

20 Will the Great Barrier Reef Survive Human Impact?

Frank H. Talbot

CONTENTS

Comparison with the Land	331
Time Scales	332
Who Controls the GBR?	332
The Importance of the GBR to Australians	333
What is Actually Happening, and What Might Damage the GBR?	335
Inner Reefs	336
Endangered, Threatened, Vulnerable, or Rare Species of Marine Mammals and Turtles (“Charismatic megafauna”)	338
Acid Sulphate Soils	339
Trawling and Line Fishing	339
Aquaculture	340
Climate Change	340
Coastal Planning	340
Hamilton Island	341
A House Lease in Lizard Island National Park	341
Hinchinbrook Channel Development	342
Environmental Impact Assessment	344
Conclusion	345
References	346

Without fresh thinking and fundamental attitudinal and management changes, the Great Barrier Reef will not “survive” as we enjoy it today . . . it will be slowly and continuously degraded both biologically and aesthetically.

COMPARISON WITH THE LAND

In thinking of the future of the Great Barrier Reef (GBR), we can learn from our treatment of the Australian landscape. In the process of increasing agricultural and pastoral production we have denuded and scarred a serious proportion of our

continent's usable land surface, removing its cover, eroding its topsoil, losing its retentive wetland sinks, and lifting saline water to the surface in irrigated areas. We have also silted our rivers and dirtied them with mud and salt. These results now pose threats to the very production that led to them. As a corollary we have lost plant and animal species at a rate many hundreds of times pre-European settlement rates, and we have introduced pests and predators. In our need to use the land for pastoral, agricultural, and mining purposes we were often ignorant of the steady damage we were causing, and the unsustainability of many of our practices. Over past decades many of these practices have continued, not through ignorance, but with full knowledge of the long-term consequences. Sustainable husbandry has generally lost out to the difficulties, expenses, and politics of change. While we have set aside protected areas (though rarely in the best farming or pastoral country) we now realise that our unique biodiversity will not be protected by reserves and parks alone; the areas where we live and farm are also important. Global warming, now certain rather than possible, may also adversely affect isolated communities in separated parks and reserves if it shifts latitudinal temperatures.

With all this accumulated experience from the land, are we able to do better with the GBR?

TIME SCALES

The GBR coral reef province we see today is only 10,000 years old. What time scale for the "survival" in our heading should be considered? In the early part of the rising sea northeastern Australia's aboriginal inhabitants would have experienced remarkable change in the GBR region, from a coastal plain with occasional mountains, over which they would have lived and hunted, to today's shallow reef-filled sea with many islands. To consider the "survival" of the GBR 10,000 years in the future would be highly speculative, though in the reasonably short term we do expect rising temperature, rising sea level, and increasing storm strength through global warming. For longer time scales (millions of years) possible geological changes make the exercise still less valid. Only in terms of a generation or two can we expect prediction to have some value, and for our purposes thinking about tens and hundreds of years rather than thousands or longer is probably the best we can do. We therefore attempt to address those human impacts that are now affecting or are likely to affect the GBR this shorter time scale (decades to a few human generations), and particularly to consider those impacts that could be amenable to management.

WHO CONTROLS THE GBR?

Over the past few decades we have seen severe breakdown of coral reefs in most tropical areas. Of the world's coral reefs, 10% are now estimated as severely damaged or destroyed, and 58% potentially threatened (Bryant et al., 1998). The area north of us has the world's richest reefs (of which the GBR is an outlier), but Indonesian and the Philippine reefs are already considered to be 60 to 70% degraded, with only 5% still in excellent condition (Yap & Gomez, 1985).

Unlike many of these coral reef areas, the GBR should be in good condition, for Australia has considerable controls over its use. In particular:

- As the GBR is a World Heritage Area the Federal Government has right of veto over any action that could "have a significant impact" on its values, under the Environment Protection and Biodiversity Conservation Act 1999.
- The Great Barrier Reef Marine Park Authority, with spatial limits slightly less than the GBR World Heritage Area, has an oversight act with strong controls and the creation of different use (or no use) zones, and its act also includes powers to act against that impact on its area from outside.
- Queensland has controls of fishing over the GBR areas where this is permitted.
- Areas designated as terrestrial or marine national parks are controlled under Queensland Government acts.
- The recent Queensland Coastal Protection and Management Act 1995 states the Minister "must prepare a State coastal management plan" and "must prepare regional coastal management plans as soon as practicable." Plans developed by local authorities must then be consistent with State and regional plans.

With this rather remarkably wide set of controls (and there are more) one might assume that the GBR and its islands, reefs, and coasts are well regulated and safe from non-sustainable human impact.

Nevertheless, effective protection demands that the regulatory authorities use their acts and regulations effectively, so that the values of the GBR are protected in the long term. In a number of recent cases this has not been the case. This raises many questions, none of which has simple answers.

Impacts that damage coral reefs and other reef habitats are now generally well known worldwide and can be avoided. In spite of such broad general knowledge, experience shows that there is often some need for focussed information gathering and research to assess the impact on a reef habitat from a specific development. We know little as yet about slow, long-term, chronic changes, synergies between various impacts, and more subtle effects.

THE IMPORTANCE OF THE GBR TO AUSTRALIANS

Australians want their GBR to have clear, clean waters, and colourful fish and corals; populations of seabirds, turtles, dolphins, and whales; and also spectacular scenery, with tropical vegetation, white beaches, coral cays, high rocky islands, and wild coasts and channels. The GBR is loved because it embodies this rich array of natural values, and does so on the grandest world scale. This was clear in the many submissions to the Royal Commission on Drilling for Petroleum in GBR Waters (1974). The public's view of the GBR did not just include its coral reefs, but also its land- and

seascapes, its coral cays and high-vegetated islands, and its coasts. The public wanted to enjoy it without oil rigs and tankers, or reef quarries with heavy machinery and silt.

One result of the huge public response to the possibility of oil drilling was that the Royal Commission recommended that the GBR should never be mined or drilled for oil. The Federal Government followed this recommendation with the Great Barrier Reef Marine Park Act of 1975, prohibiting all recovery of minerals.

A second result was the Federal and Queensland Governments' application to the World Heritage Commission for a declaration of the GBR as a World Heritage Site. Such sites are proclaimed if they have:

"Natural features consisting of physical and biological formations or groups of such formations, which are of outstanding universal value *from the aesthetic or scientific point of view*," or
 "Areas which constitute *the habitat of threatened species of animals or plants of outstanding universal value* from the point of view of science, conservation, or natural beauty." (Our italics)

The two governments, in their request for World Heritage listing, included the statements that the GBR "has the largest single collection of coral reefs in the world," "provides some of the most spectacular scenery on earth and is of exceptional natural beauty," and "provides major feeding grounds of the endangered species Dugong dugon and contains nesting grounds of world significance for the endangered green turtle (*Chelonia mydas*) and loggerhead turtle (*Caretta caretta*)."

For its technical review of Australia's application the World Heritage Commission contracted the IUCN. The IUCN recommendation for acceptance stated: "It seems clear that if only one coral reef site in the world were to be chosen for the World Heritage List, the Great Barrier Reef is the site to be chosen" (IUCN, 1981).

The GBR is said to be worth over \$1 billion annually to Queensland. About 25% of the visitors are from overseas, and over the past decade this has been the fastest growing segment. The Australian Tourist Bureau was aiming to increase overseas visitors to Australia from 2.8 million in 1993 to 8.4 million by 2004. Whether or not these figures are realised the pressure of tourism on the GBR is likely to increase greatly over the next few decades (perhaps in part because so many other coral reef destinations are being degraded) (Queensland Government, 1995; Queensland Tourist and Travel Corporation, 1998).

While the GBR is a considerable and growing money producer, the concerns publicly expressed at mining, oil drilling, and inappropriate development show that Australians value their GBR highly in ways beyond money. It is not just another coral reef, but the best world coral reef. It is probably also our greatest natural icon. Young students, demonstrating against the development on the Hinchinbrook Channel, chanted "this is sacred." In our primarily secular society they presumably meant that this spectacular area should be "treated with respect or reverence," or be "inviolable" in a non-religious sense (*Oxford English Dictionary*). Australians generally might find this reasonable.

For Australian and overseas visitors "survival" of the GBR means the retention of its wide set of values—the ecological and aesthetic sustainability of these unique

land and seascapes. With the best example of a coral reef system in the world, and one so precious to the Australian people, we can do no less than ensure that all usage must be sustainable.

What would this sustainability mean? Presumably uses should be restricted to those that would allow:

- Its ecological systems to remain intact
- Its rich underwater reef experience of corals and fish to remain
- Its endangered species (particularly dugong, turtles, cetaceans, and many birds) to be protected
- Its land and seascape beauty not to be defaced

This list begs many questions for an area as large as the GBR and one that is managed for multiple uses. To satisfy the above points perhaps one of the most serious problems that needs more understanding by the public, and those using the land, is the impact of terrestrial uses (including inland pastoral/agricultural areas and coastal wetland clearing).

Spatial demarcations for different uses (zoning) of both the seascape and the landscape need also to be carefully and conservatively chosen, and involve consideration of both biological/geological knowledge and landscape aesthetics. It is of interest that the United States plans to set aside as no-take reserves 20% of all coral reefs in waters under its jurisdiction by 2010 because it is concerned about coral reef deterioration (Secretary of the Interior Bruce Babbitt and NOAA Administrator D. James Baker, joint press release, March 2000).

For an area of the quality of our GBR,

- Planning and control must be meticulous, and "mistakes" should not be made for political convenience.
- Highly protected areas (no-take areas) must be carefully chosen and be much larger than in a less valuable area.
- Monitoring needs to be careful and constant.

WHAT IS ACTUALLY HAPPENING, AND WHAT MIGHT DAMAGE THE GBR?

The major causes of coral reef breakdown or ecosystem changes through human impact in reef areas are now well documented (Birkeland, 1997). They include: overfishing (particularly on grazing fishes); destructive fishing practices (such as explosives, cyanide); engineering works (dredging, airport construction, and building on reefs and causeways); heavy unregulated tourism; nutrient and silt input (sewage, land clearing, hinterland forestry and farming, fertilisers, road construction, housing); and industrial pollution. For the GBR we should add structures, development works, tree (including mangrove) removal, and engineering that damages or defaces the land/seascape beauty. We must also add damage from coral bleaching and from increased cyclonic storm damage through high temperatures (with global warming

implicated) and coral diseases (possibly through stressing from other impacts). While most of these threats do not affect the GBR, some threats are now doing so.

Lowe (1997) has stated of the GBR, "There are worrying signs of deterioration, mostly associated with activities on the adjoining land." To this we now need to add that there are also worrying signs of deterioration from activities in the sea and from global warming.

Activities and decisions in the past decade show disturbing patterns in the way the GBR is being managed and there are serious problems which may affect its long-term health. Many basic values of the GBR have been chipped away, as we shall explain. This may be hotly contested by many involved in the tourist industry, by those involved in building development and its subsidiary industries, by local councils, and by state and federal politicians. But pressure to get the most out of the reef through tourism and fishing is huge, driven by the pursuit of profit and jobs, and consequently supported by political will. There is clear evidence that this pressure has resulted in decisions that support development, tourism, and fishing at the expense of the long-term protection of the reef.

Pressure on GBR usage will increase from developments on land, from fishing (including better technology), and from tourism. As Australians with an important part of world heritage under our control it can be argued that we have a responsibility to make it as accessible as is reasonable to world tourism as well as for Australians; but that in a developing tourist infrastructure we also have the responsibility not to damage its values.

While the GBR is of huge size (which many incorrectly consider makes it safe) there is at present insufficient care taken

- In the use of its living resources
- In planning its coastal zones
- In environmental impact assessment of developments
- In control of the final development process itself
- In hinterland and coastal land use that affects the GBR

INNER REEFS

Land clearing in the river catchments draining into the GBR has been rapid and is still continuing, and the landscape has been profoundly altered by human activities (see Johnson et al., Chapter 3, this book). Land clearing is accelerating; in 1999 over 400,000 ha of land were cleared in Queensland, which accounts for 90% of Australia's total land clearing.

Silt loads, with associated nutrients, may have increased four or more times due to pastoral/agricultural land-use practice in the drainage basins, added to by fertiliser from intensive agriculture (Baldwin, 1990; Wasson, 1997 for a reference list; see Johnson et al., Chapter 3, this book). All this soil ends up as mud in the estuaries and the coastal zone. Satellite photography has shown huge, muddy plumes reaching the mid-reefs.

Bays sheltered from the prevailing trade winds, such as Trinity Bay in Cairns, are a good indicator of human impacts on sediment inputs because their sediment rate

can be measured. Typically this sedimentation rate has apparently increased by a factor of 10 to 15 since European colonisation (Wolanski & Duke, 2000; see also Duke & Wolanski, Chapter 6, this book). These bays do not trap all the sediment and hence do not protect the inshore coral reefs from major impacts from human-induced soil erosion. Indeed, extremely muddy waters with concentrations of suspended solids peaking at 1000 ppm (this water is so turbid that divers could not see their hands against their masks) have been observed to be exported north of Trinity Bay, thereby reaching inshore reefs. In addition, even mid-shelf reefs are threatened by mud which may also spread offshore as a near-bottom nepheloid layer (Wolanski & Spagnol, 2000). The potential impact on the GBR by these muddy intrusions needs much more attention than it has been given.

As described by Johnson et al. (1997) and Johnson et al. (Chapter 3, this book), *Melaleuca* wetlands once covered large areas of the coastal floodplains, areas that are now used for intensive agriculture. These used to provide extensive buffer strips which have now been cleared, primarily for agriculture. In the Burdekin catchment 60% of the *Melaleuca* wetlands are gone, and 50% of the rainforest, and this is considered typical of other catchments. Approvals for clearing and agriculture in low-lying and flood-prone areas still continue, increasing both flooding and soil loss. Supporting Lowe's statement quoted above is the conclusion by Zann (1995) that poor catchment use and declining water quality, with increased levels of nutrients and sediments, are the most serious issues in the coastal environment, with threats to inshore corals on the GBR. This conclusion is also supported by McCook et al. (Chapter 8, this book) and by Fabricius and De'ath (Chapter 9, this book).

Mangroves along the GBR coast are efficient at trapping sediments (Furukawa et al., 1997). Through their detritus, mangroves also enhance flocculation and settling of fine sediments in coastal waters (Ayukai & Wolanski, 1997). As an example a mangrove area of 8.22 km² was reclaimed 40 years ago by the construction of a levee in East Trinity Bay, Cairns. The land was first used for cane farming and is now abandoned, and has compacted and shrunk and turned acid. There is a proposal for a real estate development on this land developers see as a wasteland. Yet this area, if left as mangrove, would have trapped a half million tons of mud in the last 40 years since it was destroyed—instead this half million tons of mud is now polluting the GBR (Wolanski & Duke, 2000). Mangroves thus help protect inshore reefs and seagrass beds from turbidity and siltation. Mangroves are protected by law, but they are still constantly being sacrificed, by bits and pieces, for a number of activities, including aquaculture, access roads and discharge canals, marinas, airports, harbours, real estate developments, golf courses, and roads (see Duke & Wolanski, Chapter 6, this book). Along heavily fished mangrove creeks and some harbours (e.g., parts of Cairns Harbour), bank erosion from boat waves is common and results in trees falling into the water. One strategy is to plant mangroves over emerging mud banks to stabilise the banks and trap the sediment.

Along the Cairns esplanade the seabed has come up by about 1 to 1.5 m in the last 100 years as a result of increased erosion from deforestation of the hinterland (Wolanski & Duke, 2000). It is now above mean sea level and suitable for mangroves. Indeed, mangrove seedlings naturally colonise the area. However, the mangroves are

regularly uprooted and destroyed by the Cairns City Council in order to preserve the sea view. The result is that the mud is not stabilised, and each time the wind blows, mud is exported in quantity and threatens seagrass beds and inshore reefs.

In theory neither pastoralists nor sugar farmers want to lose topsoil. In theory intensive farmers like cane growers wish their fertilizers to stay on their crops and not wash down rivers to the GBR. In practice, however, land use is only loosely controlled by local councils and control is minimal. Simple measures to help control soil erosion are available, such as the preservation of a green belt along the banks of rivers and creeks. In the GBR hinterland these measures are the exception rather than the rule. As a result of intense tropical rainfall, soil erosion is severe and huge loads of mud and fertilisers run into inner reef waters. These land management practices are neither sustainable in the long term for the pastoral/agricultural industries themselves nor for the GBR.

There is both anecdotal and sequential photographic evidence to suggest that the inner reefs have suffered loss of living coral cover. Because of the natural variability of coral reefs through time, with damage or breakdown occurring sporadically through such impacts as cyclones or crown-of-thorns starfish infestation, followed by regrowth, it is difficult to determine without doubt that this is so. Based on Fabricius and De'ath (Chapter 9, this book) and McCook et al. (Chapter 8, this book), this hypothesis appears highly likely. These inner reefs are different from those of the mid- and outer reefs. Yet all these habitats are linked by migrations, as shown by Cappo and Kelley (Chapter 11, this book). Any attempt to keep the ecological integrity of the GBR demands that the inner reefs are also protected. But while they are the reefs most under threat of damage, they are less protected than mid- and outer reefs, because the latter "are visible and 'glamorous'" (Zann & Brodie, 1997).

Remedial landcare measures are well known. When they are judged uneconomical and not implemented, the GBR is simply being treated as an expendable commodity.

While these inner reefs of all the coral habitats are likely to be the ones under most threat because of hinterland impacts, special areas used heavily for recreation (Cairns area, Whitsunday Islands) may also suffer damage. With permits for over 700 tourism operators and 1300 vessels in the Whitsundays, many aiming to anchor in the same sheltered bays, there is anecdotal evidence of severe loss of coral in some popular sites (e.g., Butterfly Bay). This has resulted in areas with laid moorings, and also areas where anchoring is prohibited. This needs to be done before, and not after, most of the damage has been done, as happened at Butterfly Bay.

ENDANGERED, THREATENED, VULNERABLE, OR RARE SPECIES OF MARINE MAMMALS AND TURTLES ("CHARISMATIC MEGAFUNA") (AFTER MARSH ET AL., 1997)

- Dugong numbers have dropped steadily (by over 50%) along the southern GBR where they have been monitored (1986 to 1994). There was also a catastrophic decline in the Hervey Bay area in 1992/1993 after the disappearance of 1000 km² of seagrass beds due to flooding of the Mary and Burrum Rivers and heavy silt runoff.

- Loggerhead turtles breeding in eastern Australia have declined by 50 to 80% since the 1970s.
- Monitoring in the green turtle stock in northern GBR waters suggests a loss of adults, presumably from unsustainable hunting outside Australian waters.
- Hawksbill census data from Milman Island indicate a declining population.
- The East Australian humpback whale dropped to a fraction of its estimated population size through whaling, but is now increasing at a rapid annual rate.
- We do not have enough information on the dolphins and smaller whales to come to any conclusions as to their status.

The majority of these species, so fascinating to us and now so sought by tourists on our GBR, are declining in Southeast Asian seas north of Australia. The general declines above suggest we are not doing much better, in spite of the huge size of the GBR and our low population.

Professor Helene Marsh, jointly with six respected scientific observers, makes the following stinging indictment: the GBR "will not be an effective global refuge for the charismatic megafauna of the tropical Indo-West Pacific under the present management regime" (Marsh et al., 1997). So much for the efficacy of one of the great protected tropical coastal areas left on Earth!

ACID SULPHATE SOILS

Acid sulphate soils are an abiding problem in the coastal zone, where soils that contain iron sulphide minerals (usually iron pyrite) are widespread. While undisturbed and in oxygen-free conditions they are stable, if dug and exposed they oxidise to sulphuric acid, which can result in such acid water that it can do major biological damage and cause fish kills (White, 1998). The sulphuric acid can also transport heavy metals, which then get deposited in areas such as mangrove swamps and seagrass beds, and can enter the food chain. Long-lived animals such as dugongs, or top end predators such as sharks, are then likely to accumulate quantities of heavy metals.

While acid soils can be successfully treated, this does require thorough assessment of acid soils prior to development and the cost of the process must be included in the development costs. In some cases this might make the development uneconomic, indicating an area is unsuitable for the activity.

TRAWLING AND LINE FISHING

Gribble (Chapter 12, this book) describes the impacts of commercial fishing on the biomass and biodiversity in the far-north GBR. Only a minor negative impact on prawn populations by trawling is predicted. However, commercial fishing is shown to have a dramatic negative effect on sea turtles and small fish omnivores (comprising most of the discarded bycatch), and possibly a positive effect on species that feed on the discards such as seabirds, groupers, and sharks/rays. As Cappo and

Kelley (Chapter 11, this book) also show, trawling directly modifies the benthos, with unknown long-term ecological impacts on the entire benthic ecosystem. Trawling essentially modifies the habitat so that in the long term, entire species may vanish, as has happened in areas of the North Sea (Bergman & Lindeboom, 1999; Lindeboom, 2000).

As Cappel and Kelley (Chapter 11, this book) demonstrate, it now emerges that trawling may also lower the population of reef fish and mangrove crabs as they migrate across the trawling grounds.

AQUACULTURE

Coastal aquaculture (farming prawns and Barramundi) is developing rapidly. While some careful work on impacts has been done, in most cases the long-term impacts of these farms are still largely unknown. It is common practice to extract clean seawater from one mangrove creek, and to discharge wastewater into another mangrove creek. Wastewater treatment is often minimal. Development applications are in for new farms, and newspaper reports of statements by development companies suggest many more. Careful assessments of the impact of the removal of intertidal salt flats and mangroves and the impact of nutrient input into shallow coastal waters from prawn and fish farms are only now becoming available (Wolanski et al., 2000). These studies suggest bank erosion occurs in mangrove creeks receiving effluent water, and this is made evident by trees falling in the creek. Also, siltation occurs in many mangrove creeks used to draw clean salt water for the farms. These studies also suggest that creeks may be poorly flushed and eutrophication results from the input from aquaculture waste. The possibility also exists that wild prawn stocks may be affected by the discharge of viruses from shrimp ponds (USEPA, 1998). This may also affect wild crabs and birds. Remedial measures are simple and readily available, namely, to treat the wastewater. While costly, the GBR Marine Park deserves no less.

CLIMATE CHANGE

The GBR is threatened by global warming, possibly within only 20 to 50 years (Hoegh-Guldberg, 1999; Lough, Chapter 17, this book). The effects are complex and non-linear and are difficult to quantify at this stage. Nevertheless, they are serious enough that a large research effort has been initiated at the Australian Institute of Marine Science to understand how reefs devastated by bleaching from raised water temperatures may repopulate by coral larvae from heat-tolerant species from distant locations. This could occur naturally by ocean currents or through active intervention by man. Biodiversity would certainly be impacted by major die-off of reefs.

COASTAL PLANNING

Coastal planning failures have been common along the GBR coast.

HAMILTON ISLAND

One of the developments considered poor planning by conservationists is the placing of high-rise buildings and an airport for large jets on Hamilton Island in the Whitsundays. The Whitsunday Islands have a large and developing charter boat system for visitors on crewed and self-navigated yachts ("bare boats"). This is lucrative and expanding, and attracts visitors from all over the globe. They experience the beautiful set of islands, can walk in rainforest, dive on coral reefs, and enjoy beaches on uninhabited islands. Most of the island resorts are low, and some use vegetation to reduce visual impact. However, tourists are now confronted by massive high rise buildings of up to 20 stories that dominate the western side of the land and seascape. A large harbour has been dug which includes a marina for boats, and fill has been taken from a mountain to create an airport for large jets. Some yacht charter companies now offer to meet their clients at Hamilton, making a hub of the tourist industry in the middle of the "park" experience, not on the adjacent mainland. Park planners in America and elsewhere have long decided that developments of hotels, shops, and businesses are better on the park periphery, and not centrally in a national park area. Yosemite National Park in the U.S., with hotels and shops, and thousands of visitors and staff living in its superb valley, is used as the model of what not to do. The development of Hamilton Island cannot be brushed off merely as an older planning approval that would not happen today. Last year a further 16 blocks were put up for sale on Hamilton Island, with statements reported of \$30 million of land for sale over the next decade (*Courier Mail*, Property Section, 30 June, 1999).

A HOUSE LEASE IN LIZARD ISLAND NATIONAL PARK

Lizard Island is a national park with one thoughtfully planned resort. A research station, studying reef questions, is single storied and shelters behind Casuarina trees and other coastal vegetation; a camping area on the island is well used. On this big island these structures at present make modest environmental impacts, visual or otherwise.

The original lease of land for the resort lay behind a large northern beach. It was later extended to stretch behind a row of small beaches to the west.

The original owners of this national park lease later sold the resort, but were allowed to keep a subdivided portion of the lease on a prominent ridge above the small beaches. A house was planned, with a caretaker's cottage, on the site. In the design outline (sent to the author by the leaseholders), no attempt was made to keep the park experience paramount with a low, non-obtrusive building. On the contrary, the architect apparently designed it to be prominent (as his documentation states). One might assume that the public trust would be properly served by not permitting private dwellings in a national park. The Queensland State Government did not intervene. Cook Shire Council could have disallowed the development application ... but it approved it. There is a complex stone bora ground close to the ridge, which has apparently strong aboriginal religious significance. The aboriginal group concerned is fighting the application through the courts, and decisions are still pending.