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Fin(d)ing Nemo? Partnerships in Compliance and Enforcement on the Great Barrier Reef

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On the Great Barrier Reef, size matters. The planet's largest World Heritage Area stretches over 2,000km along the Queensland coastline, covering an area of some 350,000km².

The many and varied human interactions with the GBR's complex ecosystems are governed by a multi-jurisdictional legislative framework comprising international conventions, Commonwealth and Queensland law.

A variety of domestic legislative instruments are utilised such as statutes, regulations, zoning plans and plans of management. The regulatory mix includes criminal offences punishable by fines of up to A\$1.1million, a permitting regime that includes liability instruments, performance bonds and appeal rights, and economic instruments such as the Environmental Management Charge administered by the Great Barrier Reef Marine Park Authority.

In 1999, low levels of compliance with fisheries and marine park legislation and the high cost of enforcement and surveillance were identified as key issues for management of the GBR.

There have since been significant increases in:

- *maximum penalties (increased ten-fold);*
- *the proportion of the GBR protected in 'no-take' zones; and*
- *enforcement resourcing and results.*

Higher penalties are a necessary but not sufficient condition to increase compliance. Management agencies must also educate, regulate smarter, and enhance enforcement.

Inter-agency co-operation across jurisdictions is essential to effective management of the GBR. So is harnessing support from industry and community stakeholders who may act as surrogate regulators, helping to encourage a culture of compliance and protection of the reef.

The Great Barrier Reef (GBR)

The GBR's numerous interconnected bioregions stretch across coastal estuaries, mangroves and seagrass beds, fringing coastal reefs, islands and lagoons, outer reefs and the open ocean. It is a region of immense natural value and includes biological diversity at ecosystem, community, species and genetic levels.

In comparison to most other internationally significant coral reef systems, the GBR has benefited from relatively low population density along most of its coastline, although in recent times the increasing impact of economic activity upon the GBR has become evident. Indigenous peoples have sustainably utilised the GBR for thousands of years and the reef remains integral to the tradition and ongoing cultures of coastal and island communities.

In addition to its ecological, cultural and social values, the GBR is also a vital economic asset, primarily as one of Australia's premier tourist destinations. The Productivity Commission (2003) valued the economic worth of tourism in the GBR catchment in 1999-2000 at \$A4.269 billion, of which the GBRMPA estimates that approximately \$A1.4 billion is directly attributable to the marine tourism industry: GBRMPA *Annual Report 2002-2003*. Commercial and recreational fishers also directly utilise the GBR and in recent years an aquaculture industry has become established along the North Queensland coast. Agricultural industries use and impact upon GBR catchments. A significant volume of shipping traffic transits the GBR, many carrying exports from Queensland ports.

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Economic value of select GBR industries, extracted from Productivity Commission (2003), Table 4.4 “Economic importance of industries in the GBR catchment” 1999-2000 (notes omitted)

Industry	Gross value of production (\$A millions)	Persons employed (Total no.)
Aquaculture	38	378
Commercial fishing	119	641
Seafood processing	33	180
Recreational fishing	240	na
Tourism	4,269	47,660

The GBR’s unique natural values deserve protection in their own right. They are also fundamental to maintaining the GBR’s rich cultural and social values and ensuring both the ecological and economic sustainability of its dependent industries. Essential to ensuring protection of the GBR’s natural, social and economic values are a comprehensive legislative framework and compliance with it. Partnerships are a recurring theme in both the GBR’s legislative and compliance regimes.

Legislative Framework

The many and varied human interactions with the GBR’s complex ecosystems are governed by a multi-jurisdictional legislative framework comprising international, Commonwealth and Queensland law. Discussion of some key aspects of the most relevant international and Commonwealth law follows. For further detail, including relevant Queensland legislation, see Great Barrier Reef Marine Park Authority (2001) and McGrath (2003).

International Environmental Law

Many international agreements (not to mention norms of customary international law) impose international legal obligations upon Australia, including in relation to the Great Barrier Reef. Most notable amongst the older of these conventions are the Convention for the Protection of the World Cultural and Natural Heritage, 1972 (the World Heritage Convention), the International Convention for the Prevention of Pollution from Ships, 1973 (the MARPOL Convention) and the United Nations Convention on the Law of the Sea, 1982 (UNCLOS). International co-operation is an important feature of all three conventions.

World Heritage Convention (WHC)

Following nomination by Australia, the Great Barrier Reef was inscribed on the World Heritage List in 1981. The Great Barrier Reef World Heritage Area (GBRWHA) covers the area (nearly 350,000km²) described in Schedule 1 of the GBRMP Act, including islands and internal waters of Queensland. The northwest corner of the planet’s largest World Heritage Area is the point that, at low water, is the northernmost extremity of Cape York Peninsula. Its western boundary then runs south over 2000km along the coastline of Queensland at low water to the parallel of Latitude 24° 30’.

Under the WHC, Article 4, each State Party;

“... recognizes that the duty of ensuring the identification, protection, conservation, presentation and transmission to future generations of the cultural and natural heritage [of outstanding universal value] situated on its territory, belongs primarily to that State. It will do all it can to this end, to the utmost of its own resources and, where appropriate, with any international assistance and co-operation, in particular, financial, artistic, scientific and technical, which it may be able to obtain.”

Whilst fully respecting State sovereignty, the States Parties to the WHC:

- recognize that cultural and natural heritage constitutes a world heritage for whose protection it is the duty of the international community as a whole to co-operate; and
- undertake, in accordance with the provisions of the Convention, to give their help in the identification, protection, conservation and presentation of the cultural and natural heritage [on the World Heritage List] if the States on whose territory it is situated so request: Article 6.

Further references to international assistance recur throughout the WHC, emphasising the centrality of international co-operation and partnerships to protect natural and cultural heritage.

MARPOL and UNCLOS

In 1990, following Australia's submission, the International Maritime Organization (IMO) designated the GBR as the world's first Particularly Sensitive Sea Area (PSSA) (Ottesen et al 1994; Lawrence et al 2002: 194; and Nelson 2003: 23). A PSSA is an area that needs special protection through action by the IMO because of its significance for recognized ecological, socio-economic, or scientific reasons and which may be vulnerable to damage by international shipping activities (IMO 2001).

When an area is approved as a PSSA, specific measures (termed Associated Protective Measures) can be used to control maritime activities in the area. Such measures may include routing measures, ship reporting systems, strict application of MARPOL discharge and equipment requirements for ships and installation of Vessel Traffic Services (VTS) (IMO 2001).

Provisions of UNCLOS are also relevant to PSSAs. As Nelson (2003: 21) notes, UNCLOS;

“... creates an overall structure for the protection and preservation of the marine environment and a general obligation for States to implement and elaborate upon this structure through both global conventions addressing particular forms of pollution and regional agreements tailored to the requirements of discrete sea areas.”

MARPOL and UNCLOS are founded on international co-operation, in particular through the auspices of the IMO. Requirements of MARPOL and UNCLOS find reflection in various Commonwealth statutes, particularly the suite of *Protection of the Sea* legislation, including the *Protection of the Sea (Prevention of Pollution for Ships) Act 1983*. The influence of these conventions on the GBRMP Act is particularly apparent in provisions regulating the discharge of waste (s.38J) and compulsory pilotage (Part VIIA), discussed below.

Commonwealth legislation

Environment Protection and Biodiversity Conservation Act 1999 (the EPBC Act)

The EPBC Act is Australia's principal legislation governing world heritage, Ramsar wetlands, nationally listed threatened species, Commonwealth areas (including Commonwealth marine areas) and other 'matters of national environmental significance'. It relies heavily on 'co-operative federalism' in that matters not considered of national environmental significance are left to State legislation. Even actions having a significant impact on matters of national environmental significance may be assessed and, potentially, approved under State processes following bilateral agreements between Commonwealth and State governments. The Act reduces some of the barriers to civil enforcement that would otherwise restrict public interest litigation seeking compliance with its provisions.

The EPBC Act applies directly to actions likely to have a significantly impact upon matters of national environmental significance, eg. the world heritage values of the GBRWHA. Where such actions are taken inside the Great Barrier Reef Marine Park (the GBRMP) and authorized by an instrument made under the GBRMP Act, the EPBC Act, s.43, largely (though not entirely) defers to the GBRMP Act.

Great Barrier Reef Marine Park Act 1975 (the GBRMP Act)

The GBRMP Act established both the GBRMP and the Great Barrier Reef Marine Park Authority (the GBRMPA), which is responsible for the management of the GBRMP. Pre-dating the GBR's world heritage listing, the GBRMP Act contains only one reference to world heritage (s.39Z), but expressly provides in s.65(2) that the Act has effect subject to the obligations of Australia under international law, including international agreements, eg. the WHC.

The GBRMP Act applies command and control prohibitions to criminalize certain activities inappropriate on the GBR, including offences punishable by fines of up to A\$1.1million. Beyond that, the Act enables the making a variety of legislative instruments (eg. zoning plans, regulations and plans of management), which allows differential regulation of activity types across areas of the GBRMP. The regulatory mix includes offences, an environmental management charge, and a permitting regime that includes liability instruments, performance bonds, a public register of permissions and appeal rights for proponents and third parties.

Great Barrier Reef Marine Park Authority (GBRMPA)

The GBRMP Act establishes the GBRMPA is a body corporate directed by four members: a full-time Chairperson and three part-time members. The Act requires that one of the part-time members be appointed to represent the interests of Aboriginal communities adjacent to the Marine Park, and one be appointed on the nomination of the Queensland Government.

The GBRMP Act also establishes the Great Barrier Reef Consultative Committee, to which the GBRMPA provides secretarial support. In addition, the GBRMPA supports the activities of numerous Local Marine Advisory Committees (LMACs) along the North Queensland coast.

Most staff of the GBRMPA are Commonwealth public servants who co-operate closely with other Commonwealth and Queensland government agencies, particularly in compliance and enforcement. The Act acknowledges this (s.42) and also makes specific provision for other partnerships, enabling the GBRMPA (whether acting by itself or in co-operation with other institutions and persons) to provide assistance to other institutions or persons in matters relating to environmental management (s.7A).

Regulation of Industry Activities in the Great Barrier Reef Marine Park (the GBRMP)

Operations for the recovery of minerals in the GBRMP have been prohibited since the GBRMP Act commenced. Activities such as negligent shipping, the discharge of waste, and illegal fishing now carry the strictest penalties with criminal offences punishable by fines of up to \$A220,000 for natural persons or \$A1,100,000 for corporations.

Following the IMO's designation of the GBR as the world's first PSSA, compulsory pilotage provisions were inserted into the GBRMP Act in 1991. Regulated ships can only be navigated in the compulsory pilotage area by an independent pilot, licensed or registered under Australian law, who is on board the vessel and has conduct of it. Non-compliance renders the master, owner and operator of the ship each guilty of a strict liability offence punishable by a maximum fine of \$A55,000 for an individual ship master and \$A275,000 for corporate owners and operators: GBRMP Act, ss.3 and 59B.

Negligent operation of a vessel in the GBRMP that results in, or is likely to result in, damage to the GBRMP, renders the operator liable to a maximum penalty of \$A220,000 for an individual, or \$A1.1million for a corporation: GBRMP Act, s.38MC(1). Even without negligence, a vessel operation that results in, or is likely to result in, damage to the GBRMP, renders the operator and the owner of the vessel each guilty of a strict liability offence punishable by a maximum fine of \$A55,000 for an individual ship master and \$A275,000 for corporate owners and operators: ss.38MC(2) and 38MC(3).

The unauthorised discharge of waste in the GBRMP is an offence punishable by a maximum penalty of \$A220,000 for an individual, or \$A1.1million for a corporation: GBRMP Act, s.38J. The GBRMPA may grant permission, subject to conditions, for certain discharges (eg. sewage from land-based outfall) under the *Great Barrier Reef Marine Park Regulations 1983*. Discharges are then subject to the Environmental Management Charge (EMC) administered by and payable to the GBRMPA. In the context of discharges, EMC is levied at a volumetric rate, calculated using formulae weighted to account for the level of pre-discharge treatment (eg. secondary or tertiary). This application of the polluter pays principle attempts to provide economic incentives for land-based operators to go beyond mere compliance with their permit conditions to improve treatment levels and reduce the volume they discharge into the GBRMP. Arguably, the rate of EMC now requires review to provide sufficient incentive for investment in upgrading waste treatment facilities, particularly given changes in community standards as to what constitutes reasonable discharge into the waters of the GBRMP.

Discharges from aquaculture operations up to 5km inland of the GBRMP coast regulated by permitting requirements imposed by the specific *Great Barrier Reef Marine Park (Aquaculture) Regulations 2000*, in conjunction with requirements of the EPBC Act.

Tourism operations using the GBRMP are also regulated through a permitting regime. Permits are granted subject to conditions of under the *Great Barrier Reef Marine Park Regulations 1983*, in accordance with requirements imposed by area-specific plans of management. Permit conditions may require an operator to enter a deed of agreement with the GBRMPA, maintain adequate insurance and post a bank guarantee or other form of performance bond. Lal and Brown (1996) and Lawrence et al (2002) review the use of such instruments in the GBRMP. Tourism operations also pay the Environmental Management Charge based on their quarterly visitor numbers, thereby contributing to the costs of managing the GBRMP.

Licensing of fishers and other fisheries management issues are largely managed by Queensland agencies under legislation such as the *Fisheries Act 1994 (Qld)* and plans such as the *Fisheries (East Coast Trawl) Management Plan 1999 (Qld)*. The main requirement of commercial and recreational fishers under the GBRMP Act is compliance with zoning plan requirements, which detail the types of fishing allowed in different zones of the GBRMP. Non-compliance is an offence punishable by fines of up to a maximum penalty of \$A220,000 for an individual, or \$A1.1million for a corporation: GBRMP Act, ss.38CA, 38CB, 38CC.

The *Great Barrier Reef Marine Park Regulations 1983* are also relevant. For example, under r.41 a tender commercial fishing vessel in a non-fishing area of the Marine Park, even if not caught fishing, renders the fisher, master of the primary vessel, and license holder all guilty of a strict liability offence. Such provisions recognise the difficulty of catching such a vessel “red-handed” in the act of fishing and send liability “up the chain of command” to include those who would profit from such illegal activity.

Following detailed scientific and socio-economic analysis and extensive public consultation through the GBRMPA’s Representative Areas Program,, the *Great Barrier Reef Marine Park Zoning Plan 2003* (effective 1 July 2004) substantially expands the area of no-take “green zones” to over 33% of the GBRMP. Ensuring compliance with the new zoning plan is now a key priority for the GBRMPA.

Compliance and Enforcement

In the GBRMP the majority of users adhere to the zoning plan and regulatory requirements because they think it is the “right” thing to and they can see benefit (eg. protection of fish stocks). A long-standing and extensive education program has helped develop the knowledge and understanding that support such an approach. As part of the Representative Areas Program, the GBRMPA engaged in a major campaign of public education and consultation prior to the rezoning.

For many people, education is enough. Unfortunately, there is also always a need for enforcement to deal those who choose not to comply.

The main enforcement issues in the GBRMP have traditionally concerned zoning plan compliance, particularly illegal fishing in ‘green’ (no-take) zones. Honchin (1995) and Lawrence et al (2002) document the history of enforcement in the GBRMP to 2000. As Lawrence et al (2002: 188) note:

“The sheer size of the marine park, the remoteness of most locations and the lack of high quality tools, such as charts and markers, has placed enforcement in a unique and challenging position.”

In 1999, low levels of compliance with fisheries and marine park legislation and the high cost of enforcement and surveillance were identified as key issues for management of the GBR (GBRMPA 2002). In response, between 1999 and 2002 the Australian Government allocated over \$A3million to enhance the GBRMP enforcement program. Initially this was seen as primarily the key to more vessel patrols. However, its most significant outcome has been a new way of doing business, involving risk assessment, intelligence analysis, strategic planning and new alliances and relationships with other agencies. The result has been a significant increase in the detection and prosecution of offenders.

Prior to 1999, patrol boats were seen as the principal surveillance platform in the GBRMP. This was largely historical and related to the fact that the GBRMPA was able to access vessels working in the GBRMP for other purposes. In the last 3 years, aircraft have gone from purely forward air support for boats to the primary surveillance tool.

The success of the aerial surveillance program came from a new approach to working with Coastwatch, the Australian Government organization supplying offshore aerial surveillance to relevant Government agencies. Recognising the potential true value of Coastwatch in the GBRMP, the GBRMPA invested time in preparing risk assessments, strategic plans and detailed tactical guidance based on analysis of a wide range of information.

The major enforcement problem in the GBRMP in recent years has been commercial line fishing of coral reef fish from green zones. In 1999-00 14 such boats were detected operating illegally. In 2000-01 17 were detected. In 2001-02 there were a similar number of air and sea patrols, but they were by now much more carefully targeted. The result was 59 boats detected. Information from within the industry confirmed that, while there had been some increase in illegal activity during this time, the rapid increase in apprehensions was primarily a result of better enforcement operations.

Co-operative operations have proven fruitful. As well as Coastwatch, the GBRMPA work closely with the Queensland Parks and Wildlife Service, the Queensland Boating and Fisheries Patrol, the Queensland Police, the Australian Federal Police, the Australian Customs Service and several other agencies. While the driving force for such relationships was once purely financial or based on organizational responsibility, co-operative activities are increasingly run on a basis of mutual benefit.

The GBRMPA continues to expand its intelligence collection and analysis capabilities. Satellite-based vessel monitoring system (VMS) data supplied by the Queensland Fisheries Service is one example. A wide variety and air and sea platforms, including use of chartered unmarked boats has had added the vital ingredient of unpredictability in the GBRMP enforcement program. “I can’t get caught” has become “I might get caught” and, in some cases, “I probably will get caught”.

Catching offenders in the act is good, but it must be backed up by effective investigation and prosecution procedures. The Australian Government has a policy that all federal agencies, and those agencies working for them, must meet the highest standards of investigation and enforcement of their legislation. This has reinforced the GBRMPA training and case management initiatives in recent years. The GBRMPA's approach to dealing with new areas of illegal activity is to work with all parties so that people in the field such as aircraft crews understand the evidence collection, recording and management standards that will be required by Commonwealth prosecutors in court. The GBRMPA has not lost a prosecution for a major fisheries offence committed since 2000.

Ultimately the key to enforcement is deterrence, which can be summed up quite simply as "what is the chance of being caught and what will happen if I do get caught?" Calculating offenders will quickly weigh this up against the incentive to offend, often in dollars.

In July 2001 the Australian Parliament increased penalties ten fold for fishing, shipping and pollution offences against the GBRMP Act. This was backed up by a concerted effort by the GBRMPA to assist the Director of Public Prosecutions to provide magistrates with clear and comprehensive penalty submissions. These clearly explain issues such as the environmental, economic and social cost of the offence, the scale of the problem, incentives of offenders and the need for deterrence.

Prior to 2002 the highest penalty handed down for fishing green zones was \$A3,000. Fines of \$A25,000 or more are now common.

Environmental crime is now a high priority issue in Australia. Thanks to education and media coverage the community, including its magistrates, are much more aware of the seriousness of this issue. Illegal fishing and dumping from boats are no longer seen as harmless acts committed by cheeky larrikins. They are now generally recognized as organized, lucrative crimes with serious environmental consequences.

The Rezoning of the GBRMP

The *Great Barrier Reef Marine Park Zoning Plan 2003* comes into effect on 1 July 2004. This will see the proportion of the Marine Park totally protected from fishing and other extractive use increase from 4.6% to over 33%. Rezoning the Marine Park involved substantial community consultation, education and participation. Compliance was recognised as a crucial issue by both stakeholders and the GBRMPA, and was included from the outset as a vital consideration in the rezoning planning process. Enhancement of enforcement resources has been complemented by judicious zone planning.

Although the total area enclosed in green zones will increase by more than 7-fold the actual number of green zones will remain similar to today. Some regions that have green zones for the first time will generate new surveillance needs. In other regions existing green zones are expanded and joined together in ways that will facilitate enforcement, for example fishing will no longer be permitted as close to many protected reefs as it is today. The increased dimensions of some protected areas are such that they are still well within the visual or radar scope of existing air and sea surveillance platforms. Increasing the total protected area through larger, rather than simply more numerous green zones not only helps compliance. It was a fundamental principle identified by the scientific panels to protect the integrity of ecosystems.

The rezoning will also address a long-standing compliance problem inherent in the definition of boundaries in the present zoning plans, which are generally about 15 years old. Typically, zone boundaries have been designated as extending 500 metres from the seaward edge of a reef, which includes bommie fields, reef slopes, moats and ramparts (which are generally underwater). These zonal boundaries are difficult to define on the water and create obvious enforcement difficulties when offences occur on the margins of protected areas. Part of the reason for zones being defined by reference to reefs is that the exact location of many reefs was not charted accurately at the time the zones were introduced. The new zoning plan will define all zone boundaries by latitude and longitude coordinates. This acknowledges that most commercial vessels and air and sea surveillance platforms are equipped with electronic navigation aids, particularly GPS. Boundaries of some zones in coastal areas popular with recreational users (who often lack electronic navigation aids) have, where possible, been aligned with reference to appropriate features such as visible headlands and river mouths.

The strong community participation in the design of new zones should also increase their acceptance and help compliance. Acceptance of zoning will also encourage the public to provide information about illegal activity, so long as they believe it will be followed up. This has become an increasingly valuable asset to the GBRMPA in recent years.

Conclusion

The General Assembly (2003), in its resolution 58/129, stressed, *inter alia*, “that partnerships should focus on the achievement of concrete results”. Nowhere is this more true than in the design and enforcement of legislation for protection of the GBR, where the very foundations of the coral reef itself are built upon relationships of symbiosis.

The multi-jurisdictional legislative framework protecting the GBR depends upon the effective operation of a regime comprising international, Commonwealth and Queensland law. Partnerships are enshrined in the legislative framework and essential in ensuring compliance.

Higher penalties are a necessary but not sufficient condition to increase compliance. Management agencies must also educate users, regulate smarter, and enhance enforcement. Adaptive management requires ongoing evaluation and updating of legislation to facilitate its effectiveness, with continual consideration of the consequences for compliance.

In many ways, legislation, compliance and enforcement have advanced considerably in the GBR, particularly since 2000. Without this, green zones could have been expanded in name only, as a ‘paper park’. However, the GBRMPA recognises there is no justification for complacency as to the future. As populations increase, market demand will increase fishing pressure on many marine species. Their relative abundance in marine protected areas, particularly no take zones, will be a tempting target. New markets will also emerge, creating demand for species or products that were previously ignored. Similarly, other environmental pressures on the GBR can be expected to intensify and new threats may emerge.

Inter-agency cross-jurisdictional co-operation is essential to effective management of the GBR. So is harnessing support from industry and the community. Ultimately, all stakeholders share responsibility for encouraging the culture of compliance that is necessary to protect the reef into the future.

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