis found, if anything, the methodology was weakened by underestimating the full impacts. The analysis found the modelling was actually a 'best case scenario' of the full potential impacts of dredging and dumping of sediment near the reef.

Despite the independent advice, the authority heeded the industry's warnings, in direct conflict with its own remit to protect the reef, to use the best available science in the strategic assessment and sea dumping permit assessments. It ensured lengthy disclaimers about the limitations of the

study were included in the reports, and later released an ‘interpretive statement’ about how the information should not be used. The statement reiterated the ‘constrained timeframe that only allowed for limited consultation with affected stakeholders’; namely, the federal environment department, Australian Institute of Marine Science and the Queensland Ports Association.

Its purpose was to ‘inform the readers of these reports – be they members of the public, scientists or agency staff – on their findings and limitations’. The statement reads:

Due to the limitations associated with this study, modelling results should not be used to determine actual dredge material movement or be used to infer where sediment could be dispersed and deposited or its ecological significance. The model does, however, provide an insight into the direction of future modelling and is a useful tool to assess options for ocean placement of dredge material and risk assessment (if supported by robust inputs).

The final outcome of the process was a vastly different one to that originally proposed in the project brief as providing: ‘high level scientific and environmental advice and strategies for improved dredge material management’ for the reef. While it helped expose the potential effects of dredging and sea dumping near the reef in detail, the use of the information in future environmental assessments was effectively ruled out.

The changes were successfully managed out of the public spotlight, through a process largely devoid of public scrutiny.

And just as the ports association was working behind closed doors to protect its interests, so too was the resources industry – the sector driving the expansions at both Abbot Point and Gladstone harbour – working in the public arena to turn the debate in its favour.

**M**ichael Roche is a seasoned political operator. The public face of the Queensland coal industry, the economist and chief executive of the Queensland Resources Council (QRC) honed his political skills over almost a decade in public policy in Canberra and several years inside some of the highest political offices in Queensland. He cut his teeth on a successful nine-year campaign to abolish share duty taxes on marketable securities during his time on both sides of the political and corporate fence, first as political advisor to then-Queensland Treasurer Keith De Lacey and later in a senior ‘corporate relations’ role at the Australian Stock Exchange. He knows how to pursue a persuasive argument, which runs counter to his, and his employers, interests.

Before a Senate committee in 2013, he did just that, targeting what he called an ‘emotive’, ‘political and anti-resources agenda’ against the coal industry and a raft of

proposed port expansions along the Great Barrier Reef coastline. His carefully-worded testimony was part of a lengthy industry campaign to shift the focus of public debate away from its impacts on the reef as Queensland prepares to become an even bigger player in the global coal market and the world's second largest exporter of LNG.

The campaign of misdirection and deception has been pursued by industry for several years, by funding misleading advertising and research to back its position; destroying a key chance to enshrine the World Heritage Committee's recommendations in legislation and using political influence to distort the regulatory process meant to be in place to protect one of the nation's most recognisable World Heritage Areas.

On the witness stand at the Senate inquiry, Mr Roche spoke of legitimate environmental concerns surrounding several threats to the reef, including agriculture sediment run-off, crown of thorns starfish, climate change and water quality. But he did not mention the doubt or increasingly apparent environmental risks of the multitude of proposed port developments and dredging projects planned to make way for expanding resources exports along the Queensland coastline.

Rather, he spoke only of a 'rigorous environmental assessment regime' that was in place to 'avoid and minimise impacts' of such development. The industry has been proactive in addressing many concerns, Roche argued.

His evidence, given to a Senate inquiry examining the merits of enshrining the World Heritage Committee's 2012 recommendations in legislation, overshadowed that of independent scientists as well as the Law Council of Australia, which itself recommended passing the Greens' bill.

It meant the only effort to ensure the full remit of the international community's concerns be delivered in law was abandoned. After a swift inquiry, the Labor Government majority committee recommended against passing the bill.

A second Senate inquiry in the months that followed examined the risks of handing over the hard-fought Commonwealth environmental assessment and approval powers to the states. While the Gillard Government, conscious of a community backlash and impending election, abandoned the plans, the Abbott Government, within six months of taking office, had already put the approvals in place in Queensland and several other states.

Created by the Howard Government in 1999, the Environmental Protection, Biodiversity and Conservation Act prevented the states having the final say on such projects. The QRC, Minerals Council of Australia and Business Council all gave evidence at this inquiry calling for the handover of environment approvals to the states, on the grounds of 'duplication of regulation' delaying major projects across the country.

But the committee recommended against changing the laws, in part because its examination of the evidence from a raft of submissions and witnesses found the majority of lengthy delays were found in understaffed state environment departments. Little hard evidence was provided by industry or others that showed exactly how the Commonwealth regime was slowing development.

However, industry had to wait only a year before the new political regime in Canberra turned the situation around, with Environment Minister Greg Hunt approving more than 300 projects in his first few months on the job, despite the long-standing lack of expertise and ‘passive approach’ to overseeing such projects in his department that was revealed only months later by the audit office.

Executing the industry’s argument in the public, the QRC spent more than \$300,000 on a month-long ‘Reef Facts’ television advertising program in April 2014. In an authoritative yet calm voice, the voiceover of the ad said that ‘No scientific study has blamed ports or shipping for coral loss or a decline in the environmental health of the Great Barrier Reef. The Reef Facts are clear.’

In launching the campaign, Roche said that neither an increase in shipping traffic nor port dredging ‘has been scientifically recorded as contributing’ to the ‘historical decline’ of the reef. However, the campaign and Roche’s position failed to take into account the future impacts of the 43 million cubic metres of dredge spoil proposed to be

dumped in the World Heritage Area – an unprecedented amount that could have unpredictable impacts.

The advertisement, which also directed viewers to a state government-run ‘Reef Facts’ website, selectively quoted the 2012 AIMS study. It did not highlight the growing concerns about dredging and dumping, and the role coastal development was already playing in the reef’s decline.

Nonetheless, the industry’s arguments that ports and dredging were not causing unpredictable damage to the reef were further bolstered in mid-2014, courtesy of the national ports lobby group, Ports Australia. The lobby group released a study on sub-tropical and tropical ports, and the effects of dredging. Largely, it found most impacts were consistent with the impacts allowed by federal and state regulators under environmental approvals given to dredging and dumping projects. But it also found some 5 per cent had greater impacts than predicted, and included Gladstone’s latest developments in a category of 12 per cent of projects, which had impacts that could not be determined due to ‘extreme weather events’.

Roche said the ‘expert peer-reviewed report’ confirmed dredging projects had either ‘met or exceeded expectations’. However, the sole reviewer of the report, Dr Ian Irvine, wrote in his ‘reliance statement’ that he was ‘not able to independently check the monitoring reports referred to’. Conversely, Mr Roche said that ‘the science is

in, the overwhelming evidence is that dredging operations are temporary and localised’.

Such initiatives were an effort, Roche says, to address an imbalance in the public debate. He characterises it as an industry caught out by the environmental campaigns against the coal and gas industries, which ‘now takes up the larger part of my working week’.

He argues the environmentalists, based on a 2012 leaked document, ‘Stopping the Australian Coal Export Boom’, aim not to protect the reef, but to use it as a mechanism to slow coal exports and address climate change. He is not wrong – many of those involved in the campaign at national and local levels freely admit they would like to stop coal exports. But they say it is because climate change is already affecting the reef, and exporting the vast quantities of Galilee coal would only further entrench the likelihood of a reef dominated by climate change and ocean acidification. Others say they want to generally preserve the environment, especially after the destruction at Gladstone, for the benefit of locals to use and enjoy.

Mr Roche says irrespective of the Australian exports, the world – the developing world in particular – will continue to demand coal, wherever it comes from. Such an attitude is reminiscent of the tactics of large multinational pharmaceutical companies. When a product is superseded in the developed world, the developing world, unable to

afford newer alternatives, can become a dumping ground for such products. Mr Roche, however, further suggests the defiant hearing of the future of the reef's World Heritage listing at the UNESCO meeting in Doha in 2014 was not due to rising global concern about Australia's stewardship of the reef.

Rather, he argues, it was due to Qatar's key role as the number one gas exporter in the world. The Gladstone LNG projects would bring Australia up to be its top competitor. 'I didn't see Qatar in there doing Australia any favours; they even allowed activists to speak before the nation. There are people playing in this space with competitive axes to grind and I think Qatar is certainly one of those.'

At the time, Roche went further to defend the industry, in the industry's magazine *Shift Miner*, under the lede: 'Countries voicing concern about the impact of Queensland port developments on the Great Barrier Reef are mouthpieces for environmental activists that don't have a clue about the local assessment process'. Roche said such countries were 'falling hook, line and sinker' for environmental arguments, which he said were to blame for 'whipping up an international storm in a teacup ... My belief is the activists will work very hard to keep the Sword of Damocles hanging over us, to require us to keep coming back (to UNESCO) every year. The world has every right to ask how we are managing the

reef but such intense scrutiny every year is not particularly constructive.’

To prove its environmental credentials and licence to operate in the reef, the QRC has repeatedly pointed to one particular effort as evidence.

The Abbot Point Cumulative Impact Assessment (CIA) was the first of its type in or near the reef. It was undertaken when the North Queensland Bulk Ports Corporation (NQBP) was seeking approvals for its original, but since scaled-back, proposal to dredge and dump 3 million cubic metres of spoil in the World Heritage Area. The port called it a concerted effort to analyse the potential cumulative effects of a major port expansion, including the dumping of millions of cubic metres of dredge spoil in the marine park.

Only, evidence from internal documents released by the Marine Park Authority shows a concerted effort it was not. In fact, analysis of the CIA by the authority’s top scientists, and an independent review of the industry’s assessment, shows it was not a cumulative impact assessment at all.

Despite spending months, and thousands of dollars on producing the CIA, no independent analysis of the projects effects, cumulatively, was actually undertaken by the port.

Rather, the title of the ‘Cumulative Impact Assessment’ was a misnomer; despite a valid effort to assess some individual potential effects of the project, it did not combine those effects in a coherent manner or find out

how the combined effects would cumulatively affect the local environment.

While the merits of the CIA have remained relatively unquestioned, the project itself has been a major point of contention since it was first proposed in 2010. Originally a huge ‘multi-cargo facility’ including 38 million cubic metres of dredging proposed by the then state Labor Government, the Newman Government, finding demand for the project was probably not as high as first thought, turned it down. The NQBP instead proposed the current project in 2011, primarily to make way for Adani, GVK-Hancock, BHP Billiton and Waratah Coal to export Galilee coal.

Since it was first proposed amid the rising controversy in Gladstone, fishermen and tourism operators around Mackay and the Whitsundays have been concerned about the project’s potential effects. But with the project on the federal government’s books in the final throes of the Gillard Government, two successive Environment Ministers delayed a decision on approval or otherwise, sensing political ramifications.

Not so when Environment Minister Greg Hunt took the role, who after three months in the job approved the project. His approval was based on advice from his department in Canberra, which noted it was ‘likely to impact’ on the outstanding universal values of the reef’s World Heritage Area, marine park, listed threatened species and a host of

other important environmental values. However, internal documents show the department believed such effects were ‘acceptable’, recommending approval in December 2013; ‘provided the action is undertaken in accordance with the recommended conditions and consistent with the mitigation and offsets measures recommended’.

It was a far cry from what the authority in Townsville believed was the best option. A series of communications throughout 2013 and early 2014 between the authority and department exposed the inconsistency between the scientists studying the reef, and the Canberra bureaucrats.

One such letter showed the authority has:

identified three very high and 12 high risk impacts associated with the proposal in its current form whilst the alternatives to dredging and sea disposal have not, in Great Barrier Reef Marine Park Authority’s opinion, been fully explored’. ‘Furthermore, those alternatives to sea disposal of the dredge material that are considered in the public environment report seem to have been inappropriately dismissed. Our assessment of the draft Public Environment report leads us to the view that sea dumping of 3 million cubic metres of dredge material should not be supported.

In June 2013, the authority had even drafted a recommendation report to the department, setting out its position both on the Abbot Point proposal and on dredging generally in the reef region.

On Abbot Point, the authority wrote that it ‘does not consider the additional costs of alternatives (to dredging

and sea dumping) disproportionate and believes this is the cost of doing business in the Great Barrier Reef World Heritage Area’.

And on dredging more widely, it wrote: ‘The World Heritage Area is currently at risk due to multiple natural and anthropogenic stressors that are impacting the resilience of the reef and Outstanding Universal Value for which the area was inscribed. The future of dredging and disposal proposed for the WHA is an order of magnitude difference to previous campaigns and poses a significant risk to water quality and overall biodiversity of the GBR region.’

Between the original application for Abbot Point and the Minister’s approval in late 2013, the project did not seem to have markedly changed, and the authority was to some extent exercising its independence.

But another test remained, with the final hurdle for the project invested in an approval for sea dumping and dredging in the marine park resting with the authority.

As senior authority staff internally protested against approving the project, the authority had already begun a restructure, and offered several voluntary redundancies. Many of the senior staff who had long worked to protect the reef took the opportunity – taking with them their expertise and institutional knowledge.

Amid the restructure, the ‘Minister’s delegate’ – the employee responsible for approving projects on behalf of the authority, was replaced. The authority’s chief

executive Russell Reichelt appointed Bruce Elliot to the role, a career public servant whose chief experience, as he divulged to the 2014 Senate inquiry, was working for the Department of Defence and the tax office.

The lack of a scientific background, and a sound working knowledge of Canberra, gave him a different view to those who had left or were on their way out. And as the deadline for a decision in Townsville neared, Hunt sent the authority what seemed to be an unprompted letter.

Hunt's letter recommended the authority approve the sea dumping proposal, which was of little surprise to the authority. Elliot told the Senate inquiry the authority must seek the Minister's advice on sea dumping approvals, to which the minister responds. But the internal approval documents show no evidence of the authority having sought Hunt's advice, only that he had sent it and it was received.

Seven days after the letter was received, the authority approved the project. The documents further revealed that Hunt's letter was one of only two grounds Elliot relied on in approving it. The other was that the cost of alternatives to dumping, which the authority had previously noted had not been properly assessed, 'could be seen to be disproportionate'.

Elliot maintained that the authority's decision was 'taken independently of the minister'. But with few experienced staff left to debate the merits internally, Elliot's approval trumped the authority's earlier view that

more environmentally-friendly alternatives were simply ‘the cost of doing business’ in the World Heritage Area.

The bureaucratic hurdles were overcome and the authority had ultimately bowed to the industry, but the project would face yet more challenges.

Three decades earlier, an idealistic young teenager was joining the protest movement to save the Franklin River from a now infamous dam proposal. Felicity Wishart’s first foray into environmental activism would, over the years, lead her through numerous campaigns, eventually working in Canberra, building momentum for the national marine reserve network put in place by the Rudd-Gillard Governments.

‘With that done, it became apparent to me from afar that the reef was under these emerging threats – Gladstone had come to light as an issue and I took a closer look. It was apparent when you look at the development, it was unheard of previously in the reef’s history and that was when the society started to say we need to do something about this and talking to WWF started to look at what could be done,’ she said.

In December 2012, Wishart became one of the more prominent national voices in the ‘Fight for the Reef’ campaign, appointed as lead reef campaigner at the Australian Marine Conservation Society – a society which first came to prominence in the 1960s fight against oil

drilling on the reef. But the society and other national environmental groups involved in the latest campaign, despite claims to the contrary, have not been alone.

While Roche argues the campaigns have been managed ‘top-down’, coordinated by international environmental movements bent on destroying the coal industry, Wishart argues otherwise. ‘The regional groups all have long histories, and this is a big and complex issue – it’s not just a single development – there’s simply not the ability for one organisation to do anything without relying on everyone else. There’s no capacity for top-down control and command, and anyway that’s not what community groups are about.’ However, it is clear the environmental campaign has been well supported internationally, with the Pew Environment Group, WWF, and 350.org among their backers.

The focus, she and many local campaigners say, is on protecting the reef from the myriad threats it faces, not least of which is climate change.

Townsville resident and current coordinator of the North Queensland Conservation Council, Wendy Tubman, agrees. ‘Industry has a very structured way of doing business – they can’t understand how you can work in a different way and still get an outcome. It’s not hippy trippy, it’s quite hard hitting, but it operates in a way that’s not structured.’

An economist by training, Tubman argues irrespective of the port developments, the export of Australian coal overseas to be burnt and contribute to carbon emissions is inseparable

from the reef's future. The more coal that is burnt, the more the effects of climate change will be felt on the reef.

While each local group is fighting specific port developments, the overarching campaign seems to be targeted at limiting coal exports, but also specifically on preserving the reef itself. But there is no doubt there is a concerted strategy at work inside the environmental campaign.

Consistent with the leaked 'Stopping the Australian Coal Export Boom' document, various groups have taken action in the courts and Administrative Appeals Tribunals, against both the Abbot Point proposal and Galilee coal mines. Action against the Abbot Point project includes two cases, one of which is led by the North Queensland Conservation Council (NQCC), challenging the dumping permit issued by the authority, on the grounds the approval went against the best advice.

Other challenges, against Greg Hunt's December 2013 decision, were also being taken in the courts and administrative appeals tribunal. While each challenge is yet to run its course, Roche argues it is only a strategy to delay the coal exports. Environmental advocates maintain it is an effort to get a better environmental outcome for the reef.

Both Wishart and Tubman say they are not necessarily opposed to port development, as long as it is done in the most environmentally-conscious way.

'I think the environmental assessment process is broken. In fact, nowadays it's more and more referred to

as the environmental approval system. The whole idea of cumulative impact assessment the authority is trying to come to terms with that – it’s really hard to do, but essential. They’d [industry] say it’s as big as Italy, the GBR, we’ll only take out this little bit, but then there’s this little bit and this little bit,’ Ms Tubman said.

In mid-2014, the industry was dealt a further blow, with two separate pieces of scientific evidence that the environmental campaign used as further evidence of the potential damage of dredging and sea dumping.

The first came in the form of a joint Australian Institute of Marine Science – James Cook University study, examining the effects of dredging in Western Australia on coral reefs there. It found damning evidence that dredging and dumping of spoil near corals could double the risk of coral disease.

The first credible evidence linking turbidity and sedimentation from dredging to elevated levels of coral disease, the study findings had ‘direct implications for coastal managers charged with balancing economic development with the imperative to maintain health coral reefs,’ wrote co-author Joseph Pollock.

Felicity Wishart welcomed the study, saying it showed claims by industry and the state government that dredging was not threatening the reef now had ‘no credibility’. ‘This study confirms what most people understood, which is that sediment from dredging damages coral,’ she said. As if to highlight the ramifications of the study, Pollock also

noted the World Heritage Committee's concerns about dredging and dumping near the reef. The industry argued a study based in Western Australia was not relevant to the reef off the continent's east coast.

A second JCU study, given about a week later to the Senate inquiry during hearings in Townsville, had further damning findings on the existing effects of coal dust on the reef. It found local sediments at Hay Point were already contaminated with coal residues that exceeded national water quality guidelines.

Respected reef scientist Dr Terry Hughes, who presented the findings, told the inquiry the 'toxic chemicals' exceeded Australian standards and it was unlikely the particles could ever be cleaned up. He further said it was likely such dust was spread right across the Great Barrier Reef lagoon. Study author Dr Kathryn Burns wrote the concentrations reported were from 2009 and 2010 'before the current expansion of coal ports began'. 'If the ports are greatly expanded, then it can be expected, so will the polycyclic aromatic hydrocarbon (PAH) contamination of the Great Barrier Reef lagoon,' she wrote.

If nothing else, the 2014 Senate inquiry exposed dire verdicts on the reef's future from a raft of scientific experts and concerned stakeholders.

One such figure, Australian Coral Reef Society president Dr Peter Mumby, predicted that by 2050, on business-as-usual scenario, valuable corals would be

covered by seaweed and algae. If nothing changed in the reef's governance and management, he said, it would be 'vastly diminished' and it was already in the 'worst state since records began'.

Reef climate change expert Professor Ove Hoegh-Guldberg was similarly concerned, dubbing the current management efforts 'inadequate'. 'The original establishment of the Marine Park Authority was due to a need to take it out of the state level,' he said. 'This is an ecosystem that is owned to some extent by the world. It seems at every turn that we are trying to prove that we don't care about that commitment made in 1981.'

Perhaps the most significant and unavoidable challenge the reef faces, the clock is ticking on climate change. The result of more than two hundred years of fossil fuel consumption, almost inextricably linked to global economic growth, climate change is already taking its toll. Unaddressed, its effects will be several fold on the reef, from the slow acidification of the globe's oceans, to the constant and creeping rise in air and water temperatures manipulating the very nature of the relationships between the reef's organisms.

Hoegh-Guldberg is not alone in the scientific community about his concerns for the reef, which, he has said, are two-fold:

We are not dealing with the core issues. The core issues come down to two things. The first is water quality

and the second is climate change. When I say climate change, it is a combination of ocean warming and acidification. It is a little perverse that those are totally linked.

‘One of the things that I find quite incredible is that we are expanding activities that will drive increasing amounts of fossil fuels into the global market at a time when we know that will kill the reef,’ he said.

But the effects to past president of the Coral Reef Society, Professor John Pandolfi, have had little to do with climate change. Rather, Prof Pandolfi said the broad scientific consensus about ‘what reefs around the world are facing’ were three key threats:

overfishing or overexploitation, pollution through coastal development, run-off and things like that, and climate change ... The reef has been declining for a long, long time – and it has not had anything to do with climate change through that period. We have a sick reef now... So we are all concerned about patching up the reef and trying to reduce these local stressors on the reef like the water quality and the fishing, because when climate change comes, if the reef is in a good enough state, it will have a much better chance of being resilient to the climate change effects than if it is not.

The early signs of one of the risks that climate change poses came first in the 1970s, and again and more severely in 1998, with a coral bleaching event which turned the vibrant colours of many corals into an acid-white, chalky morass. Driven by the combination of greenhouse gas

erosion of the ozone layer, clear skies and beating Australian sun during a series of devastating El Nino summers, it was a readily visible signal that climate change had arrived.

Such events, Charlie Veron says, will only increase, with the combination of factors playing ‘Russian roulette’ with the reef’s future:

It’s all a matter of time – at the moment the crown-of-thorns starfish is doing more damage to the reef than coral bleaching but if we have, and the predictions are it is likely, if we have a deep El Nino this summer, depending on how that pans out we could lose a great proportion of the reef in a couple of months ... Just when it happens is unpredictable – we haven’t had a deep El Nino for several years, but we’ve already got bleaching without an El Nino and that is concerning. The danger is when a deep El Nino hits and you have a fortnight of clear blue skies and very high temperatures.

While such a confluence of events was a ‘weather pattern’, and there could not be a direct link between weather and climate change, the scientific consensus is that the latter is increasing both the frequency and severity of such events.

‘All it takes now is just two or three things to come together and the GBR will not look the same – it’ll look like a graveyard,’ Dr Veron said. ‘This is something that may or may not happen year after year ... Climate change is increasing the odds but not determining the roll of the dice.’

The Great Barrier Reef has long been at the centre of some of Australia's greatest environmental debates. A central part of the Australian identity and the nation's international reputation, it has become the battleground on which the lasting conflict between human dominance of nature and the need to protect the environment has been fought.

But, more than just a battle for the reef, at its crux, the debate is a contest of ideas. In Australia, the reef is the setting of a vast ideological divide, a debate between the instrumental and inherent worth of the world we inhabit. British philosopher Roger Scruton reflected on this divide in his 2012 book *Green Philosophy*:

Many people treat their surroundings as having only instrumental worth. They recognise future generations among its users; but for such calculating people, the environment is still no more than a tool ... That attitude, which would be regarded as impious by many more primitive people, seems to be embedded in political thinking, and it erodes the barrier between use and misuse.

Many of those closest to efforts to preserve the Great Barrier Reef believe it should be a vast point of pride for decision-makers – one of the continent's key natural assets valued above all else. But pragmatism must play a role, and it is clear that many decisions taken, and those not taken, in recent years about the future of the reef have not been in the best interests of the environment.

As Prof Hoegh-Guldberg told the 2014 Senate inquiry in Brisbane:

This is such a valuable ecosystem. It is providing enormous numbers of jobs. It is iconic. It is our lifestyle and culture. Being able to go into the mangroves and go crabbing – all of those things are involved in the value of this system ... Therefore, if there are other mechanisms to deal with that dredge, we should take them, even if they are more expensive, because the value in perpetuity of the Great Barrier Reef is enormous. It goes way beyond mining and the short-term benefits of those industries.

While the industry remains an essential part of the national economy, most experts say the government should be moving away from increasing coal exports, if not for the good of the global community, then for the reef of which Australia is guardian.

Despite the scales seemingly tipped in the economy's favour, if the reef's decline is to be reversed, and it is to survive for the next 200 hundred thousand years, a balance must be found.

As Prof Hoegh-Guldberg told the 2014 Senate inquiry: 'This is Australia. It is our future.'

*Daniel Burdon* is a reporter with APN Australian Regional Media's Newsdesk. His previous work on the Great Barrier Reef was nominated for a 2013 Young Walkley Award. He has reported from the Northern Territory, Queensland and currently covers national affairs from Canberra.

## **Epilogue**

Since the time of writing, politicians at both state and federal levels have made concessions to the growing community concerns surrounding the future of the Great Barrier Reef.

In recent months, both Labor and Liberal parties at the federal level have promised bans on dumping of capital dredge spoil near the reef – with Environment Minister Greg Hunt promising to ban the practice within the bounds of the marine park.

Labor’s environment spokesman Mark Butler similarly confirmed the Opposition’s position on dumping of dredge spoil, pledging to outlaw it in the entire World Heritage Area.

As the Queensland election loomed, the state Labor Party pledged to reinstate vegetation clearing laws and coastal planning laws, removed by the Newman Government, and promised \$100 million to improve water quality.

Queensland Deputy Premier Jeff Seeney, however, took control of the Abbot Point development, promising what could be hundreds of millions of taxpayer’s funds to support the building of a rail-line for the Carmichael coal mine proposed in the Galilee.

One of the key actions to address the World Heritage Committee’s concerns by the Newman and Abbott Governments – a long-term sustainability plan launched in October – also mapped out future efforts to address the reef’s decline.

While such initiatives signal a more rigorous approach to managing the reef than in the past, they remain, as Carmen Lawrence, chair of the Australian Heritage Council said early last year ‘simply not commensurate with the size of the problem’.

Analysis of the long-term sustainability plan by Australia’s eminent Academy of Science warned that the draft plan still failed to ‘effectively address any of the key pressures on the reef, including climate change, poor water quality, coastal development and fishing’.

Academy Fellow Professor Terry Hughes said it also failed to address many of the other key concerns of recent years – including the ‘fundamental governance’ of reef management, conflict of interest and oversight concerns.

‘It is also more than disappointing to see that the biggest threat to the reef – climate change – is virtually ignored in this plan,’ he said.

‘The plan also seems overly focused on the short-term task of addressing UNESCO’s concerns about the reef’s World Heritage Listing, rather than the longer-term challenges of restoring the values of the Reef.’

A second analysis of existing plans to protect the reef, by the six key regional natural resource management groups – an a-political group dedicated to land and marine environment management – showed even more was needed. Their report showed at least an extra \$745 million needed to be spent in the next five years, as well as

a further \$1 billion after 2020, if dire consequences for the reef were to be confined and potentially averted.

It warned of a ‘fundamental concern’ of all those involved with the reef that existing funds were simply not enough to meet the sustainability plan’s own targets by 2020, targets which few outside of government and industry believe are achievable with the resources allocated to date.

While the federal government points to existing promised funds of about \$2 billion over the next decade, and the proposed banning of disposal of dredge spoil in the marine park, it remains unclear what the future may hold for the Great Barrier Reef.