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# The Great Barrier Reef – History, science, heritage, and the Great Barrier Reef – Finding the right balance: Book reviews

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## Book Reviews:

**Bowen, J. and M. Bowen, 2002. *The Great Barrier Reef – History, Science, Heritage*. Cambridge University Press. xvii + 454pp.**

**Lawrence, D., R. Kenchington and S. Woodley, 2002. *The Great Barrier Reef – Finding the Right Balance*. Melbourne University Press. xii + 263pp.**

Given the worldwide concern for coral reefs in general, it is not surprising that the Great Barrier Reef (GBR) should be a particular focus in Australia, as manifested by the appearance of two books, at almost the same time, dealing comprehensively with this topic. Both books are very similar in some respects, such as the authors' concerns for the long-term conservation of the GBR, but differ markedly in their approaches; the first book provides a comprehensive history of the GBR, while the second focuses on the GBR Marine Park management.

*The Great Barrier Reef – History, Science, Heritage (GBR-HSH)* is an impressive work and reflects the authors' fastidious research to provide 'a cultural and ecological history of European impact, from early voyages of discovery to the most recent developments in Reef science and management'. Its coverage commences with the quest for '*terra australis*' and the mystery of corals, to the concerns regarding management of the GBR Marine Park in the 21<sup>st</sup> century and beyond. It is a delight to read, providing a wealth of historical facts, events, and insights, and should be read by everyone with an interest in the GBR.

*The Great Barrier Reef – Finding the Right Balance (GBR-FRB)* deals comprehensively with the conservation of the GBR, and in particular, with the mechanisms by which it has been attempted. It provides a historical sketch of the increasing awareness of the GBR, and how the issues of oil drilling and limestone mining triggered the concerted movement towards the conservation of this Australian icon. It is well written, but its greatest quality is that it is written by three authors who were intimately involved in the establishment of the GBR Marine Park over the past 25 years, and of the GBR Marine Park Authority (GBRMPA), on whose responsibility rests the management of the marine park and its resources. *GBR-FRB's* scope and coverage is comprehensive, and sometimes reads like an unending quest to find and apply another novel guiding principle. However, particularly for multidisciplinary professionals engaged in environmental management, *GBR-FRB* will undoubtedly become an invaluable and well-thumbed addition to their bookshelves.

Both books provide outstanding insights into the GBR and its conservation, are superbly produced and illustrated, are highly readable, and extremely

good value. However, I found a couple of niggles – subjective, though they may be.

The steel-hulled, sail-assisted paddle steamer *Torch*, under the command of Lieutenant Chimmo, is mentioned (*GBR-HSH*, p. 103) as assisting the *Herald* in Reef surveys. Apart from a further comment about the *Torch's* lack of speed, no further mention of its valuable contribution is made. The *Torch* accompanied the *Herald* on numerous surveys between 1853-1856, until concern over Gregory's Northern Australian Expedition, caused the *Torch* to be dispatched from Newcastle in June 1856 '... to render assistance to the above expedition by his Excellency, the Governor General of New South Wales' (Chimmo, 1856; 1857). As probably the first steamship to sail the entire length of the GBR (and through Torres Strait to the Victoria River), the record of that voyage is extremely valuable, and more use could have been made of it.

The appointment in 1859 of George Heath, as the marine surveyor for Queensland, marked a turning point in the hydrographic knowledge and shipping safety on the GBR (*GBR-HSH*, p. 120): lighthouses were built and colonial hydrographers trained and put to work. By the 1880s, however, it became clear that shipping losses were still unacceptable, and Heath again involved the Royal Navy's Hydrographic Department. *HMS Dart* arrived in 1883, and together with *HMS Alert*, *Lark*, *Paluma*, *Penguin* and *Waterwitch*, spent the next twenty years surveying the GBR – a phase which, in my view, deserves some coverage.

The *Luana* and Mr. A.C. Wishart 'who remained throughout the year as its skipper, assisted by the Yarrabah crew...' (*GBR-HSH*, p. 260), assisted the Yonge Expedition, which on departing, left 'a volunteer, Mr. H.C. Vidgen, to lock up the huts and supervise the Aboriginal workers in cleaning up the site' (p. 275). This account understates the role played by the then 29 year-old Herbert Charles 'Carl' Vidgen; he had crewed the *Luana* from Brisbane, arriving at Low Isles on 22 July, bringing. '... two boys who had been taken on board at Yarrabah ... His coming, totally unexpected, proved a gift of fortune. He was later induced to 'sign on' as a member of the non-scientific staff of the expedition, always accompanied the *Luana* on her trips to the mainland and on her regular boat 'stations', and directed the work of the boys on the island – building, carrying, chopping firewood in the mangrove, keeping the camp clean and tidy and a thousand other things. He was a first-class 'plain' cook, and possessed of an invincibly cheerful disposition; a great helper and a good friend' (Yonge, 1930, p. 30).

'Carl' Vidgen helped to set up the Base Camp on Low Isles, arranged supplies from the mainland, and became invaluable rigging and operating the dredging equipment on the *Luana* so necessary for collecting specimens from the waters around the adjacent reefs. In addition, the expedition had expected

to find fish in abundance - but this was not to be. However, the mangrove swamp on the island was the nesting place of Torres Strait pigeons and '... thanks to Mr. Vidgen's prowess with the gun, a week seldom passed without a meal of stewed pigeon' (Yonge, 1930, p. 38).

The 1954 London Convention is referred to (*GBR-HSH*, p. 291) somewhat enigmatically. It was adopted by the Commonwealth Government through the *Pollution of the Sea by Oil Act 1960*, although the government only became a signatory to the convention in 1962, following amendments to the earlier agreement. Signing of the convention certainly did not follow 'Commonwealth legislation on jurisdiction over territorial seas' – which was effected by the *Seas and Submerged Lands Act 1973*.

There are a number of statements made by the authors of *GBR-HSH* which are dubious, and whose main role appears to be maintaining a story-line. Thus, for example, on p. 293, we are told that Queensland was 'always the most culturally backward state in Australia', based on 'long-term surveys by the Australian Council for Educational Research'. However, as early as December 1869, Queensland abolished school fees, thus becoming the first Australian colony to enjoy free elementary education. Similarly, on p. 326, it is claimed that tankers from the Middle Eastern oilfields coming to Australia and Japan must pass through the Suez Canal. However, most oil supplies for Australia and Japan come from the Arabian/Persian Gulf, without going near the Suez Canal.

The authors also claim that State governments '... have resisted having their properties given World Heritage listing since it prevents further commercial exploitation' (*GBR-HSH*, p. 371). State Governments have supported most World Heritage listing of their properties with enthusiasm, and only two State Governments (Queensland and Tasmania) have baulked (all the way to the High Court) at only one or two nominations. In any case, World Heritage listing does not prevent further commercial exploitation – although some suggest it should!

The section on the 'Oyster Point Controversy' (*GBR-HSH*, p. 408-412) adds disinformation to an issue that resulted from disinformation in the first instance. The section is largely based on the Senate Committee's 'comprehensive inquiry into the controversy', augmented by a misuse of a useful, but generalized, paper (Haynes and Michalek-Wagner, 2000) from a symposium on water quality trends on the GBR.

The Senate's 'comprehensive inquiry' was a cynical attempt by the Democrats at ensnaring the 'green' vote. I declare an interest in this issue, as I was appointed the 'Independent Monitor' for this development, appointed jointly by the Queensland and Federal Government to manage the impacts from the project. I had to insist on appearing before the enquiry – it seemed the

enquiry did not wish to hear independent views and it was only after considerable persistence that I was given a hearing in December 1998, three months after the previous hearings. The political nature of the enquiry is demonstrated by the fact that the final report consists of three separate reports by the individual senators representing the three major political parties!

At *GBR-HSH* p. 409, the authors speculate on what might occur following the flow of acidic leachate into Reef waters, suggesting that complexed heavy metals might act synergistically with organochlorine herbicides to produce widespread toxic effects. Not only is this chemical scenario most unlikely, but this speculation is presented as proven fact, citing Haynes and Michalek-Wagner (2000) in apparent support.

The section on scientific research for management (*GBR-FRB*, p. 114) is interesting, not so much for what it says, but for the view of science and its role in management that these authors (as managers) hold. One gets the impression that the authors have had some unproductive interactions with scientists, and consequently blame this on the short-comings of the scientific method. Later (*GBR-FRB*, p. 136), they ascribe these difficulties to the differing views held by scientists and managers. Simplistic stereotyping (as in their Table 4) is inaccurate and unhelpful – many scientists are also active in environmental management, while many managers actively contribute to scientific endeavours. Managers, in consultation with scientists, must ensure they ask the right questions to meet their needs, and scientists must appreciate that politics and economics will influence decision-making in the real world.

While water quality poses a potential threat to the GBR, management must ensure that these issues are kept in perspective, if rational and informed debate is to take place. Thus, while nutrient leaching from cane lands is seen as a major issue (*GBR-FRB*, p. 156 and 208), the data to distinguish cane lands from other agricultural land uses are not convincing (Bramley *et al.*, 2002), and, in any case, 'environmental degradation arising from the downstream export of soil-borne P from Herbert cane lands is likely to be concentrated in freshwater areas' (Edis *et al.*, 2002). Furthermore, the statement that 'increased porosity as a result of eutrophication may weaken the skeletons of corals and make them more prone to damage from storm action' (*GBR-FRB*, p. 208), was an early hypothesis not supported by the ENCORE study (Koop *et al.*, 2001), a long-term study, partially funded by the GBRMPA.

Siltation and sedimentation, too, must be kept in context: for example, *GBR-FRB* (p. 208-210) reports that 'studies have shown that sediment discharge ... may have increased fourfold over the last 150 years', but it does not report that Neil *et al.* (2002) also concluded that 'most sediment in the GBR is generated by resuspension rather than river input'.

All of these findings, in turn, stress the primary importance of estuarine management for the protection of the GBR.

Finally, statements such as 'it is obvious that a major spill would have a devastating impact on the reef ecology' (*GBR-FRB*, p. 195), and 'the Australian public needs to understand that, although there is a low probability that major oil spills will occur in the Great Barrier Reef World Heritage Area at some time in the future, they must be aware of the potential catastrophic damage that they may cause' (*GBR-FRB*, p. 200) are made as a matter of faith, reflecting conventional wisdom rather than scientific facts. The largest oil spill the world has seen was into the reefal areas of Kuwait and Saudi Arabia, and contrary to expectations, catastrophic impacts were not noted (Nigel and Roberts, 1993; Saenger, 1994; and references therein). In the absence of any data, why should we assume that the GBR will react differently?

The GBR is an icon that, through World Heritage listing, Australia shares with the world. As such, all Australians have a responsibility to maintain its riches in perpetuity. The five authors of these two books have exercised that responsibility in a most creative way.

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