

## INSIGHT



## Reefgate - or a spat between Scientists?

STORY PETER SCOTT | PHOTOGRAPHY TOURISM QUEENSLAND

*"Bureaucratic restrictions, requirements and charges imposed by the Great Barrier Reef Marine Park Authority have become a major deterrent to any healthy productive use of the Great Barrier Reef. At the same time, it has fostered a substantial pseudo-industry of research and public relations serving to promote its own institutional agenda.*

*In a world facing serious economic difficulties, bloated unaccountable bureaucracies addressing non-problems are a luxury we can no longer afford. It is time for the electorate and the Parliament to start demanding answers and pruning the rot.*

*In the lead up to the last election, Kevin Rudd said that, if elected, he would, '...take a meat axe to the bureaucracy.' This is a good place to start.*

Towards the end of March, I received what could at first be described as an explosive document from Dr Walter Starck, a well known North Queensland marine scientist, claiming that the Great Barrier Reef Marine Park Authority had crossed the line in terms of ethical reporting of scientific studies.

The Starck communique claimed, amongst other things, that the Great Barrier Reef Marine Park Authority report published in a well credentialed American scientific journal produced by the National Academy of Sciences, lacked credibility. The report, which claimed remarkably rapid, large, widespread and diverse environmental benefits from expanded protected areas introduced on the Great Barrier Reef in 2004 and produced by 21 authors, all employed by or recipients of generous funding from the Authority, was in Starck's view, a review of their own work and lacking true scientific basis.

Even worse, in Starck's view, was the fact that the authors declared no conflict of interest and scant actual evidence was provided to support the claims of the various authors.

Walter Starck is no shrinking violet - he knows his subject, is highly experienced and widely researched. He immediately began a campaign designed to highlight what he believed was a blatant misrepresentation of facts by scientists who should have known better.



While the typical response from the Authority was to attempt to justify its position, Starck was not satisfied and immediately brought his concerns to the attention of several key government ministers including the Minister for the Environment Peter Garrett.

Curiously, it wasn't long after Starck had embarked on his campaign to right what he regarded as a serious breach of scientific integrity that the Minister for Innovation, Senator Kim Carr announced that the federal government was to establish an independent body to ensure that institutions are taking appropriate action in response to allegations of research misconduct.

"The Australian Government takes the issue of research misconduct very seriously," Senator Carr said.

"With the establishment of the Australian Research Integrity Committee, Australians can be confident that research activities will meet moral and ethical standards. This is about ensuring that taxpayers get value for their investment in public sector research and protecting the Australian brand.

"The committee will assure researchers and the Australian public that institutions are taking appropriate action on serious allegations of research misconduct.

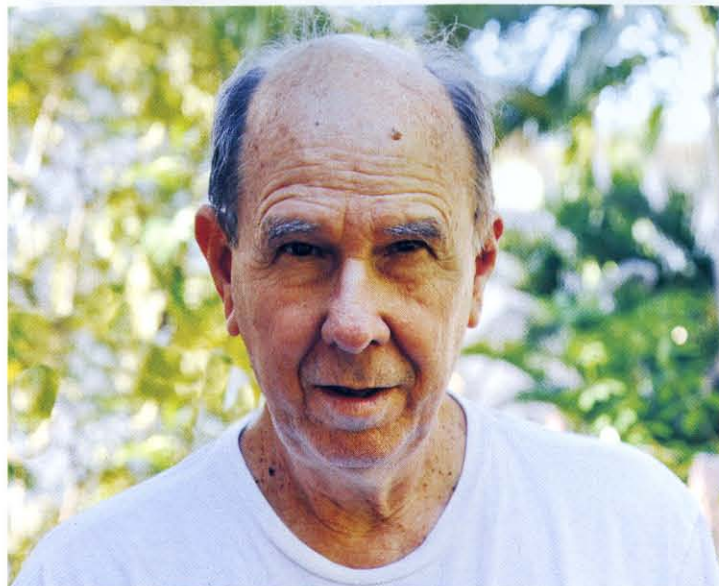
"While the committee will assess whether an institution has followed proper process in response to an allegation of research misconduct, it will not impinge on the institution's autonomy - institutions will still be responsible for assessing if misconduct has occurred.

"The committee's considerations will be in line with the framework set out in the Australian Code for the Responsible Conduct of Research, which guides institutions and researchers in responsible research practices and promotes integrity," Senator Carr said

Starck has produced an authoritative paper in response to the reviews published in the Proceedings of the National Academy of Sciences (PNAS). The paper which analysed the findings of the 21 scientists concluded that, "Bureaucratic restrictions, requirements and charges imposed by the Great Barrier Reef Marine Park Authority have become a major deterrent to any healthy productive use of the Great Barrier Reef. At the same time, it has fostered a substantial pseudo-industry of research and public relations serving to promote its own institutional agenda. In a world facing serious economic difficulties, bloated unaccountable bureaucracies addressing non-problems are a luxury we can no longer afford. It is time for the electorate and the Parliament to start demanding answers and pruning the rot. In the lead up to the last election, Kevin Rudd said that, if elected, he would, "...take a meat axe to the bureaucracy." This is a good place to start.

Starck provided an interesting introduction to the findings of the 21 scientists. In part, this is what he had to say, "For the past half century the Great Barrier Reef has sustained a Queensland industry predicated on "saving" the reef from a never ending succession of purported "threats". All have been declared as dire and of course, they require urgent funding. None have ever become manifest in any serious manner and the hundreds of millions of dollars spent in research has never resulted in a solution for any these non-problems.

"The reef today remains a vast area of pristine nature with the majority of its over 2500 individually named reefs seldom fished or even visited by anyone. The Great Barrier Reef Marine Park Authority headquartered in Townsville has grown into a 45 million dollar a year bureaucracy charged with "managing" the reef. This it does by remote



Dr Walter Starck

control from air conditioned offices where it oversees the application of hypothetical solutions to imaginary problems and administers a morass of regulations which have effectively strangled most healthy productive activity on the reef. Starting with no problems and only their own assessment of results, they have declared great success. This has been proclaimed widely through their extensive "educational" activity which serves to promote the Authority and create a high public profile for it.

"In 2004 they stumbled badly with a large expansion of no fishing areas (a.k.a. green zones) on the reef. This resulted in a devastating impact on the small but important commercial fishing industry in the region as well as over 300 mandatory criminal convictions for otherwise law abiding recreational fishermen, almost all of whom were arrested for inadvertently crossing one of the complex maze of unmarked boundaries. The upshot has been a massive compensation payout for the commercial fishermen, considerable public resentment and replacement of the GBRMPA chairperson.

"With a sore need to remove the smudges from their workbook after the green zones debacle plus a juicy prospect for substantial expansion through management of a vast new Marine Protected Area in the Coral Sea, GBRMPA recently produced a glowing report of "extraordinary" benefits from the expanded green zones. To underscore the credibility and importance of their claims the report was published in one of the world's most prestigious scientific journals rather than as just another of their own numerous publications. However, in doing this they badly overreached.

"The report appeared in the Proceedings of the National Academy of Sciences in the U.S. This journal has strict requirements for authors. These include:

- a. A requirement that authors declare no conflict of interest; yet, all 21 of them are employed by or are recipients of generous funding from GBRMPA and they are reviewing outcomes of their own findings and recommendations.
- b. A requirement that authors must declare sources of funding; yet, this cannot be found in the report.
- c. A requirement that all data and materials be made available for independent examination; yet, the supplementary information posted on the PNAS website fails to provide this.



d. A requirement that authors acknowledge and address any conflicting evidence. Not only was this not done in regard to a number of key claims, the conflicting evidence is clear, convincing and, most extraordinary of all, authored by some of the same researchers as those in the report.

This situation has been brought to the attention of PNAS and they have promptly responded that they are looking into it. The appearance of multiple serious breaches of scientific ethics as well as explicit requirements of the journal is incontrovertible. It is difficult to imagine any credible explanation which might indicate otherwise. This is a very big deal and a full explanation by GBRMPA is demanded. Any attempt to pretend otherwise will only compound the seriousness of this matter.

Starck, as well as writing to politicians, also predictably wrote to the Great Barrier Reef Marine Park Authority Chairman, Dr Russell Reichelt. Not surprisingly, Dr Reichelt attempted to dismiss Walter Starck's assertions and issued challenges to Dr Starck to produce contrary scientific evidence.

As I said, Walter Starck is no fool – there are probably very few in the scientific community with such broad based knowledge of reef sustainability. As expected, Starck took up the challenge and in a response to Dr Reichelt, Starck claimed that he was "disappointed that it (Reichelt's response) fails to address most of the substantive concerns I have raised and serves more to obscure than to clarify the few matters which are touched upon."

Starck continued, "Your reply somewhat muddles together the declaration of no conflict of interest and acknowledgment of funding sources which are two distinctly separate requirements for PNAS authors.

"It is difficult to conceive any meaningful concept of conflict of interest which would find no conflict in 21 employees and beneficiaries of generous funding from an organisation producing a glowing assessment of the management of that organisation. If this study had been produced as an in-house review published by GBRMPA, the inherent interests would have been apparent and require no caveat. However, by publishing in a leading international journal, bannerizing the authors as a who's who of Australian marine science, explicitly declaring no conflict of interest and not making clear that all of the authors are deeply beholden to GBRMPA, a quite misleading impression has been presented that this is an independent assessment.

"Acknowledgment of support is not the same as disclosing sources of funding for 'the work' as required by PNAS. The former is broad and loose in scope. The latter is much more specific. What is important in this instance is not a listing of organisations which may in some manner have contributed to research used in this review; but, who funded this particular work in itself. It seems unlikely that an effort of this magnitude took place informally as a spare time voluntary effort without any specific funding or approval of resource usage from higher management. For example, the review itself states that, "Another important observation emerging from this review is the extent of relevant data that are not published or readily accessible. A full picture of the effects and effectiveness of zoning on the GBR has required extensive use of gray literature, previously unpublished data, and collation of separate data sources."

"Surely, the task of assembling and collating this considerable body of diverse and scattered information must have required something more than incidental effort and funding.



"That the lead author and three of the co-authors are GBRMPA employees and only GBRMPA has access to much of the most important unpublished material, makes it seem reasonable to assume that GBRMPA has played a lead role in the production and funding of this report. While the failure to make this clear might have been unintentional, it is far from unimportant and now that it has been brought to attention any attempt to ignore or dismiss it can only be seen as deliberate obfuscation.

"It should also be noted that not one, but three, of the co-authors of this review have been recipients of Pew fellowships and a fourth is also a co-author of a Pew funded study conducted by the ARC Centre of Excellence for Coral Reef Studies. The key finding of this study was that the most cost effective option for management of a vast new Coral Sea MPA would be make it entirely a no take area managed by GBRMPA. Although the fact that McCook et al. also emphasise the importance of no take zones and the cost effectiveness of GBRMPA management might be seen as affirmation of the Pew sponsored findings, it could also be seen as a concerted campaign to that end. Limiting disclosure of Pew involvement to the mention that one author has received a Pew fellowship is more than a little misleading in this regard.

"Your reply further states that, "The paper also draws attention to cases of conflicting evidence and does not ignore them." This is factually incorrect and such can easily be seen in the clear examples I cited in my own review of McCook et al. To briefly mention just four important examples:





**Australian Government**  
**Great Barrier Reef**  
**Marine Park Authority**

Dr W Starck  
72 Paxton St  
NORTH WARD QLD 4810

Dear Dr Starck

Thank you for your email (14 April 2010) expressing concerns about the recent scientific paper 'Adaptive management of the Great Barrier Reef: A globally significant demonstration of the benefits of networks of marine reserves'. Your email covered the issues of scientific propriety and factual validity, and included a comment about availability of materials, data and protocols. I note that you acknowledge the paper is published in a very prestigious international scientific journal, which has its own processes of independent review.

The normal way of handling any potential conflict of interest is to ensure that the interest is disclosed. The paper clearly acknowledges the sources of support on page 7: these include not only the GBRMPA and a Pew Fellowship in Marine Conservation but a number of others listed also. The paper also clearly states author affiliations. Given this open acknowledgment of support from long-established research funding sources, I could find no concealment of interest.

The paper is a review paper and as such the authors are citing their own previous work on various topics as well as citing the work of others. The paper also draws attention to cases of conflicting evidence and does not ignore them.

All of the methods, data and analyses are appropriately referenced within the paper and its online Supporting Information, consistent with scientific publication practice and the PNAS requirements. Where the data have been previously published, this is indicated by references to the original publication including various reports available online; where new data are included in the paper, the methods and relevant details are indicated where appropriate- often this entails citation of a related publication. In your final remarks you quoted a statement from the paper about the extent of relevant data that are not published or not readily accessible. This comment refers to the situation prior to publication of this paper and the release of the data sources in this paper was a very positive step forward.

Taking these observations into account, I found nothing to support your assertion that there are "serious issues of scientific integrity" in relation to conflicts of interest.

I note that you disagree with various findings in the paper. The Great Barrier Reef Marine Park Authority makes use of the best available scientific information, and we use the scientific peer-review process as the preferred measure of quality. We accept that debate between opposing views is normal process of building understanding whether it be in scientific or other spheres of public discourse. If you have scientific data or analysis that provides an alternative way of viewing these issues or which help to build a more solid scientific knowledge base, I encourage you to publish those via processes that include clear statements of methods, sources of data and supported by peer review.

Yours sincerely

Russell Reichelt  
Chairman

7/5/2010



The extensive long term coral trout surveys by Ayling, which repeatedly found no statistically significant difference in trout numbers between closed and open reefs, have been ignored.

While much was made of a doubling of trout numbers on protected reefs in one of 8 reef areas surveyed, the fact that numbers on reefs open to fishing also doubled was ignored as was the decline in numbers on protected reefs in 5 of the 8 areas.

McCook et al. claim that expanded protected zones have resulted in, "...major, rapid benefits of no-take areas for targeted fish and sharks...." Yet, this is directly contradicted by Heupel et al., 2010, who found that in reef sharks, "...few individuals showed fidelity to an individual reef suggesting that current protective areas have limited utility for this species." Although both studies appear to have been in press at the same time, Heupel was a co-author in both. It is thus difficult to understand how the claim in McCook et al. could be made in good faith and without qualification.

McCook et al. state that, "...fish abundances in no-entry zones suggest that even no-take zones may be significantly depleted due to poaching." However, no discussion or even mention is made of the voluminous evidence which clearly shows the exceptionally low fishing pressure on GBR fisheries.

"In your reply to me as well as the one to Fishing World magazine on this matter, you intimate that my concerns have no credibility because they have not been published in a peer reviewed journal. Such a

*“ So often in matters of propriety the most serious malfeasance resides not in the original offence, but in the attempt to deny it. ”*

position does not seem to be a very well considered one for several reasons:

It would appear that you will also need to dismiss the McCook et al. study itself; because, as cited above, they admit making extensive use of "gray literature" and unpublished data.

It will also require dismissing your own statements on this issue as mere opinion, for they too have not been published in a peer reviewed journal.

What I have written on this matter is in fact a peer review and what you are suggesting would then be a peer review of a peer review. Presumably this too would be subject to further peer review. Somehow, it seems that this line of reasoning may have become mixed up with an old script from Yes Minister!

Recent exposure of the misuse of peer review to censor conflicting evidence as well as using non-peer reviewed status to dismiss such evidence, while at the same time freely citing the latter when it supports a desired agenda, has brought great discredit to climate science and the IPCC. It would be well advised for GBRMPA to drop this failed tactic.

"In my email of 14 April drawing my concerns to your attention, I noted that PNAS authors must, "...make materials, data, and associated protocols available to readers."

"I then requested that such data be made available for independent examination via download from the internet and asked that it should include all of the numerous unpublished coral trout, crown-of-thorns and coral bleaching survey reports conducted for GBRMPA.

"In your current reply you state that the situation in respect to relevant data that are not published or not readily accessible, "... refers to the situation prior to publication of this paper and the release of the data sources in this paper was a very positive step forward."

"Perhaps it is my error; but, I can find no such data in either the McCook et al. review itself or in the online supplementary material and I cannot see any indication of where it may be found elsewhere. If you could please advise where the released data to which you refer can be accessed it would be appreciated.

"For GBRMPA to find nothing to support any concern regarding scientific integrity in any of the above plus the multiple other, specific, well documented and easily verified matters to which I have drawn notice, is unacceptable. Research integrity is not an optional extra which may be exercised at the discretion of GBRMPA. As Chairman of an important Australian research institution you have an obligation under the Australian Code for the Responsible Conduct of Research to properly investigate any credible allegations of research misconduct. Clearly, there is no requirement that such concerns be presented as a formal scientific report in a peer reviewed journal. Your one page letter of dismissal which fails to satisfactorily address any of the over 18 specific concerns I have documented falls well short of properly meeting this obligation.

"The immediate response from JCU affirming that they take such allegations seriously and will properly investigate them with regard to the reef ARC stands in marked contrast to this belated and dissembling response from GBRMPA. So often in matters of propriety the most serious malfeasance resides not in the original offence, but in the attempt to deny it. I hope that this issue does not have to be pursued down such an unnecessarily unpleasant path."

There is no doubt that Starck has a valid argument and he has articulated his case well. Unfortunately, his valid and well documented argument concerning possible scientific misconduct will largely fall on deaf ears. It will remain to be seen whether the federal government's Australian Research Integrity Committee has any real power to expose research misconduct and reporting or will it be like Fuel Watch and Grocery Watch!

After all, the global industry of climate change science was largely based on improper or misleading findings of certain scientists. That many of the supposed facts pertaining to climate change have now been found to be false, is of cold comfort to those who earned the ire of many of their peers, politicians and a green minority and perhaps unfairly were labelled 'climate change sceptics'.

Let's earnestly hope that if Dr Starck's allegations against those 21 scientists involved in the publication of the report on 'Adaptive management of the Great Barrier Reef: A globally significant demonstration of the benefits of networks of marine reserves' is sustained, appropriate action will be taken against those who breached the Australian Code for the Responsible Conduct of Research. If I was a betting man, I wouldn't be offering odds.