

ENVIRONMENTALISM: How the Great Barrier Reef is mismanaged

by Professor Walter Starck

Australia's fishing industry is under threat, not from depleted fish stocks but from government-financed and sanctioned extreme environmentalism and crippling bureaucratic controls.

Professor Walter Starck, a marine scientist with 50 years' worldwide experience in reef studies, poses a series of questions to the Great Barrier Reef Marine Park Authority over what he argues is their irresponsible management of the reef's fish stocks.

Professor Starck is one of the pioneers in the scientific investigation of coral reefs. He grew up in the Florida Keys and received a Ph.D in marine science from the University of Miami in 1964. His half century's work has encompassed the discovery of much of the basic nature of reef biology.



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Annual harvest trends, catch per unit of effort and catch per unit of area, are fundamental metrics of fishery management. Figures for the Great Barrier Reef show no evidence of decline and the catch per unit of area is less than 1 per cent of what is widely considered sustainable for reef fisheries.

Why are these standard metrics being ignored by the Great Barrier Reef Marine Park Authority (GBRMPA)? What is the evidence in support of GBRMPA claims of over-fishing?

The Great Barrier Reef commercial fishing harvest is now limited to an annual quota of 3,061 tonnes. Averaged over the 347,000 km² of reef and lagoon area in the Great Barrier Reef, this comes to just under 9 kg/km²/year. The average harvest, over a broad range of reef areas elsewhere in the Pacific, is 7,700 kg/km²/year, and even the conservation NGO, World Resource Institute, cites 4,000 kg/km²/year as being a sustainable level for coral-reef fisheries.

The entire West Indian/Caribbean reef area is less than half that of the Great Barrier Reef and the reef fish harvest is over 100,000 MT. The Florida Keys, with less than 1 per cent the reef area of the Great Barrier Reef, has for many years sustainably supported a larger catch than the entire Great Barrier Reef.

With a harvest quota of less than one per cent of the widely accepted sustainable yield for reef fisheries, why do we then also have extensive closed areas, limited licences, quotas, closed seasons, size limits, bag limits, prohibited species, gear restrictions and even restrictions on the sale of catch?

Figured over the entire reef and lagoon area, the boats participating in the Great Barrier Reef commercial line fishery enjoy an average density of over 500 km² per boat. The average number of days fished per boat, however, is only about 50 per year. Thus, the mean fishing boat density comes to over 4,000 km² per boat on any particular day. For all practical purposes, commercial fishing pressure on the Great Barrier Reef as a whole is virtually non-existent.

There are of course some more favoured and accessible areas that do receive greater fishing pressure than other areas, but this only means that most of the region receives even less than the extremely low average figures indicate. However, as the extensive coral trout surveys (conducted by GBRMPA but unpublished) clearly show, even these popular areas show no clear evidence of over fishing.

With a fishing intensity of one small vessel in over 4,000 square kilometres of reef waters and a total harvest restricted to an annual catch that averages 90 grams per hectare, claimed threats of over-fishing are simply absurd and the increasingly elaborate restrictions entirely unwarranted.

Economic value

GBRMPA has widely claimed the value of Great Barrier Reef-based tourism to be worth \$3.5 billion, and the reef component alone as being \$1.4 billion. They also have often cited the value of commercial fishing as being only about \$119 million.

The actual reef component of most visitors' stays is a single day-trip during which they spend a few hours on the reef, and only about half of all visitors to the region even visit the reef. The value of reef tours (about \$150 million) is in fact very close to the value of reef-based commercial fishing (about \$130 million).

Attributing the total value of all regional tourism to a one-day visit to the reef by about half of all visitors is no more justifiable than would be attributing it all to commercial fishing, based on the fact that most visitors eat seafood during their stay. When the value of recreational fishing (about \$240 million) is added, the value of fishing activity can be seen to be over twice that of reef tourism.

Is the value of Great Barrier Reef tourism claimed by GBRMPA deliberately intended to mislead Parliament and the electorate, or just grossly incompetent economic analysis?

In the lead-up to the recent large expansion of no-fishing "green zones", GBRMPA

estimated the impact on commercial fishing to be between \$0.5 million and \$2.5 million. The Great Barrier Reef fishing industry restructuring cost estimate is now \$50 million and could easily double before completion. On top of this is the ongoing economic loss, which a University of Queensland study has estimated to be \$23 million annually in foregone production.

Was this GBRMPA mis-estimate also a deliberate attempt to mislead Parliament and the electorate, or just incompetence again?

It is also interesting to note that, in the most recent Access Economics report commissioned by GBRMPA (and also widely cited by them), the estimate of the Great Barrier Reef catchment area's tourism value is \$4.3 billion. By implication and misrepresentation, GBRMPA is laying claim to the entirety of regional tourism, when the true Great Barrier Reef component is about 3.5 per cent of this amount. In other words, they are exaggerating by about 3,000 per cent.

Reef management

Reef managers are now claiming that the Great Barrier Reef has the best-managed reef fishery in the world. What we have in fact is the most over-managed, costly, highly restricted, smallest, and least productive reef fishery in the world.

By this criterion we could also have the best-managed grazing industry and agriculture as well. All we have to do is reduce them by 99 per cent and any associated problems will become negligible.

How much of the widespread public support for GBRMPA is based upon misinformation they themselves have promoted?

Water quality reviews

Threats to water quality are currently a major GBRMPA concern receiving wide publicity. In particular, siltation, nutrient run-off and herbicide contamination from agriculture have been cited as major concerns.

David Williams has conducted the most comprehensive review to date of effects of run-off on the Great Barrier Reef. His work was conducted for GBRMPA and funded by them. He found there was little evidence of such impacts.

In the summary, he stated, "clear impacts of enhanced run-off of sediments, nutrients and contaminants (as a result of land use) on coral reefs of the Great Barrier Reef ecosystem have proven difficult to detect. Impacts are unlikely for the majority of reefs that are located well offshore."

An earlier detailed review, focused particularly on nutrients, likewise said: "It is tempting to conclude that the water quality status of the central Great Barrier Reef is not at

immediate risk and that at current nutrient input rates, external sources will have little future impact on water quality ...".

How does GBRMPA reconcile these findings with its claim of declining water quality? Where is the evidence for declining water quality that these researchers were unable to find? Agricultural use of fertiliser and herbicides has been decreasing for some years. What is the evidence for an increasing impact? How does agri-chemical run-off in the rivers - that is within Environmental Protection Agency (EPA) safe guidelines - become a threat to the reef when diluted a further million-fold in the ocean?

Overview

Australia has the world's third largest Exclusive Economic Zone (EEZ), just below those of the United States and France, but ahead of Russia, with the total area actually exceeding that of its land territory. In terms of EEZ area, Australian fisheries harvest rate is about one-twentieth that of the US.

The wild caught harvest here comes to just under 40 kg/km² per year. In the US, the relatively small sub-tropical Gulf coast region alone produces over three times the total commercial catch of all of Australia.

Vietnam, Malaysia, Thailand, Mexico, Bangladesh, the Philippines and Burma have only a fraction of the EEZ area of Australia and are each producing over five times or more wild caught harvest than Australia, in addition to as much as 25 times greater aquaculture production.

Despite our small population, vast EEZ and ideal circumstances for extensive aquaculture, we still do not even produce enough seafood to meet domestic demand. Imports now amount to 70 per cent of consumption by edible weight and cost \$1.8 billion.

A CSIRO study estimates that, by the year 2020, an additional 610,000 MT will be needed to meet growing demand. This amount represents an almost 400 per cent increase in imports over the next one-and-a-half decades.

This raises two very important questions:

First, is the relatively low level of the Australian wild catch fishery really at the limit of capacity for the resource? Is an annual harvest of only 0.4 kg/ha actually the maximum that our waters can sustain? If our fish stocks are so depleted, why do so many Indonesian fishermen keep coming so far, and facing such risks, if the resource is truly so meagre? Are they coming here to sunbathe?

Second, why should Australian aquaculture be at a cost disadvantage to Europe, North America or Japan - all of which have booming aquaculture industries much larger than

Australia's, despite more difficult natural conditions, plus equal or greater cost for land, labour and equipment? The overwhelming disadvantage of Australian aquaculture and fisheries is clearly neither natural nor economic, but government-imposed restrictions, demands, changes and uncertainties.

A much more empirical, rational, evidence-based and experimental approach to management is sorely needed. A far more inclusive, cohesive, organised, determined and effectively aggressive approach must be taken by the industry itself.

Commercial fishermen, aqua-culturists and recreational anglers all face similar threats from an overzealous and incompetent bureaucracy.

All must put aside blaming one another and join forces to confront the real enemy. Divide and conquer is the bureaucrats' most effective tactic, and a united front of opposition is the one thing they and their political overseers cannot ignore. Everyone involved will have to accept some compromises in formulating objectives.

Clear, well-reasoned demands are badly needed. Legal, political, public relations and scientific expertise is essential, and money will have to be spent.

In the end, a key objective must be for the industry itself to assume a strong role in its own management and regulation. This is entirely in keeping with fundamental democratic principles and the only means of avoiding the kinds of disastrous decisions now being made by academic experts and managers with little knowledge of the realities of either the industry or the actual resource.

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