

## The Reef's Self-Serving Saviours

By Dr Walter Starck, Quadrant Online, 19 June 2016

All the many and varied claims of threats are based on speculation and the flat-out fabrications of researchers, bureaucrats and activists seeking grants and donations. Let us hope that a political leader emerges to decry and defund the gold-plated alarmists and the immense harm they are doing

Virtually every year for the past half-century news reports have bannered dire proclamations by “reef experts” on imminent “threats” to the Great Barrier Reef. This has sustained an ongoing, ever-growing charade of “research” and “management” aimed at saving the reef from a litany of hypothetical threats conjured up by a salvation industry which now costs taxpayers over \$100 million annually. Although none of these “threats” have ever proven to be anything other than hypothetical possibilities or temporary fluctuations of nature, the doomsters never cease to rummage through their litany of concerns to find something they can present as urgent in order to keep the funding flowing.

For a time in the 1970s and '80s genuine basic research was beginning to reveal a fascinating range of new understanding about the reef. Sadly, this all too brief golden age of discovery faded away when researchers found that the surest path to funding was to go with the flow and float their careers on the rising tide of environmentalism. We now have a whole generation of researchers whose entire involvement has been in the context of investigating various environmental concerns. Understandably, they perceive and/or present every fluctuation of nature as evidence of some threat.

In this process the open, sceptical, inquiring approach of science has been displaced by what has become the environmental facet of political correctness. Like the latter, it is weak on evidence and brooks no questioning of its doctrine, the penalty for any such heresy being personal denigration, the rejection of research funding, and the rejection of papers by peer-reviewed journals. At its most sinister, even dismissal from employment.

However, and despite all the pretence of scientific authority and consensus, there has been an growing divergence between the orthodoxy and the reality. This stress has recently ruptured into a serious fracture of the salvationist monolith. A recent article, [“Great Barrier Reef: scientists ‘exaggerated’ coral bleaching”](#), in *The Australian* reports the chairman of the Great Barrier Reef Marine Park Authority (GBRMPA), Russell Reichelt, as stating that the extent of the recent coral bleaching event has been greatly exaggerated. This admission is particularly significant for two reasons: it specifically contradicts claims by researchers, and it comes from the GBRMPA, which until now has itself taken a lead in proclaiming the scientific authority of the many and purported threats to the reef.

Additional support for the accusation of serious exaggeration about threats to the reef has also come from the reef tourism industry, which is gravely concerned about the negative impact of such publicity on their businesses. As the dive-boat captains and tour operators know from their own direct and daily experience, the reef remains healthy and vibrant. It is not dying.

Meanwhile, the doomsters persist in upping the ante to a level of absurdity, now claiming \$16 billion is needed from government over the next decade to save the reef.

The reef itself is out there, over the horizon and beneath the sea, where the truth and evidence of its ongoing good health is safely inaccessible. Any alleged and imminent catastrophe can be claimed, with little risk of those claims being revealed as untrue. Indeed, given the media's inclination to take dictation rather than seek and publish facts, such assertions are seldom even questioned. In the absence of evidence, an easy-to-claim "authority" alone prevails. "Experts" flourish where knowledge struggles and trust is safe from test. Even so, truth has a way of accumulating over time until even the best crafted untruths cannot be maintained.

Recently, there has been a flurry of doomster propaganda capitalising on an extensive coral bleaching event. The thrust of the impression being presented is that most of the corals on the GBR have been killed, that climate change is the cause, and making billions of dollars available to the reef salvation industry is urgently necessary.

The actual situation is far less dramatic. Bleaching events occur when wave-driven mixing ceases during periods of extended calm associated with strong El Niño conditions. This results in the one- to two-metre surface of the ocean becoming several degrees warmer than the water immediately below. This extra-warm layer moves up and down several meters with the tide and may extend deeper in channels or around the edges of reefs where it flows off shallow reef tops on a falling tide. Corals subjected to excessive warmth and rapid temperature fluctuations expel the symbiotic algae which live in their tissues and their white limestone skeletons show through their now-colourless polyps. Such bleaching mainly affects the shallow tops of reefs where it is also very conspicuous. Coral at greater depths remain healthy.

The GBR consists of over 2500 named reefs and many more smaller, unnamed coral patches. The high percentages claimed to be affected by bleaching refer to a sample of reefs where some bleaching was seen, not to the total area of coral which has been affected. The reef is vast and bleaching surveys have naturally concentrated on the regions where it is occurring. How much of the total coral area of the GBR has bleached has not been assessed. A reasonable estimate would likely be closer to 10-20% than to the 90+% being claimed in news reports. Most of the affected corals can be expected to survive and promptly recover, just as they have in other bleaching events.

Some portion of bleached corals will indeed die, and high levels of recovery may require a decade or more. However, mortality from this cause is natural and not dissimilar to the effect of naturally occurring fires in forests. On the GBR, damage to reefs from severe tropical cyclones is in fact much more intense, extensive and frequent than the effects of bleaching. Historical records and proxy studies clearly indicate that both El Niño events and tropical cyclones have been common for many centuries and that neither their frequency nor intensity has increased. In fact, the frequency and intensity of storms in the past century appear to have been well below the preceding one, and there is clear evidence of far more severe impacts in earlier centuries.

It is also important to be aware that extensive coral mortality on shallow reef tops can result from heavy rain during an exceptionally low tide when corals can be exposed to the air for several hours. These so-called “minus tides” can be accurately predicted; typically, they occur several times in most years. It is not at all improbable that this entirely natural factor might also be involved in the mortality being attributed to the recent bleaching.

Whatever the cause, though, any apparent damage is never wasted by those who understand the academic funding process better than they are prepared to admit grasping the truth about the reef, its corals and eco systems. For otherwise un-notable academics, it is a welcome opportunity to appear important, to bask in the spotlight and attract public attention, to hype the “save the reef” industry and squeeze further funding from politicians under pressure to be seen as doing something, no matter how pointless and expensive. Next year — and you can bet the house on this — the current “threat” will be forgotten in favour of a fresh one.

The repeated claim of a 50% decline in coral cover is based on a recent study which was preceded by an earlier one using the same data from the same research institution only two years before. The first one concluded that no statistically significant change in coral cover had occurred over the previous 25 years. The 50% decline was then declared after including surveys of the damage inflicted by two Category 5 cyclones in the subsequent two years, along with liberal application of some dubious statistical jiggery pokery. Contrary to the claims of this second study, the frequency of such storms is not increasing and reefs do recover surprisingly quickly. A 20% increase in coral cover in the cyclone damaged areas has already been found.

The newer study was published in a high level peer-reviewed journal which requires that any conflicting evidence be addressed. Although the earlier study was briefly cited in passing, no acknowledgment was made of its directly contradictory conclusion. By not mentioning any conflicting evidence in a journal which specifically requires this, the false impression was presented that there is none. It is also worth noting that the lead author of the first study was a co-author of the later one. How then to explain the conflicted findings? At minimum, some might see scientific misconduct at work, perhaps even outright fraud.

Crown-of-Thorns starfish infestations devouring corals are another superannuated “threat” currently being recycled. In the past it was first blamed on shell collecting, then on fishing when the charge against collectors lost all credibility. More recently, the blame shifted to declining water quality due to fertiliser runoff from farming. The reality is that erratic population booms are inherent to the reproductive strategy of starfish and are well known for various species all over the world. Crown-of-Thorns outbreaks commonly occur on isolated oceanic reefs, as well as on coastal reefs in desert regions where agricultural runoff cannot be a factor. Extensive sampling of the frequency of the distinctive spines of the CoT starfish in reef sediments indicate large and erratic fluctuations for at least the past 8000 years. On the GBR no credible correlation has been demonstrated between CoT outbreaks and runoff events. In Western Australia the same kind of CoT outbreaks occur despite there being no runoff from agriculture.

Corals on the GBR are frequently subject to extensive natural mortality from storms, floods and bleaching events. There is no evidence of any recent increase in the frequency or intensity of such events. In the subsequent recovery process the fast growing branching and plate-like coral forms tend to overgrow the slower growing, more massive species. The preference of CoT for these faster growing forms may well be important in the maintenance of coral diversity.

The effect of runoff on GBR water quality has also been grossly exaggerated. Significant runoff in the GBR catchment is limited to occasional brief flood events. These affect only relatively restricted inshore areas well removed from the main body of the reef, which is much further offshore. The nutrient flux on the outer reefs is dominated by naturally occurring internal waves which are much more frequent and orders of magnitude greater in effect than anything coming from the land. Contrary to the highly misleading claims of the reef’s self-proclaimed and self-promoting saviours, there is no evidence of decreasing water quality on the GBR. If anything, the quality of runoff has almost certainly improved over recent decades from advances in land-management practices. In particular this has included a substantial reduction in fertiliser and pesticide usage. There is simply no evidence for any decline in water quality on the reef, and agrichemical usage in the catchment area has declined in recent decades. In short, no evidence exists for anything other than natural perturbations in the condition of the GBR.

A further repeated and grossly misleading claim by the reef salvation industry involves the value of reef tourism. They often cite a varying figure in the billions of dollars which, if not entirely fabricated, can only be the total value for all tourism in the region. This ignores the fact that only about half of visitors actually visit the reef at all and, for the majority of those who do, it is a one-time day trip. A 2013 report by Deloitte Access Economics entitled *[Economic Contribution of the Great Barrier Reef](#)* estimated the value of reef-related tourism in 2012 was \$481.4 million — a mere 7.5% of the total value for tourism.

Attributing the entire value for tourism to the reef is no more honest than attributing it to the rainforests, beaches, restaurants, backpacking or any other activity that attracts tourist dollars. To do this repeatedly is pathetically ignorant, grossly dishonest or both.

Still another, repeatedly presented misrepresentation is that of increasing warming of reef waters. While there does seem to be a slight warming trend of about three-quarters of a °C over the past century in the global average temperature, the records on which this is based are highly variable and erratic with a margin of error which is greater than the claimed warming. Where good records are available some places show warming and others cooling. The available sea surface temperature data from the GBR shows no statistically significant trend over the past three decades.

The reef is fine. Reef tourism operators know this from direct daily experience and have belatedly started to object to the doomster propaganda. All of the claims of threats to the GBR are based entirely on hypothetical speculations or outright fabrications by researchers, bureaucrats and activists seeking grants, budgets and donations. To its credit, as noted above, even the GBRMPA has recently found the untruths and exaggerations too much to endorse. Government needs to recognise that where genuine understanding is limited, committed belief in the prevailing misunderstanding does not constitute genuine expertise, nor can truth be conjured by modelling ignorance with a computer.

Coral reefs are highly diverse dynamic environments frequently subject to large natural perturbations. Environmentalism primes us to believe in a “fragile balance of nature”, with any significant fluctuation as evidence of some unnatural “impact” caused by humans. Researchers soon discovered that investigation of environmental threats assured generous funding and the result is now a whole generation of researchers whose entire training and experience of the reef has been in the context of investigating such threats. They see every fluctuation as a threat and while they proclaim deep concern for the reef, their true commitment is more to the threats. This becomes apparent if any suggestion is made that a purported threat may not be as great as they claim to fear. The reaction is never hopeful interest. Always, it is angry rejection.

Regardless of whether the reef salvation industry is based on sincere self-delusion or more base motives, it is out of touch with the reality of both the reef and the economic circumstances we face. It has become an extravagant farce. It has never effectively addressed any threat and is something we can no longer afford. It is past time for this to begin to be recognised as such, most particularly

The claim that \$16 billion is needed to save the reef is utter nonsense. That vast sum cannot prevent climate change, nor can it stop storms, floods or El Niño events. It cannot prevent

starfish outbreaks or bleaching. All it can achieve is to keep the reef saviours on a permanent Barrier Reef holiday and drive more of our struggling primary producers out of production with ever more restrictions, demands and costs.

This is beyond stupid. It is obscene. Australia is indeed the lucky country — but luck, by definition, is never a permanent condition and the current circumstances of the economy are unprecedented and serious, with prospects for the future even more so. Although having one of the world's highest levels of *per capita* GDP, Australia also ranks among the highest of developed nations in personal debt, interest rates, and taxation, as well as costs for housing, power, food, education and health care. At the same time most manufacturing has been driven offshore and is now at the lowest portion of GDP in developed economies.

In an economy increasingly dependent on primary production the number of small independent producers has also declined by two-thirds or more over recent decades. This is true across the spectrum from small miners to farmers, graziers, loggers and fishermen. Although various factors have played a role in this change, ever increasing environmental restrictions, demands and costs have been key elements. Unfortunately, these smaller independent operators were the flexible, low-overhead producers who could weather the vicissitudes of nature and markets to thrive in better times. The result has been an ever increasing dominance of foreign owned multinational companies across primary production as well as soaring food prices for domestic consumers.

Australia is now caught up in a perfect storm of weak commodity prices, a high dependence on imports and overseas borrowing, plus an economic base that is increasingly foreign owned. Although the behaviour of complex dynamic systems, such as the national economy or the GBR, is inherently impossible to predict with certainty, the best available evidence indicates that the condition of the economy is far more threatened than is the reef. The “threats” to the reef exist only in the realm of hypothetical possibilities imagined by armchair “experts” claiming authority and unsupported by any firm evidence. The demand for government to spend billions of dollars to “save” the reef is simply obscene when the effective real outcome can only be to load more demands and restrictions on vital productive activity already struggling to remain viable.

A further exposure of the rot in reef science appeared only a few days ago in *The Australian* (June 11) entitled “[Reef whistleblower censured by James Cook University](#)” reports that Professor Peter Ridd, a very experienced and highly regarded senior professor at James Cook University, was threatened with a charge of serious misconduct for questioning the scientific integrity of some blatantly alarmist claims about the GBR. In academic speak “serious misconduct” is code for the sack. If a highly regarded senior professor is so treated take it as a given that the 90+% of academics who are more junior in status will take note to

avoid any appearance of dissent. It appears that, as far as the administration at JCU is concerned, maintenance of a comfortable place at the public trough must override any considerations of academic freedom or scientific integrity. It would seem the official definition of “serious misconduct” is more concerned with exposing it than with its commission.

To add a further layer of absurdity to the farce, the upcoming election is seeing politicians of all parties vie with one another to shuffle and re-label sundry budget items and issues in order to inflate public perception of their “commitment” to saving the reef. As if a solar farm in Western Australia or banning a coalmine in outback Queensland represents meaningful efforts to save the reef!

Reader responses to alarmist hype in the mainstream news media clearly indicate a large and growing majority of the electorate is unsympathetic to the ongoing eco farce. When a political leader finally emerges who is willing to confront it, that person is likely to find a tsunami of support. We can only hope that day is coming soon.