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**“The Legal and Policy Issues Involved in
Protecting a Population of Dugongs (Dugong
dugon) from Gill Netting in Shoalwater Bay, of
the Great Barrier Reef World Heritage Area.”**

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“The Moa is gone; the Mastadon is no more; and where, in fifty years time, shall we seek the whale and dugong, the latter more especially, which cannot escape to colder seas? The Queensland Legislature is not to relax its efforts for the preservation of the animal, which has been ruthlessly slain with spear and stake-net..” Frederick G.Aflalo, 1896 “the dugong”.

Disclaimer

The views expressed in this paper do not necessarily represent those of the Great Barrier Reef Marine Park Authority, the Commonwealth Attorney-General’s Department or the Commonwealth Government.

Abstract

This paper examines a two year struggle to protect dugongs in Shoalwater Bay of the Great Barrier Reef World Heritage Area (GBRWHA) from unsustainable levels of capture in gill nets. The problem has highlighted inadequacies of current Commonwealth legislation to respond to urgent species conservation issues in the marine park, and the fragility of Commonwealth and State cooperation on agreements for protecting the area and meeting Australia’s responsibilities under international law (*Convention for the Protection of the World Cultural and Natural Heritage* 1972, the *Conservation of Migratory Species of Wild Animals* (Bonn Convention) 1979 and the *Convention on Biological Diversity*, 1992). At issue is the political will of the respective governments to act on their policies and legislative obligations.

This paper will include:

- * An overview of the Commonwealth’s commitments under international law to the protection of Australia’s dugong population and habitat in the GBRWHA region;
- * The conservation status of the dugong and the importance of the Shoalwater Bay dugong population to the region;
- * The threat of gill netting to dugongs in Shoalwater Bay;
- * The Commonwealth and Queensland governments legislative and policy frameworks for protecting dugongs and managing threats to the species and it’s habitat in Shoalwater Bay;
- * An analysis of how this legislation and policy was negotiated and applied to ultimately remove gill nets as a threat to dugongs in the Bay, and the problems encountered during the process;
- * The influence that the Defence training area status of Shoalwater Bay had on the eventual outcomes;
- * The use of this conservation problem as a case study on the ability of the Commonwealth and States to cooperatively and expeditiously deliver ‘shared responsibility for managing our natural environment’, that is the theme of this conference;
- * Recommendations for improvements to current legislation and processes for protecting threatened species in the GBRWHA.

Introduction

The dugong (*Dugong dugon*)

The dugong or sea cow, is the only strictly marine herbivorous mammal in existence. It is also the only surviving member of the family Dugongidae; Order Sirenia. It’s relative, Steller’s sea cow (*Hydrodamalis gigas*) - an enormous kelp-grazing mammal of the Arctic, was ‘exterminated by the greed of man’¹ that is, by Russian sailors in 1700’s. Today, the dugong’s closest living relatives are three species of manatees, aquatic mammals that live in freshwater rivers and coastal waters of West Africa, the Caribbean and South America.

Although dugongs resemble other marine mammals like seals and dolphins in appearance, they have no evolutionary

1 Frederick G. Aflalo (1896) ‘The Dugong’ in *A Sketch of a Natural History of Australia*, p 17-20. Macmillan and Co. Ltd, New York

relationships with them. Infact , they are most closely related to the elephants, having evolved from hippopotamus like mammals 5-35 million years ago.

The name 'sea cow' refers to the fact that dugongs graze on the tropical and subtropical seagrasses which form meadows in sheltered coastal waters across the Indo Pacific region. Dugongs once inhabited waters of 43 countries of this region, but are now extinct in most areas, with only relict populations remaining. Today, Australia is the stronghold for the species with an estimated population of about 70,000.

Factors of their life history and biology make dugongs extremely vulnerable to human impacts. Females don't begin reproducing until they are from ten to seventeen years old.

Gestation is thirteen months and a single calf is born, which remains dependant for 18 months. Calving intervals are between 3 & 7 years. This low reproductive rate makes them vulnerable to exploitation and incidental capture, and the shallow coastal ecosystems they inhabit are susceptible to habitat destruction and pollution.

Dugongs are a long-lived species, to 70 years of age . Adult and juvenile survivorship must be very high (> 90% p.a) for numbers to be maintained. Even under optimal conditions, the rate of population increase can only be only 5% per year,² which in the GBRWHA where the estimated population is 12,000, is only about 620 animals. A slight fall in adult numbers can cause a long-term decline in the population.

Vulnerability to Gill Nets

Dugongs are air breathing mammals with nostrils located at the top of their heads. They dive regularly to feed on seagrasses and need to surface frequently (about every 1-2 minutes) to breathe. Dugongs cannot survive submerged for more than 8 minutes. They drown quickly if caught in a net, and the stress of capture can cause cardiac failure³.

Dugong Population Decline

Dugongs have declined by 80% in the southern GBRWHA (between Cooktown and Hervey Bay) from an estimated 3479 +/- 459 animals in 1987 to 1682 +/- 236 animals in 1994 (population estimate +/- standard error) in the past 8 years.⁴ This level of decline makes the species critically endangered in that region under standards set by the World Conservation Union in 1995.

Shoalwater Bay ,which is part of the southern GBRWHA and located 50km north of Rockhampton, now supports the largest dugong population remaining south of Cooktown, and has a high priority for conservation. However dugong numbers in the Bay have also declined, from an estimated 765 +/- 161 to 406 +/- 78 animals (population estimate +/- standard error)).

Dugong Protection and International Law

Australia is a responsible, developed nation and an active participant in the international law arena.

In the area of international environmental law, the Commonwealth and Queensland governments (which manage the GBRWHA) contribute members to the *International Union for the Conservation of Nature (IUCN)* (or World Conservation Union) which is the peak international non-government organisation responsible for listing the world's threatened species.

The dugong has been listed as Vulnerable to extinction by the IUCN since 1982, and is recognised as a species whose conservation is internationally shared. The IUCN recently elevated matters of dugong concern at the 1996 Montreal meeting of its World Conservation Congress (14-23 October 1996). A focus of that concern was Australia's role as custodian of the species and alarm at the population decline in the GBRWHA.

The meeting recommended that the Director-General 'write to all governments with dugong populations including the Australian government, expressing concern and urging ongoing funding for full implementation of recovery programs.

Conventions

Australia has also signed 'hard law' treaties and conventions which have been promulgated into domestic law and further

2 Marsh, H; Corkeron, P; Breen, B; Morissette, N (1996) Draft Report: The Dugong, Dugong dugon An action plan for its conservation in Australia. Report to Environment Australia, Department of Environment, Sport and Territories. and in :
H.Marsh, P.Corkeron, I.R.Lawler, J.M Lanyon and A.R. Preen. The status of the dugong in the Southern Great Barrier Reef Marine Park.. Department of Tropical Environment Studies and Geography and the Co-operativ Research Centre for Ecologically Sustainable Development of the Great Barrier Reef, James Cook University of North Queensland, Townsville, and Zoology Department, The University of Queensland, Brisbane, 4072. Report to the Great Barrier Reef Marine Park Authority, October 1995. p 17

3 Marsh, and Anderson, P.K (1983) Probable susceptibility of dugongs to capture stress. Biological Conservation 25: pp:1-3.

4 op.cit., Marsh et al, 1996.

deepen our commitment to biodiversity conservation and threatened species protection. These treaties oblige States to cooperate in the protection of the environment. For example, under the *Convention for the Protection of the World Cultural and Natural Heritage* 1972, Australia has agreed to 'do all it can' in ensuring the identification, protection and conservation and transmission to future generations of the cultural and natural heritage⁵. It is important to note for the following discussion that the definition of Natural Heritage under the Convention includes 'geological and physiographical formations of delineated areas which constitutes the habitat of threatened species of animals and plants of outstanding universal value', and that one of the specified reasons for inscribing the Great Barrier Reef Marine Park on the World Heritage List in 1981 was that 'the area provides major feeding grounds for large populations of the Dugong'. It is clear that Australia has undertaken to protect both dugongs and their delineated habitat in the GBRWHA. Provisions giving effect to the Convention and other international agreements are now reflected in the *Great Barrier Reef Marine Park Act* 1975 (hereafter the 'Act') at S. 65.

CITES

Dugongs are listed internationally under the *Convention on International Trade in Endangered Species of Wild Fauna and Flora* 1975 (CITES) as a species threatened with extinction in Appendix 1, and in Australia under Appendix 11 as a species which may be threatened with extinction if trade is not strictly controlled.

Bonn Convention

Dugongs are included in Appendix II of the *Conservation of Migratory Species of Wild Animals* 1979 (Bonn Convention), which lists migratory species that have an unfavourable conservation status and which require international agreements for their conservation and management. Parties that are Range States of such migratory species have agreed to conclude agreements which would benefit the species. To date, Australia has not entered into any agreements with other range States.

Convention on Biological Diversity, 1992

Under the Convention Australia agreed to protect its biodiversity for future generations; apply the precautionary principle and principles of ecologically sustainable development.

Convention of Wetlands of International Importance 1971 (Ramsar Convention)

Shoalwater Bay was listed in 1996 under the Convention, giving protection to dugong habitat in the area.

World Charter for Nature 1982

In signing this agreement, Australia agreed on general nature conservation principles which include that 'special protection be given to unique areas, to representative samples of all the different types of ecosystems and to the habitats of rare or endangered species'.

Recent International Actions on Gill Nets

In the State of Florida, USA, the bycatch impact of gill nets was one reason for significant changes in fisheries laws and the State's Constitution which has seen gill nets banned⁶. Section S16 (a) of Florida's constitution was amended in 1994 and asserts:

'The marine resources of the State of Florida belong to all of the people of the State and should be conserved and managed for the benefit of the State, its people, and future generations. To this end the people hereby enact limitations on marine net fishing in Florida waters to protect salt water finfish, shellfish and other marine animals from unnecessary killing, overfishing and waste. (1) No mesh nets or other entangling nets shall be used in any Florida waters.'⁷

Florida is not buckling to pressure from the fishing industry and a recent challenge of the net ban by five commercial fishers was dismissed⁸.

5 Articles 1, 2 & 4, of the Convention for the Protection of the World and Natural Heritage, 1972.

6 Florida Statute xxv111 Natural Resources: Conservation, Reclamation and Use 1995, section 370.0805 Saltwater Fisheries: was amended to ban gill nets and put in place a net ban assistance program to provide economic assistance to fishers who lost their netting livelihood.

7 *Department of Environmental Protection, et al., v Bruce Millender, et al.* Supreme Court of Florida, January 18, 1996., No. 85,880. This case tested the validity of the constitutional amendment and upheld it.

8 Gene Buck, Congressional Research Service, USA. Congressional Summary for May-June 1996.. US Congress Internet Service to the Marine Mammal Research Group 'Marmam'. 1/6/96. e-mail: gbuck@crs.loc.gov. Case reference not cited in this correspondence.

In March 1997, New Zealand suspended squid fishing in the Auckland Islands of the Southern Ocean for a year in a move to protect the rare Hookers sea-lion from incidental capture in nets. Such international precedent should send a strong signal to Australia's conservation managers and decision makers.

Dugong Conservation Status Under Australian Law

The *Endangered Species Protection Act* 1992 (Cwlth), does not currently list the dugong, but this is under review.

- In Queensland, dugongs are listed as vulnerable to extinction pursuant to the *Nature Conservation Act* 1992 and under the *Nature Conservation (Wildlife) Regulation* 1994 (Qld)⁹. The preparation of a conservation or recovery plan for listed wildlife and its habitat are part of the management intent for vulnerable species under the regulations, and may be prepared pursuant to Part 7, s.112 of this Act, which can make provision for any matter for which a regulation may be made under the Act.
- In the GBRWHA, the dugong population decline meets the 1995 IUCN criteria of critically endangered south of Cooktown, and including Shoalwater Bay¹⁰ the most important habitat for the species in this region^{11,12}.
- Under the *Great Barrier Reef Marine Park Regulations*, dugongs are listed under s.13AB (1) as a declared animal for collecting (by relevant permission under the zoning plan) under Part 1 of Schedule 1. This allows for the Authority to issue permits for traditional indigenous hunting, however, such permission is limited by s.13 AC (5) (a) in that the Authority shall have regard to the need for conservation of endangered species and the capability of that species to sustain harvesting, before granting a hunting permit. The Authority has not issued hunting permits for dugongs in the region south of Cooktown for 2 years because of the decline in the population.

Under s 211 of the *Native Title Act* 1993 (Cwlth), irrespective of other Commonwealth or State or Territory laws, native title holders are not prohibited or restricted from hunting or fishing or gaining access to the land or waters for carrying out these activities.

Shoalwater Bay

Shoalwater Bay is a spectacular, deeply indented bay of 520,000 hectares, located in the GBRWHA, north of Rockhampton, Queensland. A feature of the Bay is the presence of extensive wetlands including 13,000 hectares of seagrass meadows; diverse mangrove communities and an intricate network of¹² tidal rivers which drain into the Bay from the coast. Seagrass meadows occur along the intertidal banks of the entire Bay and extend into these rivers and creeks. Several islands which are Commonwealth land, are located at the mouth of the Bay.

The area is recognised for protection under national and international law. Aside from being part of the World Heritage Area, it is listed on the Register of National Estate under the *Australian Heritage Commission Act* 1975 (Cwlth)^{13 14}; as a Wetland of International Importance under the 1971 *Ramsar Convention* and subject to the *Japan Australia Migratory Bird Agreement* (JAMBA); and *China Australia Migratory Bird Agreement* (CAMBA) because of the large number of migratory bird species using the area. It has been recommended by the Great Barrier Reef Marine Park Authority the Authority) as a scientific reference area¹⁵.

9 In Queensland, Vulnerable under the *Nature Conservation (Wildlife) Regulation* 1994 (Qld), Schedule 3, Part1, s. 10

10 The area to which the current debate applies: For the purposes of this discussion, the area in question is the enclosed Shoalwater Bay bounded by the mainland and Townshend island to the east and the mainland coast to the west and an imaginary line across the top of the bay from Macdonald Point to the north west tip of Townshend island. It excludes Port Clinton. This area is the portion of the Shoalwater Bay Military Training Area to which the current GBRMPA plan of management for the conservation of dugong applies.

11 H.Marsh et al. op. cit., p. 8

12 ibid., p 11

13 The Commission determined that it meets all seven natural criteria and four cultural criteria set out in s4 (1A). The value of dugongs and their seagrass habitat are specifically recognised. It is also subject to international wildlife treaties: Department of Environment, Queensland, *Wetlands-more than just wet land. Shoalwater and Corio Bays. Information bulletin.* Department of Environment, Brisbane 1996. Twenty-six species of migratory birds are protected under the Japan Australia Migratory Bird Agreement (JAMBA) 27 bird spp listed under the China Australia Migratory Bird Agreement (CAMBA)

14 Honourable Brian Littleproud, MLA, Minister for Environment, Queensland. Plan to extend new conservation area. Media Release, Minister for Environment March 19, 1995. 'State Environment Minister Brian Littleproud has proposed extension of a Central Queensland conservation area nominated today to the 'List of Wetlands of International Importance' under the Ramsar Convention.

15 Department of Defence Shoalwater Bay Training Area Draft Strategic Plan. Gutteridge, Haskins and Davey, Environmental Scientists and Planners. April 1995. s 8.3.16 Reference Area: Objective: to maintain the natural integrity of the Area so it may be used as a Reference Area for scientific research.

Rich in Wildlife

Shoalwater Bay is important regionally, nationally and internationally for its outstanding biodiversity, including that it supports:

One-third of Australia's bird species including more than 20,000 waterbirds; and sixteen species of breeding migratory waders;

- Four hundred and twenty-eight species of marine and estuarine fish and seventeen species of freshwater fish;
- Various species of 'charismatic megafauna' including the dugong, the endangered loggerhead turtle (*Caretta caretta*); the vulnerable green turtle (*Chelonia mydas*); the endangered hawksbill (*Eretmochelys imbricata*) and the endemic flatback turtle (*Natator depressus*) and species of rare inshore cetaceans: the Irrawaddy river dolphin (*Orcaella brevirostris*) and indopacific humpback dolphin (*Sousa chinensis*);

Half of Australia's recorded mangrove species and half of Queensland's wetland communities.

Use of the Area

Defence

The Department of Defence acquired Shoalwater Bay in 1965 for training, and this activity was permitted to continue after the Great Barrier Reef Marine Park was declared in 1975 under special provisions of the Mackay/Capricorn section zoning plans made under pursuant to the 'Act' in the interest of public safety¹⁶. In 1994, a Commonwealth Commission of Inquiry into Shoalwater Bay recommended that equal priority be given to conservation and defence force training in the area. Although the Department of Defence can close the area for military operations under Defence Regulations, it is nonetheless bound by the 'Act', at S 4 (1). The training area includes adjacent coastal land, through which public access to the Bay via the land is prohibited. The Bay can only be reached through the marine park by boat launched at distant areas of the coast.

The issue of Defence operations in the World Heritage Area is a complex topic and beyond the scope of this paper. However, it will be discussed in the context of its indirect influence on the outcome of management actions to overcome netting threats to dugongs in the Bay.

Commercial Net Fishing in Shoalwater Bay

Shoalwater Bay is zoned to allow net fishing under clauses 5.2 and 6.2 of the Mackay/Capricorn Section Zoning Plan made pursuant to S 32 of the 'Act'¹⁷. There are 900 licensed net fishers in Queensland, of which 250 operate in the GBRWHA. According to records of the Queensland Fisheries Management Authority (QFMA), eight of those fishers operate in Shoalwater Bay where they net for barramundi, blue salmon, mackerel and shark as a supplement to their main fishery which is for crabs.

A range of net types permitted in the Bay, included nets set in the intertidal waters and tidal rivers outside the GBRWHA, but within waters of Queensland and within the delineated habitat of dugongs defined under Article 11 of the WHA Convention.

Offshore drift nets for catching shark are set in waters below low water mark, in the marine park. Nets may be up to 600m long and all have a large mesh size (between 100-215mm) which easily entangle dugongs.

By regulation, Queensland fishers may set up to six at any one time, but must be within 800m of the closest net, under Schedule 13, Part 8, S.99 (5) of the *Fisheries Regulations* 1995 (Qld). This means that a fisher may be at a distance of 2.4 kilometres from the furthest net, making effective monitoring for dugongs impossible.

16 Great Barrier Reef Marine Park Authority. Mackay/Capricorn Section Zoning Plan. Great Barrier Reef Marine Park Authority 1987. p 14 Part 3, Section 13 makes provision for Defence Areas. s 31.1 the objective is to make provision, in the interest of public safety, for control of the use of, and entry into, areas of the Great Barrier Reef Marine Park used for the conduct of defence operations.

17 Great Barrier Reef Marine Park Act 1975: the Bay is zoned under s 32 and s 36(6) of the Act. Provisions for use in these zones are detailed in the Mackay/Capricorn Zoning Plans and are briefly relatively unrestricted use in General Use 'A' Zones (clause 5); general use but free of shipping and trawling in General Use 'B' Zone (clause 6), limited use Commercial netting is permitted in General 'A' and 'B' zones.

Netting as a Threat to Dugongs

Incidental catches of marine mammals in gill net fisheries are of international concern¹⁸ and dugong populations have been decimated by gill nets in many parts of their range, for example, along the east coast of Africa and Sri Lanka.

In Australia, gill netting has recently been nominated as a key threatening process for listing in Schedule 3 under S.25 of the *Endangered Species Protection Act 1992* (Cwlth), by the Humane Society International Inc. 1996., and the incidental capture of dugongs in gill nets in the southwest Gulf of Carpentaria and GBRWHA is cited as a reason for this listing¹⁹.

The level of incidental capture of dugongs in gill nets in the GBRWHA is unknown but believed to be a significant source of mortality.²⁰

Through my research on incidental dugong mortality, I recorded 29 dugong carcasses in 1996 from populated areas between Hinchinbrook Island and Rockhampton. The cause of death could be determined for 12. Of those, 10 were positively attributed to gill nets and six more showed evidence of net entanglement.

Jurisdictional Arrangements for Managing the GBRWHA

Shoalwater Bay is managed jointly by the Commonwealth and Queensland governments under 'the *Act*' and the *Marine Parks Act 1982* (Qld).²¹ This arrangement is necessary because of jurisdictional differences arising from the High Court decision in the *Seas and Submerged Lands case (NSW v Cwlth (1975) 135 CLR 337)*²². States retained rights to legislate for and enact State environment protection legislation where there is a sufficient connection between the State and the subject matter of the legislation. This position was reinforced by 5.5 (c) of the *Coastal Waters (State Powers) Act 1980*.

Key issues addressed in this paper surround the legal and political problems arising from this arrangement. Although these are discussed in more detail in a later section, the following defines what is meant by the Great Barrier Reef Marine Park and World Heritage Area.

What is the Great Barrier Reef Marine Park?

Commonwealth Boundary

The Great Barrier Reef lies off the coast of Queensland and stretches for about two thousand kilometres from Cape York in the north to Hervey Bay near Brisbane. Commonwealth legislation providing for the proclamation of much of this area as a marine park was enacted in 1975 under the 'Act' and describes the area as the Great Barrier Reef Region, which is defined in Part 1 of the 'Act' as:

18 The International Whaling Commission. In Press. Report of the workshop on mortality of cetaceans in passive fishing nets and traps. Rept. Int. Whal. comm. (Special issue) 1996.
1995 Symposium on the Biology and Conservation of small cetaceans of southeast Asia implicated gill netting as a major cause of dolphin decline.

T.A Jefferson & B.E Curry, Review and Evaluation of Potential acoustic methods of reducing or eliminating marine mammal-fishery interactions.. Final Report to U.S Marine Mammal Commission, 1994. U.S Department of Commerce National Technical Information Service, Springfield, Virginia.

J. Harwood, Competition between seals and fisheries. *Sci. Prog., Oxf.* (1987) 71, 429-437. For example, 10,000 harp seals (*Phoca groenlandica*) may be drowned annually in driftnets off Norway.

19 Nomination of gill netting for Schedule 3 of the *Endangered Species Protection Act 1992*, 3rd October 1996. Humane Society International, NSW. page 2: 'In 1995 some 36 dugongs were drowned in one gill net operated by commercial barramundi netters in the southwest Gulf of Carpentaria...' Also in 1995 there was a spate of gill nets deaths in Shoalwater Bay... In Hervey Bay 67% of all dugong carcasses can be attributed to gill nets'

20 H.Marsh, P.Corkeron, I.R.Lawler, J.M Lanyon and A.R. Preen. The status of the dugong in the Southern Great Barrier Reef Marine Park.. Department of Tropical Environment Studies and Geography and the Co-operative Research Centre for Ecologically Sustainable Development of the Great Barrier Reef, James Cook University of North Queensland, Townsville, and Zoology Department, The University of Queensland, Brisbane, 4072. Report to the Great Barrier Reef Marine Park Authority, October 1995. p 17

21 *Coastal Waters (State Powers) & Commonwealth (State Titles) Act 1980* proprietary rights in and legislative powers over the seabed and its resources within three nautical miles of the States was conferred. The states can license fishing in their coastal waters and enact environment protection legislation to apply to those waters, but s.4(c) of the CW(ST) Act provides that Qld's titles are subject to the operation of the 'Act' and s.107 of the Constitution continues to apply to correct any inconsistencies between State and Cwlth laws

22 G.M.Bates. *Environmental Law in Australia*. 1995. 4th Edition, Butterworths, Australia Ltd. p 93. The Offshore Co institutional Settlement is an agreement to confirm state powers over coastal waters following a revocation of those rights in the *Seas and Submerged Lands Act 1973*. (Cwlth)

- a) the area described in the Schedule 1; and
- b) such area (if any) contiguous with the northern boundary of that area prescribed, other than any part of such area that is referred to in section 14 of the *Seas and Submerged Lands Act 1973* or is an island, or part of an island, that forms part of Queensland and is not owned by the Commonwealth.

Thus, the Commonwealth marine park boundary is geographically and politically defined to exclude the intertidal areas between low and high water mark of the coast, and internal waters of Queensland, yet these areas include significant dugong feeding habitat.

World Heritage Area

The GBRMP is overlaid by a World Heritage Area. Its current boundary mirrors the Commonwealth marine park in that it extends to low water mark, but also includes State and Commonwealth islands. Further, the 'internal waters' issue does not arise and therefore the WHA boundary includes those areas which are internal waters of Queensland below low water along the Queensland coast.

There is no constitutional impediment restricting the boundary of the GBRWHA to low water mark, even though the 'Act' constrains the Commonwealth jurisdiction of the marine park. This is because the declaration of Australia's World Heritage Areas are constitutional in character, in that following Australia's ratification of the Convention for the Protection of the *World Cultural and Natural Heritage 1972*, the High Court ruled in the 1983 Tasmanian Dams case (*Commonwealth v Tasmania* (1983) 158 CLR 1; 46 ALR) that Commonwealth legislation could be made to implement a treaty to which Australia is a party under the External Affairs power (s 51 xxix) of the Australian Constitution. As a result, the *World Heritage Properties Conservation Act 1983* was promulgated. The Convention sets out criteria for Cultural and Natural Heritage in Articles 1 & 2 which must be satisfied if an area is to meet requirements for listing. The Great Barrier Reef nomination was largely made on the basis that the region met the criteria for natural heritage of outstanding universal value, including that it supported the delineated habitat of endangered flora and fauna. The fact that the Great Barrier Reef is habitat for the dugong was also specifically mentioned as a reason for listing. A case could be therefore be made on constitutional grounds for extending the entire marine park World Heritage Area boundary across State waters to high water mark, in order to include the delineated habitat of the dugong (and a number of other inshore endangered species of the reef), and in doing so, meet more fully, Australia's obligations and responsibilities under the Convention. This issue is discussed more fully in a later section on options for resolving the problems.

The Problem

Incidental Capture of Dugongs in Gill Nets

In 1994 the Authority received reports of several dugong carcasses in Shoalwater Bay in which nets were implicated as the cause of mortality²³. Carcasses were often found mutilated, in an attempt by fishers to sink and hide the remains or remove them from nets. The Commission of Inquiry also expressed concern about the problem²⁴ and the Authority's own staff advised the Executive in 1994 that gill netting is not an appropriate activity in the Bay²⁵. It was also rumoured that there was an illegal meat trade of dugongs in the Mackay/Capricorn region.

The problems this issue raised for effective conservation management were not only about managing netting, but also the indirect take and mutilation of dugongs.

The Authority responded to these concerns by adopting a consultative approach with the fishing industry and provided self regulation guidelines to Queensland Commercial Fishing Organisation (QCFO) for netting in dugong habitat. A strongly

23 Letter from Department of Primary Industries, Qld to GRBMPA (25/10/94) recording concern about the seizure of a large number of unlawful nets, one with a dugong entangled and a dead dugong with axe wounds

24 Commission of Inquiry op.cit., p 226. Chapter 13, s 13.08: trawling and gill nets can accidentally drown dugongs and turtles. Dr.B.Tustall believes dugong numbers have declined as many have drowned after becoming entangled in nets. This view is supported by statements from a Department of Defence caretaker to Dr R. Hynes, a Consultant to the Commission; and Mr R. Harris of the Queensland Commercial Fishermen's Organisation (QCFO) acknowledges that some dugong do get caught in nets. The Queensland Government and QCFO disputed this. The Commission considers that research into this is warranted.

25 In an internal memo, an Enforcement Officer concluded that the 'appropriateness of using or allowing set nets in such an important area should be examined'. Options such as a restriction on the use of nets in the area would not address the problem; that anything short of prohibition on use and possession of nets would be impossible to enforce; that those fishermen suspected would not be affected by netting restrictions; and that there would only be a slight chance of catching the culprits.

worded letter seeking cooperation to end the dugong mortality was sent to Industry by the Authority ²⁶ and a warning issued to the QCFO that

“If the unlawful killing of dugongs in the Shoalwater Bay area persists this agency (GBRMPA) will certainly consider what actions it can take, be they Regulatory or consultative to curb these activities”.

In May 1995, the Authority convened the first meeting of a Dugong Review Group to discuss implementation of a strategy for dugong conservation ²⁷. The Authority was extremely concerned about data from commissioned dugong population surveys which showed a dramatic decline of the dugong population south of Cooktown and the group recommended that conservation strategies to protect dugongs in the region must be a priority. The Review Group includes representation from all stakeholders, interest groups, government organisations and scientists.

Shortly afterwards, between June and August 1995, the Authority received new reports of dugong mortality in gill nets in Shoalwater Bay.

The Army also complained to the Authority about illegal netting and breaches of closure regulations by some commercial fishers in the Bay. Another warning was issued to the QCFO that commercial fishers who continued to ignore Army closures of Shoalwater Bay under official notice to mariners would be arrested and prosecuted. The QCFO sent out a warning to fishers stating that...

“Once again permission for commercial fishers to operate in the Shoalwater Bay Training Area has been jeopardised by several fishermen disregarding the rules’ ...and, that ‘it would be well within the authority of the Army to completely close the area’ ..and that ‘with increasing pressure coming from a number of sources to close the entire Bay to commercial fishing, this sort of disregard for closures is the last thing we need”

Authority staff advised the Executive that self regulation measures allegedly adopted by the fishing industry in 1994 had not reduced the problem; that the dugong was critically endangered in the region and that stronger action must be taken on netting. The Authority began to investigate emergency and longer term options for dealing with the problem under the ‘Act’ and also sought cooperation from Queensland. The Federal Environment Minister, Senator John Faulkner was also briefed, and gave support to stronger action.

An emergency meeting was called in August 1995 with fishers in the Rockhampton area as a last chance for self regulation. The Federal Minister instructed that if the solution did not result in cessation of dugong deaths, he would close the entire fishery (including crab fishing) in the Bay ²⁸. The fishers were divided, with some supporting a voluntary ban on all nets because of the risk to dugongs, and therefore a risk to their livelihood from the crab fishery. Others argued that only foreshore and offshore set nets were the problem. Finally, after vigorous persuasion from the QCFO Executive Officer, the meeting agreed to forgo only the use of foreshore and offshore set nets but continue to allow rivers set and offshore drift nets.

The Authority announced that it would further investigate the risk of river set and drift nets to dugongs, and if they were found to be a threat, action would be considered. The investigation subsequently concluded that all nets are a significant risk to dugongs in the Bay ²⁹.

The Authority had no power to make immediate regulations to ban the nets agreed at the meeting, and relied upon the Queensland Department of Environment and Department of Primary Industries for assistance.

The Queensland Department of Environment were the most appropriate government agency to take immediate action,

26 On 5/10/94 a letter was sent by the GBRMPA Executive to the Queensland Commercial Fisheries Organisation (QCFO) ; Army-Rockhampton; Queensland Boating and Fisheries Patrol and the Queensland Department of Environment (DoE) seeking assistance to stop the incidental mortality. Queensland Boating and Fisheries Patrol and Fishing Industry claimed to know ‘who the culprits were’. They were never caught in spite a promise by industry that every effort would be made to apprehend them.

27 Great Barrier Reef Marine Park Authority. Turtle and Dugong Conservation Strategy for the Great Barrier Reef Marine Park . 1994 Issues Paper for public comment, GBRMPA .

28 The Federal Minister delivered an ultimatum to the fishing industry at an emergency meeting held in Rockhampton on August 10, 1995 which was that fishers would be given a chance to come up with a self-regulatory solution to stop net deaths in the Bay otherwise total fishery closure would result. Many fishers elected to forgo all net fishing rather than risk losing their most lucrative fishery (crabbing), but the QCFO president urged them not to ‘give in’ and only agree to a ban of foreshore and offshore set nets.

29 Lee Long, W.J, L.J McKenzie and R.G Coles (1996) Distribution of Seagrasses in Shoalwater Bay, Queensland September 1995. Queensland Department of Primary Industries, Northern Fisheries Center, Cairns. pp Surveys of seagrass meadows in SWB by DPI Northern Fisheries established that seagrass and dugong feeding trails occurred in many rivers and creeks of Shoalwater Bay. GBRMPA staff collated Dugong distribution & sightings data in the Bay from reports, studies and aerial surveillance flights. These clearly showed records of dugongs in rivers and creeks since studies began in 1975: e.g. in Wake, Judith Ann (1975). A study of habitat requirements and feeding biology of the Dugong, Dugong dugon (Miller). Unpublished Honours Thesis; Dept. Zoology, James Cook University, QLD. Anderson, Paul. K, A. Birtles (1978) Behaviour and Ecology of the Dugong, Dugong dugon (Sirenia): Observations in Shoalwater and Cleveland Bays, Queensland. Aust. Wildl. Res., 5, 1-23.

but in general were reluctant to do so for fear of upsetting the powerful Queensland fishing industry. One officer took the view that the dugong was not sufficiently endangered, drawing a comparison between the population status of dugongs and the northern hairy-nosed wombat (*Lasiorninus krefftii*) of which there are now only about 70 in the wild. The Authority on the other hand took the view that prevention is a more effective approach to conservation biology, and that waiting for dugongs to reach the 'hairy-nosed wombat status' before strong action was taken would be foolish.

Fortunately, the Queensland Department of Primary Industry and Fisheries commendably implemented the necessary regulations to close the area to foreshore and offshore set nets under the *Queensland Fisheries Regulations 1995*³⁰ demonstrating a level of commitment to the principles of ecologically sustainable development contained in Part 5, S.32-42 of the *Fisheries Act 1994* (Qld). This gave the Authority time to negotiate further cooperative action with Queensland and investigate what powers it had to deal with netting in the long-term and investigate more thoroughly, which other nets in use in the Bay were a risk to dugongs.

In spite of the warnings and closures, mortality of dugongs in gill nets in Shoalwater Bay continued into 1996, strengthening the case for increased regulatory action of all gill nets.

The detail of these regulatory options and how they were eventually applied from this point are examined in the following sections.

Options for Resolving the Problem

There is a well developed legislative and policy framework in place for the Commonwealth, the Authority and Queensland to act on the Authority's warnings to the QCFO.

Policy

- In 1979, the Commonwealth and the Queensland governments signed the '*Emerald Agreement*' which sets out the basis for management of the GBRMP and stated that

"each party to this Agreement shall use its best endeavours to provide for and secure the carrying out of this Agreement by it and by its Authorities and instrumentalities".

Under the 1992 *Intergovernmental Agreement of the Environment*, the Commonwealth and States agreed to 'cooperate in the conservation, protection and management of native species and habitats that occur in more than one jurisdiction'³¹ and recognise the obligation to conserve World Heritage Areas.³²

In 1994, the Authority published a Turtle and Dugong Conservation Strategy for the Great Barrier Reef Marine Park which outlined concern about the problem of incidental bycatch of dugongs in fishing nets³³ and declared policy promoting 'best practice guidelines' that 'must be complied with adequately within 18 months of introduction otherwise legislative requirements will follow'.

30 Following the August 10 meeting, 1995, offshore and foreshore set mesh or gill nets were banned from the proposed plan of management area of Shoalwater Bay through a declaration of a closed waters under Part 5, Division 2-Fisheries declarations of the *Fisheries Act 1995* (Qld). In Part 5, Division 2, s 43 (a1 A fisheries agency may declare-a) a period to be a closed season, b) waters to be closed waters) fish to be regulated fish. Under s 43 (3), closed waters may regulate-c) using or possessing a boat, aquaculture furniture, fishing apparatus or anything else in the closed waters.

Under Fisheries Regulations 1995 (Qld) the plan of management area was declared Shoalwater bay Closed waters under Part 4, s 16 (1) and scheduled in Schedule 2, s 205. (1) as closed to set mesh nets in 205 (2) Under s 108 it is a serious fisheries offence to contravene a closed water declaration (s 108 (b) (i))

31 Intergovernmental Agreement on the Environment, Schedule 9 (6)The Commonwealth and the states agree to cooperate in the conservation, protection and management of native species and habitats that occur in more than one jurisdiction. In addition to participating in such cooperative activities, the Commonwealth and the States may take whatever action they deem appropriate within their respective jurisdictions to protect any native species and habitats which they consider requires specific action

32 *ibid.*, Schedule 8 (1)The States recognise that the Commonwealth has an international obligation as a party to the World Heritage Convention to ensure the identification, protection, conservation, presentation and transmission to future generations of Australia's natural and cultural heritage of 'outstanding universal value'.

33 Great Barrier Reef Marine Park Authority. Turtle and Dugong Conservation Strategy for the Great Barrier Reef Marine Park. Great Barrier Reef Marine Park Authority, Townsville. p 20. Strategy 2: Objectives: Commercial fishing: Trawling and Gill Netting. Strategy. Continue to change fishing practices (trawling and gill netting) to minimise the level of accidental death and capture resulting from the incidental capture of turtles and dugongs. Strategies 2.1: Continue to develop and promote guidelines for 'best practice' in the commercial fishing industry and recreational fishing, e.g. the frequency of net checks, specified net dimensions, length of shot time and the removal and recovery of animals from nets. 2.3. Legislate requirements if compliance with guidelines is inadequate within 18 months of introduction. 2.4 Develop and conduct an awareness campaign for the commercial fishing industry including information about crucial habitat areas, species biology and traditional knowledge from A&TSI, fishing industry and other sources.

- In 1994, the Commonwealth and Queensland governments released a twenty-five year Strategic Plan for the Great Barrier Reef World Heritage Area in which objectives are to: 'address and negotiate (with stakeholders) in the light of existing knowledge and the precautionary principle' the adequacy and amount of area protected from impacts; 'pay special attention to conserving rare and endangered species' through a range of strategies which include development of 'appropriate coordinated management actions'³⁴.

Legislation

The jurisdictional arrangement of Commonwealth and State boundaries and separate marine park legislation has made it extremely difficult for the Commonwealth to take effective action to reduce net mortalities of dugongs in Shoalwater Bay.

Commonwealth

The Great Barrier Reef Marine Park Act 1975 and Regulations.

- * The Authority looked to its regulation making power as the most obvious way to rapidly respond to the need for emergency measures to prohibit gill nets.
- * Section 65 of the 'Act' directs the Authority to carry out its functions and exercise its powers in accordance with Australia's obligations under international law³⁵.
- * Section 66 of the 'Act' provides:
 - (1) The Governor-General may make regulations, not inconsistent with this Act or with a zoning plan, prescribing all matters required or necessary or convenient to be prescribed for carrying out or giving effect to this Act.
 - (2) Without limiting the generality of subsection (1), regulations may be made:
 - (f) providing the protection and preservation of the marine park and property and things in the marine park;
 - (r) regulating or prohibiting the taking into the marine park and the use in the marine park of...nets & fishing apparatus;
 - (v) providing for any matter incidental to or connected with any of the foregoing.
- * Because regulations under the 'Act' must be not be inconsistent with zoning plans (s.66 and s.36(1))³⁶, this option was not possible because commercial netting is a permitted activity within the Mackay/Capricorn Section of the marine park.
- * In respect of power to regulate outside the marine park, and according to advice from the Commonwealth Attorney's General Department,³⁷ it was possible that S.66 (f) 'might potentially allow for a prohibition on possession or use of gillnets in the vicinity of the marine park, but outside it on the basis that such prohibition will protect dugongs, a feature of the marine park. Another approach is to rely on the incidental regulation power of S.66(2) (v). However, that because regulations 66(f) and (v) do not expressly state that they may apply to acts 'whether in the marine park or elsewhere', (as is the case in preventing pollution under s.66(2) (e)), then it appears there is limited scope to use these regulations.

33 Great Barrier Reef Marine Park Authority. Turtle and Dugong Conservation Strategy for the Great Barrier Reef Marine Park. Great Barrier Reef Marine Park Authority, Townsville. p 20. Strategy 2: Objectives: Commercial fishing: Trawling and Gill Netting. Strategy. Continue to change fishing practices (trawling and gill netting) to minimise the level of accidental death and capture resulting from the incidental capture of turtles and dugongs. Strategies 2.1: Continue to develop and promote guidelines for 'best practice' in the commercial fishing industry and recreational fishing, e.g. the frequency of net checks, specified net dimensions, length of shot time and the removal and recovery of animals from nets. 2.3. Legislate requirements if compliance with guidelines is inadequate within 18 months of introduction. 2.4 Develop and conduct an awareness campaign for the commercial fishing industry including information about crucial habitat areas, species biology and traditional knowledge from A&T&SI, fishing industry and other sources.

34 Great Barrier Reef Marine Park Authority. The Great Barrier Reef. Keeping it Great. A 25 year plan for the Great Barrier Reef World Heritage Area. Great Barrier Reef Marine Park Authority 1994. p16

35 'S.65 of the Act: the Act has effect subject to the obligations of Australia under international law, including obligations under any agreement between Australia and another country or countries'.

36 Section 66.(1) The Governor-General may make regulations, not inconsistent with this Act or with a zoning plan, prescribing all matters required or permitted by this Act to be prescribed or necessary or convenient for carrying out or giving effect to this Act. Section 36(1) provides that the Authority must perform its functions and exercise its powers in relation to a zone in accordance with any relevant zoning plans in force. There is no provision in the Mackay/Capricorn Section Zoning Plan which would allow for nets to be declared in relation to a particular area of a particular zone.

37 Attorney-Generals Department, Susan Reye, General Counsel to the Department of the Environment, Sport and Territories: 3/3/97 'Power to prohibit gillnetting in the Great barrier Reef Area to protect Dugong.

* Another suggestion was that it may have been possible and not inconsistent with a zoning plan to alter the types of nets declared for the purposes of 'commercial netting' under the zoning plans by amending regulation 13AB(5) of the *Great Barrier Reef Marine Park Regulations* to make certain types of commercial nets (e.g. the nets identified as threats to dugongs) not declared.³⁸ However, it is impossible to do this because all commercial nets are similar in construction and it is the method of setting which distinguishes their use. In other words, all nets would have to be prohibited from the entire zone, and this would not have been reasonable under the circumstances or have received support.

* Yet a further option, was the preparation of a plan of management under Part VB, S.39W³⁹ of the 'Act' which would specifically address threatened species and ecological communities:

Section 39Y sets out the objects of plans of management which are:

- (a) to ensure, for particular areas of the marine park in which the Authority considers that nature conservation values, cultural and heritage values, or scientific values are, or may be, threatened, that appropriate proposals are developed to reduce or eliminate the threats; and
- (b) to ensure that species and ecological communities that are, or may become, vulnerable or endangered are managed to enable their recovery and continued protection and conservation; and
- (c) to ensure that activities within areas of the marine park are managed on the basis of ecologically sustainable use.

Significantly, such plans can make 'enforcement provisions' to prohibit activities permitted in zoning plans⁴⁰. It was therefore possible for the Authority to prohibit the carriage and use of nets into Shoalwater Bay from the marine park, however, at the absolute minimum, a plan would take three months to complete and bring into force.

* This provision also directs the Authority to 'be informed by the Precautionary Principle in preparing management plans and protecting world heritage values'. A link is therefore drawn to the Authorities obligation to protecting dugongs and their habitat with Article 2 of the WHA Convention and the Authorities obligations to international law.

* Rezoning or amending the entire Mackay/Capricorn Section was another option under S 37(1) of the 'Act'. Although zoning plans provide the most powerful tool for management in the marine park, the procedure is lengthy and can take years.

* The issue of take, collection and interference with dugongs also needed to be addressed.

Under Schedule 1 of the GBRMP Regulations, dugongs are listed as a declared animal for collecting provided that written authority is given by the Authority or its delegate to use and enter a zone for that purpose.

* Under the Mackay/Capricorn Zoning plan, part of Shoalwater Bay is zoned partly General Use 'A' (Part two, clause.5) in which the use and entry of the zone for the purpose of collecting a dugongs is possible only with a written authority, S 5.2 (b) (ii).

* Collecting is defined under clause.4 of the Mackay/Capricorn Zoning Plan as 'the taking of an animal...declared in the Regulations'; and 'take' is defined as: '...remove, gather, catch, capture, kill, destroy, dredge, raise, carry away, bring ashore or obtain by any other means, or to endeavour to carry out any of those acts'. It does not include interference, injure or mutilate.

* The offence of collecting or taking dugongs at present is tied to the purpose for which a zone is used and entered. In other words, it is possible to for a person to intentionally enter a zone to take a dugong, but unless mens rea can be proved, that is that the accused intentionally and/or negligently used or entered a zone for a purpose other than a purpose permitted under a zoning plan s 38A, defence of honest and reasonable, but mistaken belief of fact may be given and may be successful under both Commonwealth and Queensland criminal codes (*He Kaw Teh v R* (1985) 157 CLR 523; 60 ALR 449).

The National Parks and Wildlife Conservation Act 1975

* Under this Act, Section 69 provides that the Governor-General may make regulations for and in relation to giving effect to a Scheduled agreement, which includes the *World Heritage Convention*.

39 *ibid.*, s 39X.

40 39ZD (4): A plan of management is taken not to be inconsistent with a zoning plan merely because it prohibits the doing of something that is not prohibited by the zoning plan.. 39ZD (6): The enforcement provisions may prohibit the doing of an act even though the doing of the act would, apart from the enforcement provisions, be permitted or authorised by or under this Act.. Section 39ZD (5): If the plan of management contains provisions (the 'enforcement provisions') prohibiting or regulating the doing of something, or requiring the doing of something, those provisions are to be included in a separate part of the plan. Section 39ZD (7): The enforcement provisions may exclude from their operation acts or omissions of a kind that were lawfully engaged in before the enforcement provisions come into force.

- * As is the situation with other international agreements, the power to make regulations must be linked to the agreement and an example of the constitutional basis for this is s.51xxix, the External Affairs power. The regulations however must conform with the relevant treaty and be 'reasonably appropriate and adapted to achieving what is said to impress it with the character of a law with respect to external affairs', (Deane.J, in *Commonwealth v Tasmania* (1983) 158 CLR 1; 46 ALR 625 (Tasmanian Dam case).
- * The power to make regulations under S.69 can apply to a World Heritage area.
- * Because one of the reasons for listing the marine park as World Heritage Area was that it is habitat for dugongs; and because that habitat can be delineated, S.69 is relevant and applicable to regulating threatening activities to dugongs like gillnetting; take and interference in the WHA and it's vicinity.
- * In addition, the Convention provides operational guidelines⁴¹ which obliges States to protect World Heritage Areas with 'buffer zones':
 - 'Whenever necessary for the proper conservation of a cultural or natural property nominated, an adequate 'buffer zone' around a property should be provided and should be afforded the necessary protection.
 - 'A buffer zone can be defined as an area surrounding the property which has restrictions placed on its use to give an added layer of protection'
 - 'The boundaries should include sufficient areas immediately adjacent to the area of outstanding universal value in order to protect the site's heritage values from direct effects of human encroachment and impacts of resource use outside the nominated areas.'
- * Because S.69 gives effect to the convention (which includes the operational guidelines), it appears that it would be within the power of the *NP&WC Act* to regulate activities like gillnetting in the adjacent waters of Queensland in the GBRWHA. This is provided that it is made clear that such action is giving effect to the convention.

Penalties are provided under subsection 71(7) to a fine of \$5000.

The World Heritage Properties Conservation Act 1983 (Cwlth)

The application of this Act to the GBRWHA is extremely limited because

S .12⁴² makes acts listed in sections 9,10, 11, not unlawful if they are authorised under the *GBRMP Act*.

Queensland Legislation

The Nature Conservation Act 1992

- * The *Nature Conservation Act* is the principal *Queensland Act* for the conservation of nature and applies to the whole of the State (S5).
- * With regard to international law, the Queensland Minister for Environment could declare a *World Heritage Area Management Plan* under S. 53 & 54 or an *International Agreement Area* under S.59 over the Queensland territorial waters of Shoalwater Bay and regulate the threat of gill nets to dugongs.
- * Dugongs are protected wildlife under this *Act* at S. 71, and listed as Vulnerable. It is a requirement under this Act that a conservation plan for vulnerable species be prepared under S.54, and regulations to address threatening processes may be made in this way. A draft Conservation Plan has apparently been in preparation since 1994.
- * Because dugongs are listed as Vulnerable in Queensland, the Queensland Minister could issue an Interim Conservation Order under S 102 to remove the threat of gill nets as a short-term measure:

If the Minister is of the opinion that:

- (a) rare or threatened wildlife is subject to threatening processes that is likely to have significant detrimental effect on wildlife, habitat or area, the Minister may make an Interim Conservation Order for the conservation, protection or management of the wildlife, habitat or area.

The MarineParks Act 1982 and Marine Park Regulations 1990.

- * The object of this *Act* is to 'provide for the setting apart of tidal lands and tidal waters as marine parks'

41 Haigh, David (1995) Hinchinbrook-In Defence of World Heritage : Paper delivered at the 'Defending the Environment Conference' Adelaide 20 & 21 May 1995. Pages 21-22, Operational Guidelines for the implementation of the WHA Convention, WHC/2/ revised 1994.

42 S12 makes certain acts not unlawful: ' Nothing in section 9, 10, or 11 renders it unlawful for a person to do an act that is authorised under the *Great Barrier Reef Marine Park Act* 1975 or pursuant to a plan of management in force under the *NP&W Conservation Act*'.

- * marine parks are established under S16, and provisions for zoning made under S. 15.
- * At S.27 of the Regulations, Temporary Restricted Areas may be declared within a marine park where:
 - 1) The Director may if a situation exists which he considers constitutes a risk to human life or a serious threat to the environment, by public notice, declare any area within a marine park to be a temporary restricted area (for up to 120 days, S. 27 (4) (a).
- * Offences and penalties for contravention of provisions of the Regulations are at S 42, and States a penalty of 100 penalty units.

Resolution

It is interesting that the key pieces of legislation for the management of the World Heritage Area and the Commonwealth marine park do not make provision for managers to respond quickly to urgent species conservation matters.

As illustrated, the ability of the Authority to respond quickly under the 'Act' was constrained by the inflexibility of its regulation making power and zoning provisions and illustrates the need for amendment to improve response to such situations. A system of interim orders would be extremely useful.

The obvious emergency option would have been for the Queensland Minister for the Environment to make regulations implementing the agreed net bans by either declaring the intertidal areas of Shoalwater Bay as a Temporary Restricted Area under the *Marine Parks Act* or declaring an Interim Conservation Order under the *Nature Conservation Act*. This action was encouraged by both the Chairman of the Authority and the Queensland Minister for Fisheries who wrote to his Environment colleague stating:⁴³

"Under the *Queensland Fisheries Act* 1994 it is within my power to order a 28 day Order in Council through the Governor to implement a closure as per the agreed outcome. However, I am advised that it would be more appropriate if my colleague the Honourable T Barton, MLA, Minister for Environment and Heritage acts under the *Nature Conservation Act* to put in place a Nature Conservation Order (ICO) , as this act specifically provides for the protection of dugong."

However, there was no action, highlighting the fragility of the current policy agreements for cooperation between the Commonwealth and the State on nature conservation issues. It also raises concern about the discretionary implementation of an ICO by the Minister under *Nature Conservation Act* 1992.

The Federal Environment Minister instructed the Authority to mirror the agreed net regulations under the 'Act', which was opposed by the fishing industry. The action was necessary to allow marine park rangers appointed under the 'Act' to enforce the new regulations which they could not otherwise do because they are not accredited fisheries inspectors under the *Fisheries Act* 1992 (Qld). It was also an important action from the point of view of maximising scarce enforcement resources.

Negotiations with Queensland about joint management of the issue continued to falter, even though dugong mortality continued in state waters of the Bay. Community concern was escalating about the issue, and there was international pressure on the Federal government to take action.

Inevitably, the Authority had no choice but to take unilateral action and use its regulation making powers under a plan of management, (the 'Shoalwater Bay (Dugong) Plan of Management ') to ban the carriage and use of all nets into the area and make it an offence to collect and interfere with dugongs without a relevant permission.⁴⁴ . This option was unusual for the Authority but made possible because access to the Bay by fishers from the land is closed (due to it being a Defence area) and the Authority can control access through the marine park. Although the Commonwealth regulations have greatly limited netting activity, the fact remains that fishers can still move into the Bay during high tide via state waters, to legally set river set and drift nets. Unless Queensland also bans these nets, the loophole and resulting risk to dugongs remains.

43 Letter from the Honourable R.J.Gibbs, Minister for Primary Industries and Minister for Racing (Queensland) to Senator the Honourable J.Faulkner, Minister for the Environment, Sport and Territories , 16/8/95.

44 The Shoalwater Bay (Dugong) Plan of Management was gazetted on the 9th of April, 1997 and the regulations came into force on 1 May 1997. It contains enforcement provisions banning the carriage and use of all nets for the purpose of fishing into Shoalwater Bay, excluding one cast net per fisher for the purposes of collecting bait, and a dilly (a crab pot made with a net). The plan also makes it an offence to collect dugong without a relevant permission, and to interfere with a dugong.

A Clear Case for Adopting” The Precautionary Principle”

The Commonwealth has demonstrated regard for the precautionary principle in taking this action⁴⁵ and the decision is one of a number examples where regard to the ‘principle’ has been given in Australia in recent times.⁴⁶ There is some dissension as to the validity of applying the principle if it is in policy, for example in *Nicholls v Director General of National Parks and Wildlife* (1994) LGERA 397, Talbot J dismissed the precautionary principle in the IGAE because:

‘...they are not legislation....they create no binding obligation upon the Director-General or this court’.

However, in this instance, the ‘principle’ is contained in relevant legislation and such reasoning would not be valid.

A clear precedent for applying the ‘principle’ to endangered species and their habitats was established in *Leatch v Director-General of NPWS and Shoalhaven CC* (1994) ELR 060: in which Stein J argued that:

“...In my opinion the precautionary principle is a statement of commonsense.....It is directed towards the prevention of serious or irreversible harm to the environment in situations of scientific uncertainty. Its premise is that where uncertainty or ignorance exists concerning the nature or scope of environmental harm (whether this follows from policies, decisions or activities), decision makers should be cautious.”

It has been argued that the implementation of the ‘principle’ as a legal standard could have the potential to create interminable forensic argument’, and ‘taken literally in practice might prove to be unworkable’⁴⁷, however as Pearson concludes:

“of all the emerging principles of ecologically sustainable development, it is the precautionary principle which has the greatest potential to impact on how land-use decisions are made since it seems to suggest that in circumstances where environmental harm is a possibility the proponent of development must prove that harm will not occur, rather than any opponent having to prove it will”.

Conclusion and Recommendations

Self regulation by the fishing industry on the incidental capture of dugongs in Shoalwater Bay failed. Although the Authority was entirely reasonable in dealing with the matter in a consultative way in 1994 it would have been in breach of it’s own policies, warnings, and legislative duty to protect the GBRWHA if it had not finally acted to prohibit gill nets.

The fact that it took two years to reach a decision on solutions to an emergency situation should be of great concern to all involved, and action to improve the relevant legislation and processes of negotiated management must follow, if other species in the GBRWHA that are close behind the dugong in their need of urgent protection, are to be responsibly prevented from decline.

Although a plethora of policy on cooperation exists between the Commonwealth and Queensland, the spirit of accord has proved tenuous in this matter, demonstrating the futility of enacting good legislation when there is a lack of political will for meaningful action.

With regard to the issue of Defence presence in Shoalwater Bay, in spite of seemingly incompatible activities, the fact remains that the integrity of Shoalwater Bay’s biodiversity is outstanding relative to the surrounding marine park, most likely because of remoteness combined with the strict regime of closures, surveillance and enforcement. Whilst there are reasonable grounds for concern about some aspects of Defence operations, it can be also argued that the current level of Defence activity has not been as detrimental to the region as other permitted activities, the evidence being that conservation values of the Bay are superior to adjacent areas of the GBRWHA, a fact that is recognised in international law.

45 Great Barrier Reef Marine Park Act 1975. S. 39Z. (1) (b): The Authority in preparing management plans must have regard to: (b) the precautionary principle, and in (2) The Precautionary Principle has the same meaning as in section 3.5.1 of the Intergovernmental Agreement of the Environment: Where there is a threat of significant reduction or loss of biological diversity, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. In the application of the precautionary principle, public and private decisions should be guided by:
(i) careful evaluation to void wherever practicable serious or irreversible damage ; and
ii) an assessment of the risk-weighted consequences of various options.

46 In *Colin Ernest Simpson and Mavis Elvie Claire Simpson v Ballina Shire Council* 1992 , the case was in regard to an appeal against the refusal of the Ballina Shire Council NSW to allow subdivision of an area of land regarded as a ‘sensitive ecosystem’. it was held by Justice M L Pearman in deciding to dismiss the appeal that ‘I also take into account the Precautionary Principle and the Inter-Governmental Agreement on the Environment’.
Leatch v Director-General of National Parks & Wildlife Service (1994) ELR 060; *Greenpeace Australia Limited v Redbank Power Company Pty Limited* (1984) 86 LGERA 143; *Jeffrey Nicholls v Director General National Parks & Wildlife Service* (1994) LGERA.

47 L.Pearson. Incorporating ESD Principles in Land-Use Decision-Making: Some Issues after TeoH. Commentary. Environmental and Planning Law Journal, February 1996. pp.47-53.

If gill netting is finally excluded from the area, marine park management authorities could well benefit from the continued presence of Defence until it has the resources and strategies in place for effective management or Australia adopts the sorts of measures applied in Florida, USA or New Zealand.

Recommendations

That the Great Barrier Reef World Heritage Area boundary be extended to high water mark along the Queensland coast and internal waters.

That a system of Interim Orders be provided under the 'Act' to allow rapid response for urgent conservation issues involving species and ecological communities in the GBRWHA.

That S.66 of the 'Act' be amended to allow for regulations prohibiting the take and interference of listed species in the GBRWHA.

That a schedule of threatened species (aside from fish and invertebrates) be included in the Regulations.

That future rezoning of the GBRWHA exclude gill netting from sensitive dugong habitat (and other susceptible species).

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