

Danger, Reef Ahead!

Walter Starck PhD

On 3 September 2009 Mr Glenn Winsen wrote the Minister for the Environment, Heritage, Water and the Arts, the Hon Peter Garrett AM MP concerning water quality and fishing on the Great Barrier Reef. On 13 October he received a reply from Mr. Stephen Oxley, A/g First Assistant Secretary, Marine Division, saying he had been asked to respond.

As Mr. Oxley nicely encapsulates and regurgitates the current state of eco-delusions about the GBR, I have taken the opportunity to comment on various of his claims. Quotes in italics are from Mr. Oxley's letter. My comments follow in plain text.

"...catchment water quality, coastal development and fishing were all identified as priority issues."

While true in many places elsewhere, such impacts are impossible to find over most of the GBR and where detectable are of uncertain, minor or temporary nature. They are a political priority only. No significant degradation of the GBR is occurring and the vast majority of the reef remains in pristine natural condition. The purported threats are all hypotheticals which "might", "could" or "may" happen but don't actually exist.

"Coral reef habitats are gradually declining, particularly in inshore areas, primarily because of climate change and water quality degradation."

No effects of climate change outside the limits of natural climatic variability over the past millennium have been demonstrated. The two large bleaching events in recent years were both associated with periods of extended calm when wind mixing ceases and the surface layer rapidly heats up. This usually occurs in conjunction with El Niño conditions and is evidenced by characteristic bleaching scars in coral cores. There is no indication of increased frequency of bleaching events from climate change and some of the most severe events in recent centuries were during the cooler period of the Little Ice Age.

"Habitats shown to have reduced human contact have been assessed to be in better condition."

While it is a truism that human impacts on reefs are associated with human presence, there are abundant examples of healthy reefs with long term human contact. Of the over 2500 reefs in the GBR, only a couple of dozen are regularly visited and these remain healthy. The vast majority of reefs in the GBR are far removed from human contact and are rarely ever even visited. This is easy to verify. A flight over the GBR at any time will reveal only rare sightings of boats and many dozens of reefs will be passed over with no human presence.

"The report also found there is evidence of local declines in some soft coral species, as well as more than 350 species of hard corals showing localised declines."

Local declines in coral cover are common natural events resulting from floods and storms. This is often mistaken for environmental decline by office based academics.

"There is also concern about the decline in numbers for some shark species, two inshore dolphin species and dugong populations that are currently under threat."

Concerns about declines are not the same as declines. There is no good evidence for declines in sharks or two dolphins. The real threat to dugong comes entirely from politically correct tolerance of effectively unrestricted recreational hunting by indigenous Australians under the curious rationale that fast tin boats, outboard motors and guns are somehow "traditional".

“Water quality was the second most significant pressure cited by the report and the additional pressure of climate change has a significant compounding effect.”
“The Report found that nitrogen levels are now two to five times higher and phosphorus levels four to ten times higher than pre-European levels. High intensity cropping, grazing and forestry have been identified as key factors in facilitating the movement of these chemicals into the Reef lagoon.”

Declining water quality and the idea of a pristine pre-European condition are unfounded myths. The use of fertilisers, herbicides and pesticides has declined in the GBR catchment over the past two decades and land management practices have improved. As far as agrichemical pollution goes, water quality has never been a threat to the reef and is improving, not declining. The total estimated annual runoff of nitrates and phosphates would only amount to something in the order of a part per billion in the GBR lagoon even if it were not regularly flushed multiple times in a year. Natural nutrient fluxes from internal waves along the outer barrier regularly produce orders of magnitude greater increases and no one is concerned about that. In fact, it's thought to be beneficial.

“Sediments reaching the Reef are four to eight times higher than pre-European levels and land clearing and overgrazing are identified as key causes.”

The most widely cited study purporting to show a large increase in sedimentation after European settlement was based on an increase in a Barium isotope in coral skeletons just after 60,000 head of cattle were introduced into the Burdekin area in 1870. This was attributed to an increase in sedimentation caused by the cattle; but, this time also coincided with the ending of an extended period of drought and no explanation has ever been offered for why the million head of cattle now in the area have caused no further increase in the Barium isotope level.

No actual measurements of pre-European sedimentation rates exist. These are only estimates and extrapolations from unverified proxies which may or may not represent what is claimed. What is certain is that the inshore areas of the GBR are heavily blanketed in sediments that have accumulated over thousands of years and turbidity in coastal waters is overwhelmingly governed by re-suspension of these sediments through wave action, not by modern runoff from the land.

There is also an unwarranted assumption that levels of turbidity in flood runoff events are almost entirely attributable to farming and grazing when in fact it is readily observable that runoff turbidity from crop and grazing areas is often markedly less than from undisturbed natural areas. Crops and grasses are simply better at retaining soil than is either the rainforest or open eucalypt woodland they have replaced. Sediment trapping by dams and cessation of the widespread annual burning practiced by the pre-European inhabitants of the area can also be expected to have reduced sediment outflows. There is good reason to expect that agriculture and grazing is more likely to have resulted in a net reduction in levels of sediment discharge compared to the pre-European condition. The claims of four fold increases in sedimentation are simply speculation wrapped in techno-waffle and presented as fact.

“Pesticides have commonly been found in reef waters and animals where no Pre-European presence occurred.”

Herbicide and pesticide levels in the rivers of the GBR catchment are within safe limits for drinking water. Diluted by thousands to millions of times more in the ocean the exposure of marine life is far less than that of our food crops and our own bodies. As our mortality is declining and crop yields are increasing, the reef creatures would seem to be under little threat. Unfortunately the sensitivity of modern methods of detection seems to have exceeded our capacity to rationally assess the results.

“These water quality impacts have resulted in a decrease in coral diversity, an increase in macro-algae and are linked to Crown of Thorns outbreaks and heavy metal accumulation in animals.”

“Inshore coral reefs have deteriorated because of poor water quality and such a decline in inshore habitats will have implications for the industries and coastal communities that use the areas for recreation or to derive an income.”

The observed decreases in coral diversity are natural and temporary in origin as discussed above. The Crown of Thorns outbreaks are also natural recurrent events. After nearly half a century and perhaps a hundred million dollars in research, the DoT outbreaks are no better understood, nor any more a threat, than they ever were and they continue to happen as they do with various other starfishes and sea urchins in many other places. CoT outbreaks also often occur on isolated oceanic reefs far from any runoff or human influence. There is nothing to indicate the GBR outbreaks are anything other than natural variability. In fact they may play a beneficial role in maintenance of coral diversity as the starfish selectively prune the fast growing branching and plate-like species permitting the slower growing forms to catch up. This is especially noticeable a few years after severe storm damage when the faster growing species tend to dominate and when CoT outbreaks are likely to occur.

The inshore reefs of the GBR exist in a marginal environment for corals and are subject to frequent disasters and recovery. The main income they now generate is the grants and bureaucracy they attract to address every natural fluctuation as a portent of dire threat.

“The recently developed Reef Water Quality Protection Plan (Reel Plan) is an Australian=Queensland government agreement that aims to halt and reverse the decline in the quality of water entering the Great Barrier Reef lagoon from agricultural land in adjacent catchments by 2013. “

This is only a hypothetical solution to an imaginary problem. It will undoubtedly be a great success as there is no problem to begin with and the long term trend is positive in any event. The only uncertainty involved is who are the bigger dickheads, those proposing this huge waste of money or those who believe them.

“One of the more significant conclusions was that water discharged from rivers to the Reef continues to be of poor quality in many locations and land derived contaminants, including suspended sediments that contain nutrients and pesticides, are present in the Reef at concentrations likely to cause environmental harm.”

This is nothing but eco-waffle, impossible to demonstrate with real world examples. By far the most toxic, damaging and easy to demonstrate detriment to corals from runoff is the fresh water itself.

“There have already been significant fishing improvements on the Reel. The 2003 Zoning Plan has resulted in higher numbers of target fish in areas closed to fishing (e.g. coral trout) as well as greater Shark densities and less crown of thorns starfish outbreaks.”

This is more nonsense. The commercial fishing catch on the GBR is severely restricted and neither catch nor catch per unit of effort has increased. The 2003 Zoning Plan closed many of the best fishing grounds accessible from population centres and concentrated effort into smaller less productive areas. Calling this situation a significant fishing improvement says more about the naivety or dishonesty of such a claim than it does about the situation on the reef.

The total commercial catch on the reef is limited by quota to a total which equates to an average harvest rate of about 9 Kg/Km²/yr. This is less than one-quarter of 1% of the 4000 Kg/Km²/yr conservative estimate of the widely accepted average sustainable rate for coral reef fisheries.

Higher numbers of target fishes in areas where there is no fishing is a no brainer; but, even then, one must cherry pick the examples as the reverse is also easy to find. In the largest scale longest term survey of coral trout populations on the reef, the overall difference between closed and open areas was determined by appropriate mathematical tests to be below the level of statistical significance. Despite spending millions of dollars on this work and finding such good news, these results have never been published. Obviously they do not accord with the preferred agenda.

“But conversely, there are fewer target fish in areas remaining open to fishing.”

In addition to the situation referred to immediately above, one must also take into account several other factors when comparing different areas. Many of the most productive areas have been chosen for protection because they are biologically rich and poor areas left open because they are poor. In addition, there are often great variations over time both on the same reefs and between different reefs. Selected examples prove nothing. Then too, the maximum sustainable level of production in a fishery usually occurs at a population level of about 25 to 40 % of the unfished level. Even if assumed to be valid and due to protection, the differences being cited between closed and open areas are in fact good evidence that no useful purpose is being served by the protection.

“Fishing is an important industry throughout the Reef. Commercial fishing is estimated to be worth \$139 million in 2006/07.”

And with competent management it could be worth many times more and still be well below any limit of sustainability. Instead, we import two-thirds of the seafood we eat, all from resources far more heavily impacted than our own and impose a dirty great carbon footprint across the face of the planet. Then we sell off non-renewable mineral resources to pay for a renewable one we have in abundance and moronically call this sustainable management.

“...fishing mostly targets predators. These fishing practices have impacts on ecological process and the overall biodiversity of the Reef.”

Every organism that exists has an impact on its environment. The fact that fishing targets mostly predators is only a truism of marine ecology. Relatively few fishes are herbivores. The taking of herbivorous reef fishes is thought to have contributed to reef degradation in many other places. That GBR fisheries do not take herbivores should be seen as a plus, not as some kind of detrimental imbalance.

“By-catch of the inshore net fishery, like turtles, dugong, dolphins, sharks and sawfish, remains a concern and places further pressure on species already at risk, some which are not showing any signs of recovery from previous over-harvesting, particularly sea cucumber, turtles and dugong.”

The by-catch mortality of these animals is small and relatively insignificant compared to that permitted for so called “traditional hunting” purposes. If we are so concerned over the few caught by fishermen, why not just require such by-catch be given to an indigenous person and stop worrying about it?

The reality is that the GBR is a vast, near pristine natural area not threatened by anything. For over 40 years it has survived unscathed from a constant litany of purported threats, all dire and all demanding urgent attention and of course funding. Hundreds of millions of dollars have been spent with little achieved other than the establishment of a parasitic industry predicated on phony threats. The reef salvation industry now supports hundreds of researchers, bureaucrats and activists when we can't afford enough police, teacher or health care workers to properly provide for vital services where very real detriment is resulting.

In the reef salvation industry precaution demands that any suggestion of a threat be taken seriously. Funding is called for and research funded to investigate a problem never finds there isn't one. Research usually finds more research is needed and further funding is called for. If, after years of research with no solution and no dire consequences either, a problem loses its appeal, a new one is

soon found. Generations of researchers have now been schooled in a culture wherein threats to the reef are an unquestionable belief and all evidence is interpreted from such perspective. On rare occasions when evidence of good news cannot credibly be explained away, it is simply shelved (as were the extensive coral trout surveys). For a researcher to question the prevailing orthodoxy and insist on going with evidence contrary to consensus belief would be professional suicide. The gravy boat steams on.

The imminent reality facing us is not the demise of the GBR or catastrophic climate change years away (maybe), but oil demand exceeding supply over the next few years, or even months if economic recovery continue to improve. With any shortage, supply goes to the highest bidder, large users seek to hedge against further increases by buying futures contracts and speculators jump in. Another spike in oil price will install Global Recession 2.0 while backup and restore capacity is already exhausted from dealing with the current version. The problem will then be how to keep a complex high energy economic engine running with half its cylinders misfiring and the other half not working at all.

Most critical of all will be how to produce enough food at a price people can afford in a depression. To make matters worse, our food producing capacity is increasingly being restricted and burdened by ill-conceived constraints imposed as a sop to the eco-delusions of urban greens. The accumulating morass of often moronic regulations has already driven many primary producers out of business and is a severe constraint on those who remain. In a recession this burden will become unviable for many more. For consumers this will inevitably mean shortages and spiralling prices.

Threats to the reef and the climate change “crisis” are hypothetical arguments presided over by people who have never built, grown, manufactured or produced anything and whose practical ability is challenged by changing a light bulb. They glibly speak of saving things or switching to renewable energy as if doing so is only a matter of installing a few regulatory control switches and flipping the entire world economy over to sustainable or renewable at no loss or inconvenience to anyone. Never mind the uncertainties, delays, failures, and cost blow outs which plague vastly less complex and uncertain projects. The faceless “they” who supply all our material needs will just have to make whatever changes are necessary. Where food comes from is not a problem parasites need to think about.

Known reserves of cheap abundant fossil energy are depleting at a growing rate. Discovery of new reserves is increasingly falling behind depletion and new finds are ones which are costly to produce. Much new development has been cancelled or put on hold as a result of the recession. With oil in particular, existing production capacity barely meets current demand.. Assured shortages are now in the pipeline whenever demand recovers.

Without some unimaginable breakthrough in technology, the era of cheap abundant energy is rapidly drawing to a close. Along with it will go the capacity to pander to the eco-fantasies of a large urban population of non-producers or even to support them. In an energy constrained world, those who can will (eat). Those who can't, won't. Ironically, the eco-fantasists may be granted their desire to enrich the biosphere by themselves fertilising it.

Australia is better situated than any other nation to cope with what is coming but can only do so by a full and rational utilisation of our resources. It cannot do so with a severely restricted productive sector having to support a parasitic majority of bureaucrats and drones whose only purpose in life is to interfere with those who support them. All this is not someday, maybe, if. It is staring us in the face. When are we going to wake up?