Waves

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Global reflections on marine protected areas

John B. Davis, Editor-in-Chief, MPA News

The tide of international political support for marine protected areas (MPAs) is rising. Global leaders at the 2002 World Summit on Sustainable Development committed to establishing representative networks of MPAs worldwide by 2012, a target similarly embraced by leaders at the World Parks Congress (2003) and World Conservation Congress (2004). Regional fisheries management bodies under the UN Food and Agriculture Organization, historically sceptical of the use of MPAs as management tools, have begun voicing support for MPAs and the 2012 target for representative networks. Several national governments have established plans to create their own MPA networks, with some of them committing to set aside certain percentages of their waters as no-take marine reserves.

What has caused this momentum? Much is due to emerging scientific opinion on the benefits of MPAs, including no-take marine reserves. It is now generally accepted by scientists that such reserves can help maintain biodiversity, protect unique areas, conserve essential habitat, and serve as control sites for fisheries management. With evidence that overfishing continues worldwide for many target species despite application of traditional management tools, policy makers appear willing to give MPAs a try. The drumbeat in recent years of several well-publicised consensus statements from researchers and conservationists on the need for more MPAs has likely spurred some of this progress.

There remains debate within the field, however, on the extent of the benefits conferred by marine reserves. A long-held theory that no-take areas can help enhance nearby fished areas – through export of larvae and spillover of adults – is still largely unproven, according to many researchers, primarily due to

Lord Howe Island, Marine Park and World Heritage Area. Photograph courtesy of the Australian Marine Conservation Society.

The Marine & Coastal Community Network

Natural Heritage Trust
Helping Communities Helping Australia

the challenge of applying rigorous scientific methods to the dynamic ocean environment. The lack of firm evidence that reserves will increase catches raises issues regarding site-planning with communities. That is, what assurances can safely be made to fishing communities regarding the anticipated effects of a proposed reserve? Some planners believe it is prudent to stop short of promising greater catches. Other planners are willing to make that promise, based on their belief in the theory of reserve effects on fisheries. The long-term impacts of such promises on community support for reserves remain to be seen.

There is also debate on the appropriateness of percentage-based targets in the planning of MPA networks. Used for years in terrestrial protected area planning, such percentages can serve as useful gauges of progress toward a conservation goal over time. In the MPA field, where such targets have been applied as goalposts in various reserve-planning processes – for example, aiming to set aside 20% or 30% of a site as no-take – some practitioners have criticised their use as unrigorous and arbitrary, particularly when applied without explicit study of the needs of resident species. Proponents of such targets, however, point to studies worldwide over the past decade in which habitat protection requirements for several species have been calculated, with many in the 20–30% range. Again, this debate holds implications for community-based MPA planning. If stakeholders believe that proposed percentage-based targets are greater than is scientifically justified for their particular area, or do not take socio-economic factors into consideration, they will oppose them.

Much of the political focus on MPAs – and marine reserves in particular – has been on their use to help combat overfishing and the habitat impacts of fishing. Many in the commercial and recreational fishing sectors argue justifiedly that similar attention should be paid to other ocean threats, such as pollution (including noise pollution), coastal development and climate change. Indeed, these issues pose major challenges for MPA planners and managers. The fact that resources inside even the best-managed MPAs can be affected by runoff from land, or by removal of coastal fish-nursery habitat by nearby towns, points to the need for integrated coastal management, with MPAs as part of it. The threat of climate change requires MPA planners to anticipate migration of habitats and species over time, and to adopt management measures such as flexible boundaries or replicative sites. Managers of existing MPAs must work with coastal communities to minimise environmental stressors that can accentuate the effects of climate change. These issues should receive greater attention from MPA practitioners in coming years.

One of the most promising global MPA developments has been the increasing focus on measuring management effectiveness, i.e. whether existing sites are achieving their goals. Several national and regional projects are working with managers to apply simple metrics to their sites. The findings are being used to instruct managers on issues to address, and to share lessons learned among MPAs. The attention being paid to optimising existing MPAs, rather than only creating new ones, is a sign of maturation for the field. It bodes well for the ecosystems and human communities that depend on these protected areas.

MPA News *is the global newsletter on planning and management of marine protected areas, with subscribers in more than 100 countries. To view issues or search an updated calendar of MPA-related conferences worldwide, please visit www.mpanews.org*

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MCCN and MPAs

Tony Flaherty, MCCN

For over 13 years, the Marine and Coastal Community Network (MCCN) has been facilitating community discussion on marine protected areas (MPAs) and has provided a catalyst for community input and support. The MCCN is arguably one of the most longstanding nationally coordinated projects focused on community participation in the marine environment and MPAs anywhere in the world. It is a network often looked upon enviously in discussions with overseas agencies and NGOs.

School of Old Wives at Second Valley. Photograph by James Brook.

The MCCN had its genesis at the 1991 Fenner Conference on Protection of Marine and Estuarine Areas, held by the Australian Academy of Sciences. That conference gave broad support to a proposal that the Commonwealth Environment Minister allocate funds to non-government organisations (NGOs) for an NGO maritime conservation promotion network across Australia, similar to the Threatened Species Network.

The recommendations from the Fenner Conference emphasised the importance of full and vigorous public participation at all stages of MPA decision-making and implementation. The conference recognised that effective public participation requires:

- transparency in government decision-making;
- a well-informed community;
- full access to relevant information;
- recognition of the key role of NGOs;
- adequate resources in order to ensure participation;
- action and involvement at the grassroots (in addition to umbrella type organisations); and
- full involvement of all sections of society, including Indigenous people and marine environment users.

At the time, community awareness and support for a national system of MPAs in Australia was low. However, it was believed that through community education and involvement, a sense of community ownership, stewardship and empowerment would be created – ultimately leading to successful marine conservation through an effective MPA system.

In 1991 the Australian Government established the Ocean Rescue 2000 program, to address the conservation and sustainable use of Australia's marine environment. This program made funding available to establish the MCCN. The Australian Littoral Society (now the Australian Marine Conservation Society) was contracted by the federal Department of Environment to establish and coordinate the network. By providing support for the MCCN, the Australian Government was responding – and continues to do so – to a significant community need and a hiatus in MPA and marine and coastal management.

The MCCN's initial task was to identify and bring together the many stakeholders, community groups and individuals interested in ensuring that we have clean and healthy oceans and coasts. From humble beginnings, MCCN's support base now includes not only conservation and community groups across Australia but, as reflected in hundreds of letters of support, other stakeholders such as commercial and recreational fishing bodies and local and state government.

Since its inception 13 years ago MCCN has continued to grow – as witnessed by our ever-increasing mailing list, now numbering over 10,000 participants. The role of MCCN with regards to MPAs has also evolved over this time, from a simple information provision service to fulfil more complex networking roles such as assisting coordination of data collection and organising scientific contacts for surveys.

The number of organisations and individuals beginning to openly support MPAs also continues to grow. Most industry bodies have added their 'in principle' support for MPAs although issues – including the methodology of establishing MPAs, compensation, levels of protection and management – are still strongly debated.

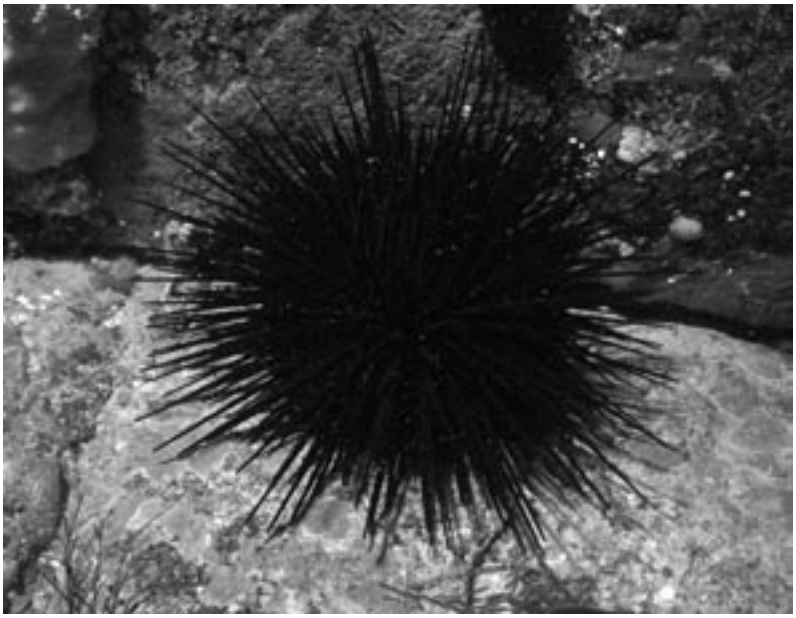
MCCN played a significant role in the grassroots facilitation of MPAs in Australia. However, there is still much work ahead to progress towards a national representative system of MPAs, and MCCN believes there are substantial opportunities for promoting MPAs and broader marine and coastal conservation initiatives (such as work on community engagement in coastal policies, oceans policy and the regional Australian Natural Resource Management frameworks). With adequate resourcing to maintain an effective network, MCCN hopes to be able to continue its contribution to MPAs, and marine conservation in general, well into the future.

Monitoring and MPAs

Dr Neville Barrett, Tasmanian Aquaculture and Fisheries Institute, University of Tasmania

There are as many ways and reasons to monitor marine protected areas (MPAs) as there are justifications for creating them, and of course the two subjects are strongly related. The major focus of MPAs in Australia is presently the conservation of biodiversity, and current monitoring programs focus heavily on that. However, the role of MPAs as reference areas for fisheries management, for promoting ecotourism, for education or for a host of other reasons, are equally important to some stakeholders and also require some form of monitoring to ensure that their intended roles are met.

From the biodiversity conservation perspective, an ongoing monitoring program is essential as it will not only tell us if the intended biodiversity protection is occurring, it will also tell us to what extent biodiversity is being influenced outside the MPAs by human activities. This in turn provides vital information for the conservation management of our remaining waters, given that it is highly unlikely we will ever have enough coastline in MPAs to ensure that our marine and estuarine biodiversity is adequately conserved by MPAs alone.



MPAs providing answers, including: Why are Longspine Urchin populations increasing along the east coast of Australia? How much of the spread is a natural phenomenon and how much is due to the commercial exportation of their predators? Photograph by Neville Barrett.

From the author's perspective, MPAs provide us with an invaluable reference role. If they show us that the remaining coastline is being degraded, and we can put a reliable estimate on the extent of that, we should be well armed to identify those causes of degradation and respond accordingly. MPAs should not be a series of oases in a sea of man-made desert; they need to form part of a 'whole of coast' approach to sustainable management of our natural heritage.

Part of the current problem with trying to monitor and identify such patterns is the delay in implementing the National Representative System of MPAs in many States. You cannot have an adequate monitoring program without an adequate representation of MPAs. Where MPAs have been declared in the recent past it is true to say that monitoring programs have generally been well supported by management agencies throughout Australia, subject of course to the restricted levels of funding available.

In Queensland, a long-term monitoring program has been examining broad-scale annual changes in the Great Barrier Reef for the past 13 years. In New South Wales, most MPA monitoring is usually facilitated through collaborative projects by on-ground MPA biologists. In Victoria, the recently established comprehensive MPA network has been backed up with an extensive reef monitoring program to ensure that performance objectives are met. In Tasmania, a long-term program continues in the existing reserves and is being established in new reserves with a combination of government funding and research grants. In South Australia, within the new Great Australian Bight Marine Park, annual monitoring includes distribution and abundance of Southern Right Whales and biological surveys in the benthic protection zone. In Western Australia, with almost half of Australia's coastline, existing programs include shallow-water coral community monitoring at the Rowley Shoals and Ningaloo Marine Parks, shallow-water seagrass and macroalgal community monitoring at the Shark Bay and Marmion Marine Parks, and biodiversity monitoring at the Jurien, Marmion and Shoalwater Islands Marine Parks.

In the temperate zone, one of the most important monitoring developments has been the standardisation of reef flora and fauna census methods in a wide range of declared and proposed MPAs stretching from WA, through SA, Victoria, Tasmania to NSW. Using proven techniques developed in the long-running Tasmanian study, the standardised approach will allow direct comparison of results from MPAs across Australia, and allow reliable comparison of patterns and processes operating at this scale.

Certainly the bulk of studies so far have concentrated on the reef systems (rocky and coral) found within our MPAs. This is primarily due to these systems being subject to intense and obvious human impacts through fishing, and the subsequent secondary, cascading ecosystem effects this may cause. However, there are many other areas where monitoring programs may be required depending on the habitats represented within each MPA, the degree and type of human impacts in the region, and the range of species encountered there. These include extent and condition of seagrass, abundance of whales, visitor numbers, extent of compliance, water quality, seabirds and estuarine mudflat infauna.

For managers the difficult decision to make is how to prioritise the allocation of sparse funding resources among the many information needs we have, and how to value-add to this through collaborative projects without compromising the long-term vision needed to continue such projects through time. In many cases MPAs may take several decades to return to a 'natural' state following protection, and both vision and patience are required to adequately document this process and to respond to challenges the results may present for both conservation of biodiversity and other related MPA goals.

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MPAs on the high seas – turning words into action

Alistair Graham, Tasmanian Conservation Trust

In June 2005, the author attended the Convention on Biological Diversity (CBD) Protected Areas Ad Hoc Open-Ended Working Group in the Tuscan spa town of Montecatini (someone has to do it!), as part of the WWF delegation. How to set up and manage marine protected areas (MPAs) on the high seas was an agenda item.

Recent revelations of the surprising cornucopia of life to be found in the deep seas – especially on and around seamounts and other bottom structures – are driving governments to extend MPA networks to the high seas. The only trouble is that while governments are securely in control of their sovereign rights on land within their jurisdiction, they have to rely on adherence to the UN Convention on the Law of the Sea (UNCLOS) to exercise their jurisdictional rights over their maritime areas (territorial seas, exclusive economic zones) and activities (shipping, fishing, mining etc.). When negotiating UNCLOS a generation ago, the most important consideration for governments was to make sure they did not go too far in restricting customary high seas freedoms.

Therefore, the main issue for governments wanting to establish MPAs on the high seas is how to construct a governance regime that will legitimise management arrangements, let alone get agreement and ensure compliance with them, which inevitably means further constraints on high seas freedoms. Working out where to put MPAs is the easy bit, but what happens then?

Governments are generally happy with the idea that the CBD provides the appropriate framework for synthesising information that would justify MPA designation, but leaving it to a bunch of crusading scientists – backed by conservation agencies in thrall to non-government organisations (NGOs) – to decide where and how big those MPAs should be was a scary idea for some. The CBD Secretariat will collate such information over the next few years, but that's as far as it goes.

Discussion of options on how to deal with this touchy issue of controlling maritime activities to deliver MPA management is still at an early stage, but the answer may lie in identifying existing international bodies with management responsibility for a particular maritime activity. The International Maritime Organization (IMO) has the power to adopt restrictions on merchant shipping (such as those applying to pilotage of the inner reef of the GBR); the Food and Agriculture Organization of the UN (FAO) is the accepted international forum for negotiating arrangements for managing fishing activities; and the International Seabed Authority has the mandate to control seabed mining beyond national jurisdiction.

Putting this institutional jigsaw puzzle together in a coherent and workable regime, whereby a high seas biodiversity can be safely protected, is obviously going to be a challenge – to put it mildly. In anticipation of such complications, the UN General Assembly 2004 agreed on two important things:

a) to set up its own Open-Ended Working Group to look at governance questions (first meeting in February 2006); and
b) to improve coordination between international bodies with an interest in oceans matters (known as UN-Oceans).

The big issue at stake is to what extent can or should high seas fishing activities be restrained for conservation purposes. Thus, there is much interest in the extent to which Regional Fisheries Bodies (RFBs), including Regional Fisheries Management Organisations and other arrangements like the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR), have the potential to deliver the control needed to impose and ensure compliance with the full range of measures (including MPAs) deemed necessary to have properly run high seas fisheries. A framework for the negotiation of such bodies was created following the Rio Earth Summit by the adoption of the UN Framework Agreement for the Management of Straddling and Highly Migratory Fish Stocks (FSA).

At the last FAO Committee on Fisheries meeting in March, it was reluctantly agreed to support the idea of reviewing the extent to which these RFBs could do the job; coincidentally, next year the FSA is up for review. There is considerable interest among governments, NGOs and fishers in exploring the extent to which these RFBs could be expanded in both mandate and geographical coverage to form a global network of regional ocean management bodies – capable of delivering the whole suite of management controls needed for ecosystem-based, integrated oceans management!

An exciting innovation in this regard is the Australian and Chilean Governments' recent decision that they would negotiate a new regional management arrangement – stretching right across the South Pacific. This is a great idea, and NGOs have an opportunity to work with the foundation governments involved, negotiating a model, regional arrangement that builds on our 25 years of experience with CCAMLR.

Albatross in southern Australian waters. Photograph by Prue Barnard.

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Alistair Graham is currently working as a consultant to WWF (International) on high seas governance reform.

Avoid, Assist, Acquire – compensation and financial assistance programs in Australian MPA establishment

Joan Phillips, Department of Sustainability and Environment, Victoria

Securing community and political support for the establishment of marine protected areas (MPAs) involves addressing potential economic impacts, particularly for commercial fisheries.

The commercial fishing industry can experience financial loss if access to fishing grounds is reduced through the designation of no-take MPAs. That this potential impact may fall disproportionately on different industry sectors or particular individuals makes it politically imperative for governments to address the issue of assistance. Depending on the scale of the proposal, there may also be real concerns for the sustainability of the remaining fishing grounds after closures are implemented.

Globally, the attention paid to displaced fishing effort and structural adjustment relative to MPAs in Australia is unusual. In *MPA News* Vol. 3, No. 11, June 2002, Davis commented that financial compensation was fairly novel, and 'to gain fishermen's support for reserves, some politicians have taken a new tack: namely, subsidising or compensating the fishermen affected by the new closures'.

Various approaches have been taken in Australia to resolve ecological, economic and social issues resulting from potential displacement of commercial fishing effort following MPA establishment. These include negotiation with industry to avoid impacts, structural adjustment and financial programs, direct buy-out of fishing effort through purchase of catch quota/licences, or a combination of the above.

Avoid…

Avoidance is the predominant method used to reduce impacts on commercial fishing. Although the fishing industry may be understandably sceptical, every MPA practitioner knows that minimising impacts on commercial fisheries is one of the first criteria considered in MPA selection.

In Victoria, where the process of establishing a representative system of highly protected marine national parks and sanctuaries was carried out over more than ten years, various iterations of the proposals attest to attempts to reduce the impact on commercial fishers in response to industry information.

In Tasmania in 2004, two large MPAs were designated in sites that the Tasmanian fisheries agency believed were not significant fishing grounds. The Tasmanian fishing industry conceded later that the government had accounted for some of its concerns.

Impacts may also be avoided or deferred through a phase-out period. In Victoria, fishing was allowed to continue for an additional 18 months in four marine national parks and one sanctuary of particular importance to the fishing industry.

Assist…

Overwhelmingly, jurisdictions attempt to configure MPAs to minimise fishing industry impacts while still achieving biodiversity objectives. The Victorian Government, in establishing its system of marine national parks and sanctuaries in 2002, adopted the position that various fisheries could adjust to the new regime over a period, and this process would be assisted. The government's view was based on the relatively modest scale of its no-take areas, 5.3% of state waters, and data on fishing stocks and catch/effort.

For various reasons governments often go to great lengths to avoid using the term 'compensation'. Although in Victoria it is genuinely an assistance scheme, the government has chosen to interpret the term 'compensation' as making a suitable payment in return for loss.

The Victorian Government determined to assist some fisheries for loss of catch and increased operating costs incurred, such as having to travel further. This scheme is available for three and a half years to individuals in specific fisheries with a catch history in the area of the marine national park or sanctuary, who can demonstrate such loss. Interim payments are available in the case of financial hardship. Claims are assessed by an assessment panel (including an industry member), and appeals are available through a tribunal.

Early analysis of the scheme indicates relatively low payouts (less than $0.5 million to date), with payments for increased operating costs making up almost 80% of payments. No interim payments for financial hardship have been made. No assessments have been appealed.

Financial assistance is not the only assistance used in Victoria. With industry support, the valuable abalone fishery was assisted through a substantial boost in fisheries enforcement, targeting abalone theft.

In the Commonwealth jurisdiction, part of the commercial fishing assistance package associated with implementing the new Great Barrier Reef Marine Park (GBRMP) zoning scheme was significant one-off payments for business restructuring.

Acquire…

Where concerns about the continued viability of a fishery exist – resulting from displaced fishing effort following the establishment of no-take MPAs – buy-out of effort/catch may be considered. Fisheries agencies use these tools to manage fisheries potentially vulnerable to overexploitation. Individuals may be assisted to leave the industry through licence purchase, thereby permanently removing fishing effort.

In NSW, catch quota/shares may be purchased as part of the strategy for minimising the impact on a fishery from establishing MPAs. A recent additional NSW strategy is the voluntary buy-out of commercial fishers. In WA, legislative provisions are available to compensate commercial fishers for loss resulting from MPAs – amounting to a buy-out of all or part of a licence. These provisions, available since 1997, have not been used.

Part of the Commonwealth Government's recent comprehensive fishing industry assistance program for the GBRMP included the buy-out of 118 licences with GBRMP catch history.

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Commonwealth MPAs and the National Representative System of Marine Protected Areas

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There are only a few countries in the world that have taken on the challenge of establishing a comprehensive, adequate and representative system of marine protected areas (MPAs) for their entire marine jurisdiction. Australia has been at the foreground of MPA development, and in 1975 declared the Great Barrier Reef Marine Park under the *Great Barrier Reef Marine Park Act 1975*.

Since that time a further 13 MPAs have been established in areas of known high biodiversity significance in waters managed by the Australian Government. These MPAs are managed as Commonwealth reserves under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), and are managed by the Australian Department of the Environment and Heritage (DEH). The Commonwealth reserve system includes tropical MPAs at Ningaloo Reef, Mermaid Reef, Cartier and Ashmore Reef, Coringa-Herald and Lihou Reefs; temperate MPAs in the Great Australian Bight, Solitary Islands, Elizabeth-Middleton Reefs, Lord Howe Island and Tasmanian Seamounts; and sub-Antarctic MPAs at Macquarie Island and Heard and McDonald Islands. These MPAs protect identified biodiversity conservation values under a variety of World Conservation Union (IUCN) management categories listed under the EPBC Act, ranging from strict nature reserves (IUCN Category Ia) to managed resource protected area (IUCN Category VI).

The State and Territory Governments have also been active in establishing MPAs under their jurisdictions. By 2002, Commonwealth, State and Territory Governments had established MPAs covering approximately 64 million hectares of Australia's marine jurisdiction, excluding the Australian Antarctic Territory.

Despite the achievements to date, a number of gaps remain in Australia's distribution of MPAs, especially in deep-water and cooler temperate oceans. The priority is to establish MPAs in large-scale bioregions that are not already represented within the National Representative System of Marine Protected Areas (NRSMPA). In 1991 all Australian governments agreed to work together to set up the NRSMPA, to promote the development of MPAs throughout Australia's entire marine jurisdiction. The NRSMPA is being developed in accordance with guidelines developed by the Australian and New Zealand Environment and Conservation Council. Australia's commitment to this approach is confirmed in Australia's Oceans Policy (1998) (www.oceans.gov.au/home.jsp).

At IMPAC1 2005, the Marine Protected Areas Taskforce of the DEH will present a paper describing the approach the Australian Government is using to design a network of representative MPAs across 2 million square kilometres of offshore waters in the South-east Region.

The program in the South-east Region began in 2002 and is the first time large-scale, offshore regional marine planning has been used to support the development of representative MPAs. The process has so far resulted in MPA options for two candidate MPAs in Commonwealth waters covering more than 40,000 square kilometres: one south of Kangaroo Island (the Murray option); the other west of Tasmania (the Zeehan option). It has also produced effective cross-sectoral consultative forums and networks, new policy approaches to MPA development as well as innovative ways of integrating diverse stakeholder interests and scientific information into MPA design, including important scientific challenges that have emerged as a consequence of open dialogue with industry groups.

Significant work remains to be concluded with nine more areas in the South-east Region to be sampled for inclusion in the MPA system. This work will be supported by a fishing risk assessment and a socio-economic assessment. Scientific input to the process will be provided through a Scientific Reference Panel and a Scientific Peer Review Panel. The challenges primarily lie in dealing with the limits of the information base, managing the sheer scale of the process and ensuring effective conflict resolution and communication across the oil and gas industry, the commercial fishing industry, conservation groups as well as shipping, recreational fishing, tourism and Indigenous interests.

The methodology being developed in the South-east is important given the long-term implications of the approach to the future development of MPAs, as regional marine planning unfolds around the Australian Exclusive Economic Zone.

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Full article and references available on the MCCN website: www.mccn.org.au

MPA Score Card website

Source: www.icriforum.org/mpa/MPAeffectiveness.html

The World Summit on Sustainable Development (WSSD), which concluded in September 2002, adopted a series of targets on priority environmental and natural resource themes to be achieved through partnerships between developed and developing country members. One of these was for the establishment of representative networks of marine protected areas (MPAs) by 2012. Implicit in this target is the effective management of MPAs so that they achieve their conservation objectives and contribute to the larger-scale ecosystem approach for managing coastal and marine resources, also embraced by the WSSD.

The development of a Score Card to be used by MPA managers to assess their progress and to report on this in a standardised way is consistent with the WSSD target and with the reporting needs of institutions like the World Bank. The Score Card will allow evaluating and reporting on the performance of World Bank investments in MPAs to its shareholders and other partners, such as the Global Environment Facility. It also may serve as a useful tool to other practitioners and institutions involved in MPA management.

The Score Card was prepared for the World Bank.

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Towards a global framework – Australia's progress in achieving an NRSMPA

Graeme Kelleher, AO, Hilary Sullivan, DEH and Nancy Dahl-Tacconi, DEH

Introduction

Over the past three decades Australia has made great progress towards creating a National Representative System of Marine Protected Areas (NRSMPA) – an important contribution to the World Conservation Union's (IUCN) goal of establishing a global, representative system of MPAs. This IUCN goal was recently reinforced in various international decisions, including:

- a commitment in the World Summit on Sustainable Development (WSSD, 2002) to achieve this goal by 2012;
- various decisions by the United Nations General Assembly;
- development of a major emphasis on MPAs in the Conference of Parties of the Convention on Biological Diversity; and
- a commitment to the 2012 target at the World Parks Congress in 2003, and at the World Conservation Congress in 2004.

MPAs are defined by the IUCN – a definition now widely accepted globally – as 'any area of intertidal or subtidal terrain, together with its overlying water and associated flora, fauna, historical and cultural features, which has been reserved by law or other effective means to protect part or all of the enclosed environment'. The term 'representative' applies to what are called bioregions – biogeographic, ecosystem or habitat types.

The IUCN's Guidelines for Protected Area Management Categories list six categories, ranging from very strictly protected MPAs or zones managed mainly for science or wilderness protection (Category I), to a category that aims to achieve sustainable use of natural ecosystems (Category VI).

There are two general approaches to establishing MPA systems or networks: either as a few large multiple-use areas (usually Category VI), which contain strictly protected areas (usually Category I–II) within them (e.g. Great Barrier Reef Marine Park); or as many relatively small sites, each strictly protected (e.g. Victoria's marine national parks and sanctuaries).

To conserve biodiversity, both approaches should occur within an effective program of ecosystem management, covering the marine ecosystem and the land that affects it. Australia has applied both these approaches in its progress towards integrated ecosystem management, through the application of the CAR principles – comprehensiveness, adequacy and representativeness.

Under the *Offshore Constitutional Settlement 1979*, primary responsibility for management (including MPAs) of Australia's then 3 nm Territorial Sea was delegated to the States and Territories, except for the Great Barrier Reef (GBR) Region, where the Commonwealth retained primary responsibility. This delegation was subject to the qualification that State and Territory powers (including legislation) must not conflict with constitutionally valid provisions under Commonwealth law. The Commonwealth retained responsibility for Australia's 200 nm Exclusive Economic Zone beyond the Territorial Sea.

Australia's progress

Until 1992, the States, Territories and Commonwealth operated largely independently on MPAs. This changed with the establishment of the National Advisory Committee on Marine Protected Areas (NACMPA) under the Australia and New Zealand Environment and Conservation Council.

MPA Task Force

Since 1992, the Task Force on Marine Protected Areas (TFMPA), originally the NACMPA, has coordinated the development of the NRSMPA in Australia's jurisdictions (except the GBR).

Initially the TFMPA focused on classifying the range of coastal and offshore environments to provide a rigorous basis for locating representative areas. Government agencies commenced detailed mapping programs and developed strategies for declaring representative systems, often with Commonwealth assistance provided under Ocean Rescue 2000 and the Natural Heritage Trust.

In the late 1990s the TFMPA developed two key tools:

1 The Interim Marine and Coastal Regionalisation of Australia. The scheme's mesoscale (100s – 1000s km) classification of the Australian continental shelf is the basis for identifying representative systems. Agencies seek to locate new MPAs in bioregions currently without MPAs. In doing so, they aim to sample a wide range of habitats, using habitat diversity as a surrogate for biodiversity. Recently the Commonwealth developed additional offshore regionalisations as part of regional marine planning and the rezoning of the GBRMP.
2 Comprehensive ecological criteria and socio-economic considerations for identifying and selecting MPAs as part of the NRSMPA.

In 1999, the TFMPA published the *Strategic Plan of Action for the National Representative System of Marine Protected Areas*; a plan that identified tasks for completion by 2001. Relevant agencies have contributed to the implementation of this plan, although there are still a number of outstanding actions, such as TFMPA improving the disparate MPA nomenclature.

Commonwealth

The National Oceans Office was formally established in 1999, with responsibility for developing and implementing Australia's Oceans Policy – especially regional marine planning which includes MPA systems – around Australia except for the GBR, which continues to be managed by the GBRMPA.

State and Territories

With no legal requirement for States and Territories to coordinate their processes for establishing representative systems of MPAs, each jurisdiction has generally adopted its own approach. In Queensland, the MPA system is fully compatible with the GBRMP.

In the States and Territories, the establishment of a system or network of MPAs has proceeded gradually – usually one MPA at a time. However, in 2003 Victoria established a significant network of highly protected MPAs.

The future

Even if the NRSMPA is not fully achieved by the 2012 target date, the prospects for the next few decades are relatively good.

Already, Australia is seen as the world leader in the MPA field. Apart from our historical achievements, we also benefit from an enormous coastline with a relatively low population and a comparatively high level of development and wealth, which allows us to protect the marine environment. Also, our

communities are committed to environmental protection, even if individual activities may be restricted. Conversely, in the United States freedom of the individual often prevails over community or ecological welfare.

Australia has always encouraged the international community to accelerate the development of a global representative system of MPAs, and has developed and disseminated guidelines and databases to aid that development. The next opportunity our nation can take is to build on IMPAC1 2005, the first international MPA congress, and hasten attainment of the WSSD target, both within Australian waters and in the high seas (Australia chairs the World Commission on Protected Areas Task Force on High Seas MPAs).

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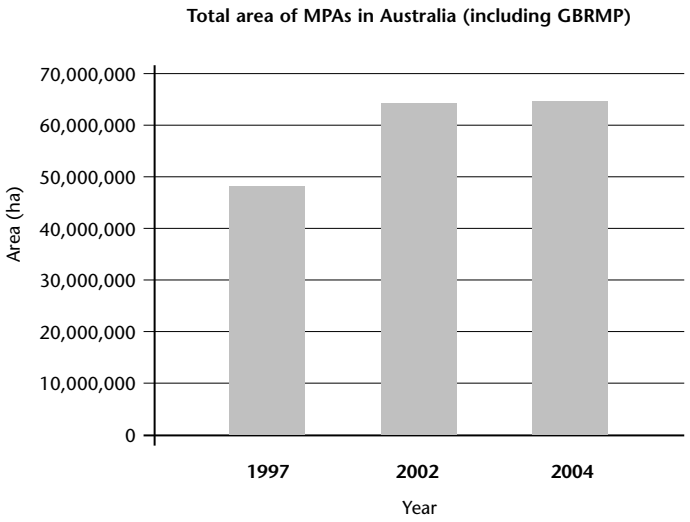
Full article and references available on the MCCN website: www.mccn.org.au



Great Barrier Reef – continuing to set benchmarks in marine conservation

David Briggs, Environmental Planner

The declaration in July 2004 of 33% of the Great Barrier Reef (GBR) in highly protected zones, as part of the comprehensive representative areas program (RAP), has been widely acclaimed as the new benchmark for the conservation of marine ecosystems. As detailed below, this is not the first time that management of the GBR has set a benchmark for natural systems management and planning.

The Great Barrier Reef Marine Park (GBRMP) was the world's first declaration of a large-scale marine park to be based on an ecosystem management approach. This bold 1975 initiative included the banning of oil drilling and exploration.

The concept of zoning a marine system that permits sustainable multiple-use was first implemented in the GBRMP – allowing management of reasonable activities and separating conflicting uses. It facilitates integrated coastal zone management by complementing terrestrial national parks with adjacent marine highly protected zones, and assists complementary assessment of coastal development proposals.

The Great Barrier Reef Marine Park Authority's early public consultation process set new standards, with mandatory two-phase consultation and active information dissemination. The Authority continues to improve those standards, culminating in the enormous effort associated with the RAP. This is an excellent example of continuous organisational learning – fundamental to adaptive management.

The inter-governmental arrangements for management of the GBR have overcome jurisdictional uncertainty. This level of cooperation was unprecedented in Australia and its survival is evidence of the value placed on the GBR by successive governments, as demonstrated by the Queensland Government in maintaining management arrangements complementary to the new GBRMP zoning plan.

The declaration of the GBR as a World Heritage property in 1981 was the first time a listing embraced a whole region rather than an individual site. It remains the largest World Heritage Area and is only one of a handful nominated for all four natural criteria.

The 25 Year Strategic Plan for the GBR World Heritage Area (1994) set a new benchmark for stakeholder participation in decision-making. The strategic plan set out the direction for management beyond the first round of zoning, including better management of land-based impacts on water quality, the RAP and enhanced stakeholder engagement.

Queensland's State Coastal Management Plan is a visionary and comprehensive coastal policy that will guide sustainable coastal development adjacent to the GBR. The Reef Water Quality Protection Plan articulates both the Australian and Queensland Governments' commitment to reversing the decline in water quality entering the GBR, sending clear messages to landholders about their downstream responsibilities. These are fine examples of integrated coastal zone management.

The RAP process and new zoning network have significantly raised the benchmark for marine conservation, establishing an agreed set of principles for marine ecosystem management and applying them to the best science available in order to produce management options. Add exhaustive public consultation to those options and you get world's best practice planning, winning the highest praise from the global community.

Increasing the area of highly protected zones from 4.5% to over 33% signals a strengthened commitment to the conservation of this important resource. It embraces the concept of enhancing natural system resilience to cope with global scale change, and is a concrete response to the threats of sea temperature rise and sea level rise.

In a relatively short time so much has happened in the management of the GBR. However, continuous improvement is essential to keep abreast of local and global pressures on the ecosystem. It is this commitment to continual improvement that gives the GBR, as well as the local communities and industries, the best possible chance to survive for future generations' use and enjoyment.

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NRSMPA – policies, planning and science

Dr Karen Edyvane, University of Tasmania

The island continent

As the world's largest island, Australia's Ocean Territory is one of the largest marine jurisdictions in the world (16.1 million km^2), including external territories in the Indian Ocean, South Pacific, Southern Ocean and Antarctica. Australia's marine biodiversity extends from the tropics to the Antarctic. All major groups of marine organisms are represented, with many containing globally significant marine biodiversity (mangroves, seagrasses, corals, macroalgae, cetaceans, seals), and also very high endemism (>90%), particularly in southern temperate waters. Australia has the world's largest areas and highest species diversity of tropical and temperate seagrasses, largest area of coral reefs, highest mangrove species diversity and third largest area of mangroves.

Australia's tropical environments occur within the global epi-centre of marine biodiversity and contain regionally threatened biodiversity and species (e.g. turtles, Dugong). Australia's mid-water, outer-shelf and offshore deep-water marine environments are less well understood, and include seamount fields, extensive deep-sea canyons and biologically active, mid-ocean ridge systems (e.g. Macquarie Ridge and South Tasman Rise). Intensive surveys have recorded only 5% of the Australian ocean's physical terrain, and less than 2% of its life and habitats.

Progress on the NRSMPA

Significant progress has been made on the establishment of a National Representative System of Marine Protected Areas (NRSMPA) in Australia's Exclusive Economic Zone.

Table 1: Australia's MPAs (2005)

JURISDICTION	TOTAL MPA AREA (ha)	% OF TOTAL MPA AREA	NUMBER OF MPAs
Australia	69,818,392	100%	214
Commonwealth	61,663,403	88.3%	31
State/Territory	8,154,989	11.7%	183

Marine Protected Areas (MPAs), and high levels of protection, are generally well established in tropical (and subtropical) regions, where marine tourism has been a major economic driver, but poorly established in Australia's cool temperate regions (where fishing and petroleum industries dominate).

Table 2: State/Territory MPAs (2005)

JURISDICTION	TOTAL MPA AREA (ha)	% OF STATE WATERS
Queensland (Qld)	5,789,523	54.4%
Western Australia (WA)	1,475,763	12.8%
New South Wales (NSW)	164,374	19.1%
South Australia (SA)	318,719	5.3%
Tasmania (Tas)	128,888	5.5%
Victoria (Vic)	60,716	5.5%
Northern Territory (NT)	223,946	3.02%

Despite the national (and international) initiatives to establish an NRSMPA over the past decade, several jurisdictions have failed to establish MPA systems recently, e.g. NT and SA. Establishing MPAs for fisheries management goals is strongly resisted, despite long-term monitoring of Australian MPAs showing strong conservation/fisheries benefits. In all jurisdictions, there is a need to explicitly recognise fisheries benefits of MPAs and engage fisheries stakeholders (and managers) in regional MPA planning.

NRSMPA policies and planning

National

There was limited progress by the Taskforce on Marine Protected Areas (TFMPA) and the Commonwealth in undertaking the nationally agreed Strategic Plan of Action for the NRSMPA (SPA). Of the 34 SPA actions to be implemented in 1999–2001, only 9 were completed. The lack of progress was largely due to a lack of TFMPA resources, and the move by the Commonwealth (under Australia's Oceans Policy) to implement the NRSMPA through regional marine planning (RMP).

States/Territory

Progress on implementing the NRSMPA by State and Territory jurisdictions has been assisted by the development of formal policy frameworks for representative systems of MPAs in WA, Tasmania, Victoria, NSW and SA. Queensland has failed to finalise its draft strategic policy, while the NT has yet to develop a specific, strategic and representative MPA policy framework. The planning/establishment of the NRSMPA has generally been successful in jurisdictions that have adopted independent, statutory planning processes (i.e. WA, Victoria and NSW).

The States and the NT have generally adopted predominantly 'science-driven' approaches to MPA system planning, with a clear separation of an identification process (applying ecological criteria by scientific experts), and the selection phase (applying socio-cultural and economic criteria in consultation with stakeholders). Some jurisdictions (e.g. WA, SA) have developed scientific methodologies (qualitative and quantitative) to assist MPA identification, selection and prioritisation.

Commonwealth

Recent MPA system planning in Commonwealth waters has adopted a predominantly 'stakeholder-driven' approach. The South-east Regional Marine Plan (SERMP) uses key stakeholders to develop candidate MPA options. Consequently, the current SERMP MPA proposals include limited areas of the continental shelf; exclude all major fishing areas; and fail to protect major oceanographic features (e.g. upwellings) and areas of high productivity/biodiversity (including key foraging areas of seals and seabirds, shark residence areas and known spawning areas of threatened fish). This approach is in stark contrast to the independent, 'science-driven', transparent approach adopted in the recent rezoning of the Great Barrier Reef Marine Park.

Key issues for the NRSMPA

One of the greatest challenges facing the NRSMPA is the need for cooperative, cross-jurisdictional, complementary MPA planning across Australia's continental shelf to address key cross-shelf linkages and patterns of connectivity, and protect ecological values and areas of mutual conservation interest. For the NRSMPA, complementary planning needs to adopt consistent, 'science-driven' approaches and include 'seascapes' and ecosystem-specific planning criteria, operating principles and benchmarks for MPA identification and selection. Urgent tasks include a uniform definition of ecosystems and seascapes (that incorporate both pelagic and benthic components) and the identification of fisheries habitats (at multiple scales).

Current Commonwealth MPA policies and the recent SERMP depart from national MPA guidelines. There is a need for independent, transparent, science-driven approaches to MPA planning in Commonwealth waters, with a clear separation of an identification process (applying ecological criteria by scientific experts), and the selection phase (applying socio-cultural and economic criteria in consultation with stakeholders).

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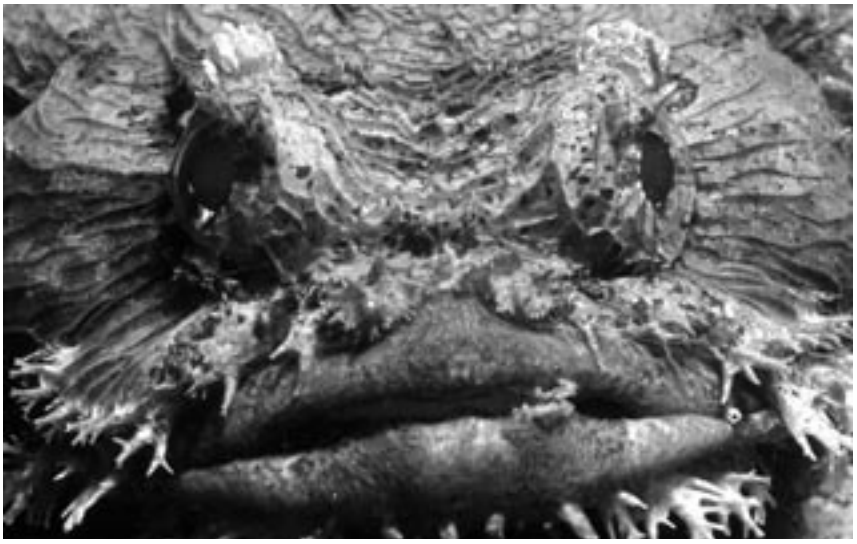
Full article and references available on the MCCN website: www.mccn.org.au

Missing the target on marine protection

Chris Smyth, Marine Campaign Coordinator, Australian Conservation Foundation

In 1991 the Commonwealth and State Governments agreed to establish a National Representative System of Marine Protected Areas (NRSMPA) under the Intergovernmental Agreement on the Environment. They committed to developing a strategic planning approach to the marine environment and a comprehensive, adequate and representative (CAR) system of marine protected areas (MPAs) in each of their jurisdictions.



Frog Fish, *Batrachomoeus dubius*, Fly Point, Port Stephens, NSW. Photograph by Jon Bryan.

Fourteen years on, what can be said of the NRSMPA? Is it national? Is it representative? Does it provide adequate marine protection?

Is it national?

Well, if you take 'national' to mean consistency in names, zoning terminology, permitted activities, identification and selection processes, institutional arrangements, the interpretation of IUCN categories, the public availability of comparable data on maps, zones and values, some agreed targets and timelines or even the colours of zones on maps, then the answer is a definite 'NO'.

The implementation of the NRSMPA mirrors the roll-out of Australia's oceans management more generally – inconsistent processes and outcomes for marine protection in a multi-jurisdictional framework.

The processes for MPA identification and selection vary:

- Victoria and Tasmania have an independent government advisory body;
- New South Wales (NSW) and Western Australia (WA) have marine park authorities; and
- The Commonwealth, Northern Territory (NT), Queensland and South Australia (SA) use their conservation departments to drive processes. (The SA Government has recently established a process to develop an SA Representative System of MPAs by 2010 – two decades after its commitment to the Intergovernmental Agreement on the Environment.)

There is some consistency in the term 'marine park', except in Victoria where 'marine national park' and 'marine sanctuary' are used, and in the use of 'marine reserve', 'nature reserve' and 'marine national nature reserve' in Commonwealth waters. There are more than 25 different zones in multi-zoned MPAs with different sets of permitted activities and levels of protection.

The IUCN Categories of protection are interpreted in various ways. In Victoria, where marine national parks are no-take, the IUCN Category assigned is II ('national park'), as are the no-take areas of Tasmania's two new reserves. However, the Commonwealth's Ashmore Reef, which is largely a 'strict nature reserve', has a small area of Category II with recreational and Indonesian fishers allowed access. Recreational fishing is also allowed in the Commonwealth waters of Ningaloo Marine Park and in Elizabeth and Middleton Reef Nature Reserve. The Buffer Zone in the Great Barrier Reef Marine Park (GBRMP) is assigned Category II but allows trolling.

Although Australia's Oceans Policy includes commitments to establishing the NRSMPA, there are no national targets or timetable for its completion or levels of protection.

Is it representative?

The NRSMPA is strongly skewed towards tropical and sub-Antarctic habitats in Commonwealth waters; iconic or remote areas have found protection easier to achieve. Although there are some temperate coastal waters within the Great Australian Bight Marine Park and state MPAs, little protection has been given to these unique waters even though they are where ocean use and environmental threats are at their most intense. The only existing jurisdiction with a representative system in place is Victoria.

Does it provide adequate marine protection?

About 7.5% of the Australian Exclusive Economic Zone (currently standing at 8.6 million km^2 – this excludes the Antarctic EEZ and the two areas of claimable shelf that could take the Australian Ocean Territory up to approximately 16 million km^2) is contained within MPAs. Terrestrial protected areas cover about 10% of Australia's land surface.

The 2003 World Parks Congress (WPC) meeting noted that the percentage of the oceans within protected areas was far behind that found on the land, and recommended that at least 20–30% of each marine habitat in the world's oceans be strictly protected (in no-take areas) by 2012.

Australia is well behind that target and has not drawn up any road map to get there. The percentage of Australia's EEZ within no-take is barely over 3%. For state coastal waters, the percentages of no-take areas are, approximately: Victoria 5%; Tasmania 4%; WA and NSW 3%; NT and SA 1%. A figure for Queensland cannot be calculated due to the lack of suitable data.

The establishment of the GBRMP and its recent rezoning, along with the creation of the NRSMPA and the release of Australia's Oceans Policy, drew the world's attention to Australia's efforts on marine protection. These are all important steps on the road to adequately protect our oceans but we still have a long way to go. As well as expanding the NRSMPA and increasing its levels of protection – to move us towards the WPC target – we need to do much more to ensure we have a truly CAR national system based on nationally consistent targets, processes and outcomes.

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Welcome to the MCCN's update on State/Territory Marine Protected Areas (MPAs). The following table has been compiled from a MCCN survey sent out to each of the State/Territory agencies and has been significantly abridged for printing purposes. A complete version of the survey questions and responses, including information of education, advisory and compliance, is available on the MCCN website: www.mccn.org.au (Please note that the questions/numbers vary between this printed and the electronic version.)

MCCN would sincerely like to thank all the relevant agencies for their effort and invaluable input into this survey.

MCCN State/Territory Marine Protected Area Update 2005		New South Wales	South Australia	Queensland	Tasmania	Northern Territory	Victoria	Western Australia
1 Marine Jurisdiction								
1.1	What is the area (approx.) of your State's marine jurisdiction?	10,000 km^2	60,092 km^2	132,000 km^2	24,265 km^2	71,839 km^2	10,174 km^2	123,363km^2
1.2	How many bioregions have been identified in your marine jurisdiction?	5 bioregions and 1 province	8	13	9	13	5	18
1.3	How many of these bioregions have an MPA?	All bioregions/provinces have MPAs	8	9	6	2	5	7
2 Marine Protected Areas								
2.1	**How many MPAs are in your State's marine jurisdiction?**	79 MPAs – 4 marine parks, 13 aquatic reserves, and 62 national parks and nature reserves with marine components	38 MPAs – 18 aquatic reserves, 3 multiple use MPAs, 14 conservation/national parks, 2 historic shipwrecks and 1 other	22 MPAs – 4 marine Parks and 18 national parks. (Plus 71 fish habitat areas (FHA) – omitted from calculations as many are declared over the same area as marine parks)	7 MPAs	3 MPAs – 1 marine park and 2 aquatic. (Plus numerous marine/intertidal components of other terrestrial reserves)	30 MPAs – 24 marine national parks and marine sanctuaries and 6 other marine and coastal parks/reserves	12 MPAs – marine conservation reserves (MCR)
2.2	**What is the total area (approx.) under MPA in your State's marine jurisdiction? %?**	1,850 km^2 – 18.50%	3,112 km^2 – 5.18%	68,000 km^2 – 51.51% (some overlaps the Great Barrier Reef Marine Park [GBRMP])	1,226 km^2 – 5.05%	2,234 km^2 – 3.11%	966 km^2 – 9.49%	15,383 km^2 – 12.47%
2.3	**What is the total area (approx.) of No-Take/Sanctuary Areas (IUCN Cat. IA–IB) in your State's marine jurisdiction, including those within multiple use MPAs? %?**	16 km^2 – 0.16%	6 km^2 – 0.01%	15% of Qld coastal zone. (These could fall into either Cat. I or Cat. II.) NOTE: Percentages are based on lineal proportions of inshore coastline. Area-based figures are meaningless due to the jurisdictional overlap with the GBRMP.	996 km^2 – 4.10%	737 km^2 – 1.03%	0 km^2 – 0% (In Victoria all no-take marine national parks and marine sanctuaries are Cat. II.)	3,172 km^2 – 2.57%
2.4	**What is the total area (approx.) of IUCN Cat. II–IV in your State's marine jurisdiction? %?**	1,460 km^2 – 14.6%	1,773 km^2 – 2.95%	Cat. II – approximately 25% conservation park zone. Cat. IV – approximately 20% habitat protection zone. See NOTE above.	Not classified by IUCN category as yet.	1,474 km^2 – 2.05%	538 km^2 – 5.3%	206 km^2 – 0.17%
2.5	**What is the total area (approx.) of IUCN Cat. V–VI in your State?**	370 km^2 – 3.70%	1,333 km^2 – 2.24%	Cat. VI – approximately 40% general use zone. See NOTE above.	Not classified by IUCN category as yet.	NA	423 km^2 – 4.16%	12,005 km^2 – 9.73% (MCR of state waters)
3 Capacity and resourcing								
3.1	**What is the approx. total MPA budget management (including education, advisory, monitoring and research)?**	$2 million for 2005–06 – marine parks. Does not include budget for managing aquatic reserves and the marine components of national parks/nature reserves.	$567,000,000 for 2005–06, plus an additional $330,000 (NRM funding) to carry out marine survey/investigation work.	$7.5 million – not necessarily inclusive of all costs related to planning, policy and capital infrastructure, nor an exact allocation of resources in the GBR between island national park and marine park management (same daily management program).	Not available – spread between many departments.	No dedicated MPA budget. Responsibilities shared between scientific, park operations and policy and planning staff for each of these items.	Not quantified. Parks Victoria's operational expenditure in 2003–04 was $117,264,000 – MPA management is a component of this.	The Department of Conservation and Land Management (CALM) disperses funds through central branches and regional offices. Some MPA functions are also managed by agencies outside the environment portfolio. It has not been possible to provide the details requested.

3.2	**How many staff are allocated to MPA:**							
	3.2.1 management?	1 manager/marine park	6 dedicated staff (excluding rangers and other support staff)	Approximately 130	No staff specifically allocated to manage MPAs at present; staff assist from various agencies	0.5 full-time equivalent	200 operational, coastal (terrestrial/marine) Parks Victoria staff – many involved in MPA management. Planning teams in 3 regions	CALM's regionalised structure, and sharing of some MPA functions with other agencies makes this question impossible to answer accurately.
	3.2.2 enforcement?	7 for marine parks. Fisheries officers and park rangers also cover MPAs as part of their enforcement work.	Rangers assigned to coastal reserves. Fisheries officers assigned to fisheries closures	Included in 3.2.1 It is estimated that over 100 field staff (various agencies) are actively engaged in marine park compliance, but no analysis has been undertaken		0.5 full-time equivalent	Dept. of Primary Industries responsible for enforcement in MPAs	As per question 3.2.1
	3.2.3 education/advisory?	Enforcement officers also carry out education and advisory roles, as do the project officers.		Included in 3.2.1		0.25 full-time equivalent		As per question 3.2.1
	3.2.4 research/monitoring?	3 dedicated research officers, and 2 project officers who assist with monitoring and surveys		Included in 3.2.1		2	Included in 3.2.1	As per question 3.2.1
3.3	**3.3.1 Are there dedicated boats and vessels available? If so how many and what size? If not what do you use?**	4 boats over 6 m; 3 small boats (under 5 m); 4 smaller boats (tinnies); 1 canoe, 1 4 m boat. Marine parks also use Dept. Primary Industries (Fisheries) vessels or NSW Maritime vessels as required.	Various small boats, fisheries vessels, charter boats	About 13 vessels in the 7 m to 20 m range plus a number of tenders and smaller craft	No	Boats are in use for management of Cobourg Marine Park	Parks Victoria has a boat fleet primarily for Port Phillip and Western Port areas. Department of Primary Industries Fisheries also enforces MPA provisions.	Over 20 boats up to 10 m are located throughout WA and are dedicated to MPA management.
4 Establishing MPAs								
4.1	**Which agency/agencies is/are responsible for identifying and selecting MPAs in your State?**	Marine Parks Authority (marine parks), Dept. of Environment and Conservation (DEC) (national parks/nature reserves) and Dept. of Primary Industries (DPI) (aquatic reserves)	Department of Environment and Heritage (DEH)	Environmental Protection Authority (EPA) (marine parks) and Queensland Department Primary Industries and Fisheries (FHAs).	Resource Management and Development Commission	Process is currently being developed.	Victorian Environmental Assessment Council's (VEAC) predecessor bodies (Environment Conservation Council/Land Conservation Council)	The Marine Parks and Reserves Authority (MPRA), a community-based statutory authority, advises the government. CALM implements government decisions. The initial identification of candidate MPAs was scientifically based.
4.2	**Is there a formal legislative/policy process for community nomination of MPAs? Is any proposed in the future?**	There is no formal process for community nomination of MPAs in NSW. However, local communities often propose sites for MPAs.	Legislation supporting multiple-use marine parks is being drafted and will contain provision for community nominations.	No	Tasmanian Marine Protected Areas Strategy 2001		No	No. However, the process of identifying implementation priorities has significant stakeholder input.
4.3	**Under what state legislation can MPAs be proclaimed and is there specific policy/legislation?**	*Marine Parks Act 1997* (marine parks), *Fisheries Management Act 1994* (aquatic reserves) and *National Parks and Wildlife Act 1974* (national parks/nature reserves)	*National Parks and Wildlife Act 1972*, *Fisheries Act 1982*, *Historic Shipwrecks Act 1981* and *Wilderness Protection Act 1992* Legislation supporting multiple-use marine parks is being drafted.	*Marine Parks Act 1982*, to be replaced by the *Marine Parks Act 2004* which has been passed but not yet proclaimed.	*National Parks and Reserves Management Act 2002* and *Living Marine Resources Management Act 1995*	Not specific marine park legislation; declarations are made under the *Territory Parks and Wildlife Conservation Act.*	*National Parks Act 1975*	*Conservation and Land Management Act 1984* (marine conservation reserves – 3 different types) and *Fish Resources Management Act 1994* (fish habitat protection areas)
4.4	**What future MPAs are proposed for your State, when will they be declared and will they be part of the National Representative System of MPAs?**	The NSW Government aims to establish, in most instances, at least one large marine park in each bioregion.	The State Strategic Plan commits the South Australian Government to developing 19 representative marine parks by 2010 to fulfil the State's contribution to the NRSMPA.	The government has committed to a system of marine parks from border to border, including the Great Barrier Reef (Coast) Marine Park (2004) and the proposed Great Sandy Marine Park, as part of the national MPA representative system.	There is a policy position that aims to create at least one MPA in each Tasmanian marine bioregion by 2010.	Proposed Bynoe Harbour Marine Park is the next marine park to be declared in 2006. Will be part of the NRSMPA.	None at present	Currently 4 MPAs are scheduled for gazettal Dec. 2006: Dampier Archipelago Marine Park; Cape Preston Marine Management Area; Walpole/Nornalup Inlets Marine Park; and 'Capes' Marine Park. The next priority is the Recherche Archipelago. All will be part of the NRSMPA.

MCCN State/Territory Marine Protected Area Update 2005		New South Wales	South Australia	Queensland	Tasmania	Northern Territory	Victoria	Western Australia
4.5	**What is your government's agreed strategy/ policy/commitment for establishing a representative system of MPAs in your State?**	The NSW Government is committed to developing a representative system of MPAs. See *Developing a Representative System of MPAs in NSW – An Overview* (NSW Government 2001).	The "Blueprint for the South Australian Representative System of MPAs" provides the SA Government's policy commitments for a system of representative marine parks.	The Government has a commitment regarding the establishment of a system of marine parks from border to border.	Tasmanian Marine Protected Areas Strategy 2001	NT Parks and Conservation Master Plan provides commitment to establishing representative system of Marine Conservation Areas	The creation of the 24 marine national parks and marine sanctuaries meets government commitment.	The WA Government is committed to the development of a CAR MPA system, as part of the NRSMPA, based upon a multiple-use model with three marine conservation reserve categories.
5 MPA management								
5.1	**Is there a legislative requirement for a plan of management for MPAs in your State?**	*Marine Parks Act 1997* requires a zoning plan and operational plan; *National Parks and Wildlife Act 1974* requires a plan of management and with *Fisheries Management Act 1994*, management plans are at Minister's direction.	Proposed legislation will make provision for development of marine park management plans.	There is a statutory requirement for 'zoning plans', and an option for 'management plans' to be prepared.	No legislative requirement for a management plan for an MPA; however, there are provisions for creating management under various Acts.	Yes	Yes	Yes. Before a new marine conservation reserve is declared an Indicative Management Plan must be prepared and released for public comment (3 months). Once gazetted, a final ten-year management plan is approved.
5.2	**Is there a timeframe for instigating MPA plans of management after proclamation?**	Management plans must be prepared as soon as practicable after declaration.	Not at this time	Zoning plans are normally completed prior to proclamation or within 2 to 3 years after proclamation.	There is no specific timeframe.	As soon as practicable	Not statutory, but Parks Victoria has scheduled planning for the 24 new marine parks/sanctuaries over three years (2003–06).	There is no timeframe set for the approval of MPA management plans following gazettal. As all planning/consultation have already been undertaken, this can be completed quickly.
5.3	**Which government agencies manage MPAs in your State?**	As per question 4.1	DEH and Primary Industries and Resources of South Australia (PIRSA)	Queensland Parks and Wildlife Service, part of the Environmental Protection Agency	Dept. of Primary Industries, Water and Environment; Dept. of Tourism, Parks, Heritage and the Arts	Parks and Wildlife Service	Dept. of Sustainability and Environment (establishment and broad policy); Parks Victoria (daily management)	CALM is responsible for administering MPA legislation; Department of Fisheries manages fishing in MPAs.
5.4	**Does each MPA in your State have a plan of management?**	Marine parks – yes, except Cape Byron Marine Park (plans are being finalised). National parks/nature reserves – most. Aquatic reserves – not required.	Great Australian Bight Marine Park Management Plan, various terrestrial park plans	Each marine park has a zoning plan	No	Yes	No – 5 draft plans cover 7 (of 24 marine parks/sanctuaries), and 4 other drafts cover 6. All other MPAs have plans underway.	Most MPAs in Western Australia have an approved plan of management. There are some exceptions but these draft plans are close to being finalised.
5.5	**Is there a timeframe for reviewing MPA status and management plans?**	Marine parks – scheduled every 5 yrs. National parks/ nature reserves – as needs change or every 10 yrs. Aquatic Reserves – every 5 yrs.	Not at this time	Yes, every 10 years	Ongoing, on the basis of monitoring and new knowledge. There is provision for this under the Marine Protected Areas Strategy.		Yes	Management plans are reviewed as soon as practicable after they have been in place for ten years.
6 Public Participation								
6.1	**Are there advisory bodies for MPAs in your State with community/ stakeholder representation? Do they have community/stakeholder representation?**	Yes: 1. Marine Parks Advisory Council 2. Local Marine Park Advisory Committees. 3. Marine Parks Research Committee (includes an independent researcher). 4. National Parks and Wildlife Advisory Council 5. National Parks and Wildlife Advisory Committees	1. Marine Advisory Committee – independent, expertise-based, multi-sectoral, reports directly to Minister for Environment and Conservation 2. Local Consultative Committees – to be established	Statutory Coastal Protection Advisory Council includes community reps. Stakeholder groups also involved in marine park planning, management of whale watching etc.	No specific advisory bodies; existing advisory bodies (Fisheries) do have community representatives.	Not currently, something the NT is looking at. Gurig Ganuk Barlu has joint management board (with traditional Aboriginal custodian representatives) and an advisory committee with full stakeholder representation.	Yes – various related to management planning process	Yes – 1. MPRA 2. MPA Management Advisory Committees 3. Community advisory bodies are established for community input prior to MPA gazettal and also development/review of management plans.
6.2	**Is there a separate scientific advisory body for MPAs?**	The Marine Parks Research Committee.	Scientific Working Group – independent, reports directly to Minister for Environment and Conservation	No	No	Not currently	No	Yes – the Marine Parks and Reserves Scientific Advisory Committee

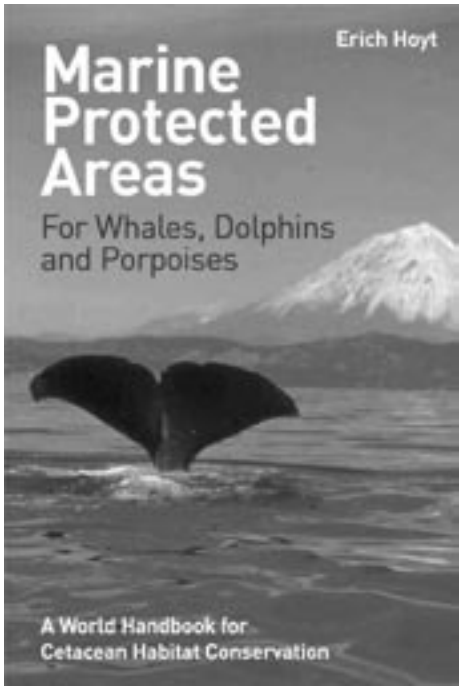
6.3	**How are members appointed to an advisory body (appointed by the minister or elected)?**	Ministerial appointment	Appointed by the Minister for Environment and Conservation	Appointed by stakeholder groups	Scientific committee – appointed by Tasmanian Aquaculture and Fisheries Institute and University of Tasmania Fisheries – EOI and Ministerial appointment	Cobourg committees appointed by Minister	Expression of Interest. Advertise and select members based on knowledge of planning area and skill set.	Advisory Committee members are generally appointed by the Minister for the Environment or, in some cases, CALM's Executive Director.
6.4	**What is your State's strategy for public participation in MPA management?**	Public participation through representation on advisory councils and committees, public involvement in park usage surveys, and public consultation on park planning and management.	The Blueprint for the South Australian Representative System of MPAs commits government to an approach to public participation.	Through public comment on zoning plans and consultation on other local management issues. There is also an active program aimed at increasing Indigenous involvement in management.	Public participation is facilitated through MPA management plan development. The MPA Strategy also provides for public consultation, community education and recommends community-based monitoring programs.	Through the development of management plans. Gurig Ganuk Barlu (Cobourg) Marine Park is jointly managed with the traditional Aboriginal owners.	Range of measures in planning process. e.g. Have your say, agency forums, information nights, community days, targeting key groups for discussions.	The CALM Act has provisions for public participation procedures in MPA establishment. There is also a range of strategies, such as MPA Management Advisory Committees.
7 Research and Monitoring								
7.1	**What are the research and monitoring programs for each of the MPAs in your State? Is it part of an overall strategy/framework for MPA research and monitoring in the State?**	Each marine park has a research and monitoring program. The 'Strategic Framework for the Evaluation and Monitoring of Marine Parks in NSW' (MPA 2004) guides marine park research and monitoring.	MPA monitoring/research is part of an overall strategy/framework. Research strategy developed, with ties to interstate monitoring methods. Monitoring strategy to be developed for each marine park. Also various monitoring programs for whales, benthic habitat, seals and sea lions.	Research and monitoring relevant to Queensland marine parks is most commonly part of a broader strategy relating, for example, to seabirds, turtles, Dugong, coral bleaching, water quality, lyngbya etc.	There is a range of project-based research and monitoring activities in Tasmania's MPAs, e.g. ongoing monitoring program at Maria Island, and recent investigation of the waters around Deal Island found the first known occurrence of a coral reef in Tasmania.	Habitat assessment at Cobourg Marine Park	Develop baseline understanding of marine diversity	MPA management plans specify the research and monitoring (ecological and social) required, subject to policy. Broadly, research programs are: developing a comprehensive biophysical and social inventory of each MPA; developing appropriate ecological and social baselines; understanding key natural processes and cause–effect pathways of threatening processes; and predictive studies, e.g. effects of climate change.
7.2	**Which organisations are responsible for conducting these programs?**	Marine Parks Authority in marine parks. Other agencies also conducting research/monitoring within MPAs, include DPI, DEC, universities, local government, consultants, and local community groups.	DEH	EPA/QPWS, CRCs, universities	Tasmanian Aquaculture and Fisheries Institute (TAFI) is the lead organisation.	Department of Infrastructure Planning and Environment (i.e. Parks and Wildlife). Fisheries and NT Museums have also conducted research in the park.	Parks Victoria and research partners	CALM coordinates and undertakes research and monitoring in MPAs. At present the majority of MPA research is undertaken by C'wealth agencies (CSIRO, AIMS) and tertiary institutes. Other state agencies are also involved.
8 Education and Advisory								
8.1	**What are the education and public awareness programs for each of the MPAs in your State?**	Various – advisory material (e.g. guides); information days; 'Discovery' programs, signage; information shelters; user surveys; community events, (exhibitions and schools); and web-based information. (www.mpa.nsw.gov.au) (www.dpi.nsw.gov.au) (www.nationalparks.nsw.gov.au)	General communication/ interpretation through DEH and PIRSA	Education and public awareness is a major and essential component of management.	The most commonly used education and advisory tools for MPAs in Tasmania are web-based information and brochures. Some MPAs have detailed signage on-site, such as the marine diving and snorkelling trail at Tinderbox. The Dept. of Education runs a Marine Discovery Centre and there is a range of private ecotourism operations involving MPAs.	Part of the park's interpretive program	Integrated strategy, five key areas: 1. Publicity and on-site information; 2. Community festivals and friends groups; 3. Strong advocates as role models/champions in the community. Stakeholder updates; 4. School visits, education kits, role models and hands-on activities; 5. Anglers information – park notes, fishing guides and posters in fishing stores.	Statewide programs: Marine Community Monitoring; marine management zoning education; marine turtle education; Nearer to Nature marine and coastal education; CALM Bush Rangers; Central West Coast Marine Biodiversity and Conservation Schools Program; Visitor interpretation centres; Landscope Magazine; and Marine Conservation Matters newsletters.
8.2	**Is there a community program (e.g. friends of marine parks) in your State?**	There is no formal marine parks community program in NSW.	Friends of Parks program administered by DEH	No. However, there are very successful volunteer support programs in areas such as the Whitsundays.	No	Not currently	Yes	There are established Friends Groups for several marine parks.

The value of charismatic megafauna for MPA planning, design and management

Erich Hoyt, Senior Research Fellow for the Whale and Dolphin Conservation Society, and Co-director of the Far East Russia Orca Project

In the beginning, protecting charismatic megafauna was a perfectly reasonable goal for protected area planners and managers. Then, with the growth of our understanding about the importance of ecosystems, species (megafauna or not) became almost unmentionable – everything had to be determined strictly in terms of protecting ecosystems. Only the occasional endangered species was an exception to this rule.

The ecosystem remains as important as ever. Ecosystem-based management (EBM) is the cornerstone of habitat protection on land and sea. Yet there is today a growing understanding of the importance of megafauna in terms of creating, designing, selling and managing protected areas and ensuring that they are successful.



The ultimate megafauna are the 84 species of cetaceans, ranging in size from dolphins to the Blue Whale – the largest animal to have lived on earth. Marine megafauna take up a lot of space, thus tending to require larger marine protected areas (MPAs) that, with strategic planning, could simultaneously protect many other species and parts of the ecosystem.

In Australia, the pioneering Great Barrier Reef Marine Park (1975) was one of the first MPAs to include a detailed whale and dolphin plan. Cetaceans did not feature early in the planning but, by 2000, a policy document on cetaceans was released. In 2004, the percentage of the park in highly protected no-take zones increased from 4.6% to 33%. Cetaceans and other species will benefit directly and indirectly from this comprehensive critical habitat protection.

Many more areas worldwide include substantial cetacean habitats, yet few include them in management plans and even fewer have protected IUCN Category I core zones. It may be partly a prejudice against megafauna, but is more often simply that planners and managers don't have data on the critical habitat needs of cetacean populations to use in making assessments.

This gap is rapidly closing. The revolution in cetacean studies stemming from the spread of photo-ID (individual photographic identification of animals), satellite tracking, aerial and boat surveys, GIS mapping and other research, has led to a better understanding of the critical habitat of cetaceans. In some cases, critical habitat near or even well outside existing park areas has led to proposed extensions and the possibility of improved habitat protection.

In 2005, across the world's 18 marine biogeographic zones, there are 358 MPAs with cetacean habitat, 41 of which are proposed for expansion, plus 176 newly proposed MPAs with cetacean habitat. The worldwide total is 534 proposed or existing MPAs with cetaceans.

Some 19 countries and territories have now declared their national waters (including their entire exclusive economic zone) as whale or cetacean sanctuaries, and four others have proposed such protection. There is hope that some of these areas may become real MPAs – managed multi-zone biosphere reserves with highly protected core areas offering significant habitat protection for cetaceans.

On the high seas and in the waters of two or more countries, there are five existing and nine proposed international cetacean sanctuaries. The national and international sanctuaries in general provide a much lower degree of protection (mainly a hunting ban) compared with the smaller MPAs. However, the Pelagos Sanctuary for Mediterranean Marine Mammals, designated in late 1999 by Italy, France and Monaco, holds promise as the first international sanctuary offering substantial habitat protection for cetaceans – if zoned management plans can be approved and implemented.

Cetacean habitat protection has made great strides in the past decade yet remains at an early stage. In summary, creating and managing effective MPAs for cetaceans depends upon:

- identification and strict protection of substantial areas of cetacean critical habitat – the places where whales and dolphins hunt, feed, court, play, mate and reproduce;
- implementation of an overall EBM approach to ensure that ecosystems will remain healthy and support cetaceans into the future;
- institution of MPA networks to link the protected habitats of cetaceans throughout a population and a species' range;
- generous use of the precautionary approach when choosing and designing MPAs;
- good management plans (with periodic review) developed with all stakeholders, including researchers, MPA managers, community members, whale-watch operators, boaters, visitors and others;
- identification of all cetacean threats (pollution, marine traffic, fishing conflicts) with appropriate legislation and enforcement as needed; and
- pushing for identification and protection of high seas habitats for cetaceans through regional and international agreements.

If cetaceans can help secure high seas MPAs, their charisma may be enhanced.

Further information: Erich Hoyt, Erich.Hoyt@mac.com or www.cetaceanhabitat.org

Also see: Hoyt, E. 2005. *Marine Protected Areas for Whales, Dolphins and Porpoises: A World Handbook for Cetacean Habitat Conservation*. Earthscan, London. 516pp. £24.95.

Full article and references available on the MCCN website: www.mccn.org.au

Protecting Dugongs in the Great Barrier Reef World Heritage Area and Marine Park

Alana Grech and Helene Marsh, James Cook University

The 2003 Great Barrier Reef Marine Park Zoning Plan, and the associated rezoning of the adjacent Great Barrier Reef Coast Marine Park, protects 340,000 km^2 of the Great Barrier Reef World Heritage Area (GBRWHA) through a comprehensive and representative, multiple-use zoning regime. Overall, 33% of the region is now zoned as no-take or has higher protection.

PhD student Alana Grech and Professor Helene Marsh from the School of Tropical Environment Studies and Geography, James Cook University, evaluated these zoning plans and other current management arrangements for their combined capacity to protect the region's significant population of the Dugong, *Dugong dugon* – an explicit reason for its World Heritage listing. They used experts and a Delphi technique to identify and rank activities which are potentially threatening to Dugongs and their seagrass habitats, including netting, trawling, Indigenous hunting, vessel activity and terrestrial runoff. GIS and spatial modelling techniques were then used to quantify the protection afforded by the new arrangements.

It was found that commercial netting restrictions in the GBRWHA now provide a high level of protection for 57% of Dugongs in the region, and trawling restrictions protect 80% of Dugong's seagrass habitat – representing an improvement over the previous zoning regime of 51% and 11% respectively. Overall, 85% of Dugongs in the GBRWHA now occur in areas with a high level of protection from all identified threatening activities, a 10% improvement over the previous management arrangements. Along the remote Cape York region of the GBRWHA (Cooktown north), this improvement was more modest (from 81% to 88%), but was higher along the urban coast (Cooktown south) (from 54% to 66%). By conducting a spatial risk assessment, it was determined that further improvement in Dugong protection would require significant reduction in commercial netting and/or Indigenous hunting in remote areas, whereas on the urban coast, vessel activity and terrestrial runoff should be management priorities.

Approximately 9% of the GBRWHA Dugong population occurs in Dugong protection Areas (DPAs). This equates to approximately 63% of the urban coast (Cooktown south) Dugong population. The new zoning in the GBRWHA marginally increases the percentage of Dugongs within the DPAs (with a high level of protection from all threatening activities) from 76% to 85%, through increased restrictions on commercial netting and trawling. However, threats from vessel strike and terrestrial runoff remain and 15% of Dugongs in the DPAs still do not have a high level of protection from anthropogenic impacts.

The researchers concluded that for effective Dugong management in the GBRWHA, multi-agency coordination is required to enable all their anthropogenic threats to be addressed. This conclusion also applies to the conservation of other species of marine wildlife. To be effective, marine protected areas (MPAs) need to be able to control all activities which pose a threat to the marine environment, including activities in the adjacent coastal catchments. Many species are highly mobile and most populations transcend jurisdictional boundaries, as do most of the sources of threats that adversely impact upon them. Protection of one part of a species' range is of limited effectiveness if this species is being overexploited, or otherwise adversely impacted upon, in another part of its range. Trans-boundary MPAs have the potential to be important instruments for marine mammal conservation.

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Dugong in the Great Barrier Reef Marine Park. Photograph courtesy of the Great Barrier Reef Marine Park Authority.

Stakeholders' responses to the National Representative System of Marine Protected Areas (NRSMPA)

RECFISH and the NRSMPA

John Harrison, CEO, Recfish Australia

Networks of marine protected areas (MPAs) around Australia are not the only way of preserving our aquatic ecosystems. It is *not* the panacea for Fisheries ecologically sustainable development (ESD), thus ensuring that future generations enjoy what past generations have.

Without sound biological and scientific evidence proving the only way to save something is to lock it up, there is no rationale for wholesale MPAs. Management solutions must be broader.

Declines in aquatic life may have nothing to do with activities in areas earmarked for protection. Often problems lie outside the box drawn on the map. Off-stream pollution, habitat destruction and drainage of wetlands damage ecosystems, inshore and offshore.

The 1995 National Policy on Recreational Fishing called for greater research, habitat work and legislation to protect spawning and nursery areas. NRSMPA is the legislation – all three are needed to achieve ESD in fisheries. We must address the cause not just treat the symptom.

The jury is undecided on MPA successes due to negative side effects e.g. aggregation of effort/pressure in other areas. 'Paper parks' are not the answer – we need resources assigned for management, community monitoring, enforcement, etc.

A MPA should not mean all fishing activity is excluded automatically. Recreational fishing behaviour can be modified to achieve outcomes; total exclusion is an absolute last resort.

The biggest mistake is not consulting at the start and throughout. This causes angst and doesn't generate ownership. More effective programs are achievable with the support of recreational fishers. Support cannot be expected in exchange for total exclusion.

AMSA and the NRSMPA

AMSA National Council

The Australian Marine Sciences Association (AMSA) supports the creation of marine protected areas as part of the longer-term vision for sound planning and sustainable management of Australia's coastal and oceanic waters. AMSA considers the need to conserve marine biodiversity, at all taxonomic levels, self-evident. Increasing knowledge regarding marine impacts from climate change and increased carbon dioxide, may make this need more urgent. Australia has many excellent examples of well-planned MPAs, based on sound scientific principles.

AMSA also believes we are working towards a thorough understanding of marine ecosystem function, and our knowledge of overall marine biodiversity is extremely scant. Therefore, limited-use and no-take reserves provide a unique opportunity for scientists to study relatively undisturbed marine communities. Well-planned and appropriately monitored, MPAs can be an important baseline for comparison and assessment. As the science of MPA management increases, so will our understanding of the value of MPAs from an ecological (and social, cultural and/or economic) perspective.

AMSA considers the implementation of a National Representative System of Marine Protected Areas a policy question rather than a scientific decision; however, the benefits appear logical. Historically the implementation of Australian MPAs has been patchy and at times *ad hoc*. A national overview would seem prudent, to ensure consistency, share lessons learnt and facilitate other efficiencies. Scientific tools are available to assist policy makers in the identification and placement of MPAs – these should be used. Science should form an early and essential component of the MPA identification and planning process.

For further AMSA information on MPAs visit www.amsa.asn.au/PDF-files/Submissions/Marine-Protected-Areas.pdf

ASIC and the NRSMPA

The Australian Seafood Industry Council (ASIC) is the peak national body representing commercial fishing, aquaculture and post-harvest industry sectors.

ASIC has been an active participant in Australian Government processes for establishing a National Representative System of Marine Protected Areas in Australian waters. ASIC has taken a strategic and coordinated national approach to the NRSMPA policy, developing an ASIC MPA strategy (1998) and commissioning a study into a coordinated fishing industry response to MPAs (2001).

ASIC has developed key principles it believes should be applied to NRSMPA implementation, including:

- The seafood industry, as a key stakeholder, must be consulted by government in a thorough, transparent and timely manner, and industry input addressed prior to MPA declaration. The objectives of, and process for, MPA development and declaration must be clearly articulated to stakeholders prior to commencement of MPA development.
- Socio-economic impacts on the seafood industry from MPAs must be minimised, and evaluated prior to and, if required, after MPA declaration.
- Where MPA declaration results in the reallocation of existing rights to marine resources from commercial fishing operators to the broader community, this must be recognised and adequately compensated, via the provision of adjustment assistance (or other direct means) from government.
- Where MPA declaration results in the displacement of fishing effort and/or adverse socio-economic impacts, meaningful adjustment assistance must be provided to fund effort reduction schemes to offset fisheries effort displacement effects due to MPA introduction, and to address adverse socio-economic impacts on individual businesses and communities.

AMCS and the NRSMPA

In 1985, Australia's waters were divided into 32 marine bioregions – a key step towards developing a national system of marine protected areas to protect the full range of habitats and ecological processes in Australia's marine environment. Unfortunately, 20 years on and there is still little on-water protection.

The Australian Government is responsible for 16 million km² of ocean, and to date has declared a total of 14 MPAs. Outside of the Great Barrier Reef Marine Park, national MPAs only cover 1.7% of the 16 million km², and less than 0.9% is fully protected. This is a long way off the World Park Congress recommendation of 20–30% in fully protected areas.

However, the Australian Government's comprehensive, adequate and representative (CAR) system of MPAs has stalled at the first port of call – south-eastern Australia – where intense politicking with extractive industries has ground the process to a halt.

Meanwhile fishing efforts have expanded into the last remaining natural refuges across south-eastern Australia – including sea canyons, rocky reefs, seamounts and the deep-sea, continental slope.

It's time for action; we need:

- rigorous scientific guidance on MPAs – what's needed and where;
- strict timelines agreed to by all relevant federal Ministers;
- close collaboration between federal agencies and scientists with relevant expertise;
- government commitment to engage and support State/Territory governments in designing and declaring MPAs;
- government commitment to structural adjustment assistance for those genuinely impacted by MPA declarations;
- government commitment to fund the declaration and long-term management of Australia's MPA estate.

APPEA and the NRSMPA

Belinda Robinson, Chief Executive, Australian Petroleum Production and Exploration Association (APPEA)

Australia's oil and gas industry is a strong supporter of marine protected areas as a mechanism for protecting clearly defined and scientifically supported conservation values. APPEA and its members have worked proactively with the conservation and fishing sectors in developing the first two candidate MPAs in the South-east Regional Marine Plan and recently identified four further possible options in the region.

The industry recognises that where an activity is proposed that has the potential to diminish environmental values, it is responsible for ensuring that important conservation values are protected. Such an approach gives industry the capacity and flexibility to adopt innovative concepts or new technology to explore and develop potential resources without presenting a threat to conservation objectives. It permits industry the opportunity to assess whether it wishes to meet the environmental costs of gaining access to areas where significant conservation values demand appropriate technical or management measures.

APPEA and its members accept that access is not always possible as there may be instances where an activity could not be undertaken without compromising the conservation values of an area. However, APPEA and its members strongly believe that blanket bans and arbitrary prohibitions excluding all oil and gas activities are inappropriate and simplistic management mechanisms that fail to recognise the ability for the Australian oil and gas industry to operate with little or no impact in a wide range of sensitive environments.

Barrow Island. Photograph courtesy of Chevron Australia.

Tourism Transport Forum and the NRSMPA

The natural environment is a key element of Australia's global tourism appeal. Australia's protected areas contribute the key elements of this international image.

Many of Australia's most important and globally recognised tourism icons are located within protected areas, including marine parks and coastal reserves. The Great Barrier Reef and even much of the Sydney Harbour Foreshore are in protected areas. These attractions are of great importance to the Australian tourism industry, yet their full potential has not been recognised to date.

For Australia's tourism industry to reach its full potential, it is vital that protected areas:

- are adequately funded and managed;
- provide high quality visitor experiences;
- are effectively promoted, while ensuring protection of their conservation values.

It is time that protected areas became a national tourism priority.

Tourism in protected areas provides significant economic benefits to regional areas and the Australian economy as a whole. For example, the Cape Tribulation section of Daintree National Park is estimated to contribute over $100 million per annum in visitor expenditure to the Port Douglas region.

In recent years, the tourism potential of Australian protected areas has been a vital element in the arguments put forward for increasing 'protected area' designation. It is critical that the appreciation and awareness of protected areas by visitors is effectively communicated to all levels of government, as political support is vital for conservation.

The TTF's report *A Natural Partnership: Making National Parks a Tourism Priority* is available at www.ttf.org.au/

Divers and the NRSMPA

Joanne Marston, Coordinator, Project AWARE Foundation

Divers and snorkelers are the guardians of our oceans – we share responsibility to conserve the underwater environment and protect the delicate ecosystem. It's difficult for anyone who regularly puts on a mask or spends much time in the water, not to notice adverse changes. In fact, because of our up-close-and-personal relationship with the underwater world, divers and snorkelers are often the first to recognise habitat decline and sound the alarm.

Through monitoring and assessing our underwater environments, divers often provide information to local, state and national governments on threatened/endangered species, invasive species and threatening processes. We also give information to other organisations, universities and researchers conducting educational programs or implementing conservation methods.

The Project AWARE Foundation, the dive industry's leading non-profit environmental organisation, is committed to assisting implementation of the National Representative System of Marine Protected Areas – as part of the development of a strategic approach to protecting our oceans and to ensure a future for marine species. MPAs aim to ensure the conservation of marine biodiversity and integrity of ecological processes. Biodiversity and growth can be monitored as MPAs provide superb sites for scientific research and a great place to educate and raise public awareness. Divers can play a crucial role: assisting with research, education and protection of our underwater kingdoms. We hope the NRSMPA allows the diving community to continue this role and discover more about our magnificent oceans and the life that is dependent upon it.

Project is underway to create global MPA database

Abridged from MPA NEWS, Vol. 6, No. 8 (March 2005), the international newsletter on marine protected areas, www.mpanews.org

Planning a network of marine protected areas (MPAs) requires knowledge of where MPAs currently exist, enabling gaps in habitat protection to be addressed. Amid recent calls by government and conservation leaders for a worldwide network of MPAs by 2012 (*MPA News* Vol. 4, No. 3 and Vol. 5, No. 4), a project is underway to build an enhanced global database of MPAs – including each site's location, regulations and habitats. The goals of the project are to use the database to help design scenarios for a worldwide network of MPAs, and track progress toward building such a network.

The project enhances the marine portion of an existing inventory of terrestrial and marine protected areas: the World Database on Protected Areas (WDPA), maintained by the United Nations Environment Programme World Conservation Monitoring Centre. This enhanced version, nicknamed MPA Global, focuses only on MPAs, lists sites not included in the original inventory, and contains more site details. When complete, MPA Global will be re-incorporated into the WDPA.

Submissions welcomed

MPA Global is a work in progress. More sites and site details are being added, and edits by the public are welcomed following registration at the project website (www.mpaglobal.org). Edits are needed to fill any information gaps. Many site descriptions offer only basic data – location, size, date of designation and legal authority – with little on habitat or regulations. Each submission is reviewed before deciding whether to incorporate it in the database, based on the information provided. All suggested edits are retained for comparative purposes.

The database allows visitors to search for MPAs by country, international convention, or site name; however, until a thorough verification of the database is conducted in 2005, the data shouldn't be used for analyses. Approximately 5,000 sites, including international, national and state-level MPAs are listed.

The MPA Global project generally follows the IUCN definition of MPAs, although does not rule out the possibility of adding other types of spatial management tools that fall along the marine protection continuum, such as fishery closures. Analysts who later want to examine a subset of the database – such as trawl closures or subtidal habitats – will be able to do so using the additional information included on regulations or habitat.

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Assessing the carrying capacity of MPAs – how many visitors can your MPA hold?

Abridged from MPA NEWS, Vol. 6, No. 2 (August 2004), the international newsletter on marine protected areas, www.mpanews.org

The benefits of tourism to marine protected areas (MPAs) can be significant, and include the potential for generating revenue to support management. As with other human activity in MPAs, tourism has environmental impacts. Controlling these impacts is important; a potential key to such management lies in assessing the number of tourists that an MPA can support sustainably – its carrying capacity.

Assessing the carrying capacity of an MPA involves many factors, though some scientists suggest there may be general capacity limits for particular habitat types, such as coral reefs. Actual implementation of these hard limits on tourist numbers can be politically difficult, leading some experts to suggest an alternative way to manage tourism impacts: estimating the 'limits of acceptable change'.

Carrying capacity

The term 'carrying capacity' derives from ecological science, where it indicates the number of organisms a given area can support, over a given time period. Adapted to tourism management, its meaning is similar: the number of people who can use an area without unacceptable alteration of the physical environment.

Assessing the carrying capacity of an MPA is rarely straightforward. Carrying capacity can differ from site to site, depending on habitat – a vertical wall of coral reef may be able to sustain more divers than a flatter reef. In addition, a site's carrying capacity can increase or decrease with visitors' level of experience and education. If a park is able to educate visitors to have less impact, its carrying capacity increases accordingly.

A basic equation for calculating carrying capacity is:
Carrying capacity = Area used by tourists / Average individual standard

The average individual standard (AIS) is the space a tourist requires for an acceptable experience in the MPA, which varies depending on the area, activity and management. Managers seeking to offer a wilderness-type experience would set a higher AIS than managers offering more high-traffic experiences.

Another way of setting carrying capacity limits is when managers observe a level of use above which degradation ensued. This was the basis for the widely cited research on MPA carrying capacity by Hawkins and Roberts in 1997, who compared levels of diver damage at similar, protected reefs in three regions.

Their conclusion: reefs could sustainably support ~5,000–6,000 dives/dive site/year, but greater usage resulted in a rapid rise in damage. This was intended to be a general rule, adaptable to individual MPAs and factors such as reef health, number of moorings, diver experience and enforcement of regulations.

There are few examples of MPAs that have formal carrying capacity limits. One reason for this is political: it can be difficult for resource managers to limit tourist numbers when local businesses depend on those tourists. Inversely, less-visited MPAs may not yet be experiencing negative impacts from tourism.

In the management plan for Banco Chinchorro Biosphere Reserve (Mexico), 150 individuals are allowed to visit this MPA daily. However, increased coastal development has resulted in one tourism developer purchasing a high-speed catamaran to take 400 people a day out to this MPA. Protection of this and other regional MPAs, potentially through the court system, might rely on their carrying capacity limits.

Visitors viewing the GBR through a glass-bottomed boat. Photograph courtesy of the Great Barrier Reef Marine Park Authority.

Limits of acceptable change

Professor Steve McCool, University of Montana (US), believes visitor carrying capacity treats limits on visitor numbers as an end in themselves, whereas many problems are a function of visitor behaviour. McCool suggests that managers ask what resource and social conditions are acceptable, and how those conditions may be attained, i.e. management should be based on the limits of acceptable change (LAC) for an MPA.

LAC reflects values, preferences, science, policy and public input; can be maintained through a variety of policies, such as education; and requires monitoring. Importantly, LAC involves combining the technical expertise of planners and scientists with knowledge from public stakeholders, resulting in greater buy-in from stakeholders and improved management outcomes. (A carrying capacity approach, in contrast, prioritises science over public values and interests.) As use increases, management may decide the only option left is a limit on visitor numbers.

The main criticism of LAC is that it can be costly in terms of time and staff, due to its monitoring requirement. In contrast to carrying capacity – which entails little monitoring apart from counting visitors – a LAC system requires regular measurements of changes in resource and social conditions.

The first LAC-based management plan for an MPA, the Saba National Marine Park (Caribbean), provides standards for multiple factors, including the proportion of damaged corals acceptable by zone and the minimum percentage of time a dive boat will be present at each site. The plan also requires standards for water quality, sedimentation, and fish stocks. Management believes the LAC will play a more important role once dive numbers increase.

Pacific Island communities – owning, protecting and managing the marine environment

Professor Leon Zann, Marine Studies Program, University of the South Pacific, Suva, Fiji

As in many other parts of the world, marine biodiversity and inshore fisheries resources are declining in Pacific Island countries (PICs). The reasons include increasing human populations, urbanisation, the cash economy, commercial fisheries development, use of more effective fishing gears, declining customary conservation practices and degradation of marine habitats. PICs are microcosms of the larger countries, and environmental problems are exacerbated because of their small sizes.

Lack of marine protected areas (MPAs)

There are very few government marine protected areas in the Pacific Islands. The lack of MPAs is partially due to a lack of local awareness of both environmental issues and the need for biodiversity conservation, and inefficient national governments. It is also because western concepts of 'national parks' are inappropriate. The land (and often the sea) are communally owned by traditional tribes and clans, and have great cultural and spiritual values. Land-owning groups of significant places will not often relinquish their ownership. Fish remains essential in the subsistence economy; there are often simply no alternative foods, and 'protection' from fishing is impossible. However, community land and sea tenure also brings positive benefits.

Restoration of sea tenure

While the colonial powers, and subsequent national governments, did not recognise customary sea ownership, there are now moves in some PICs to legally recognise sea tenure. A change in Samoa's constitution recognised local government bylaws (which included sea tenure) in 1990. Fiji is planning to legally restore sea tenure of the 410 customary fishing areas (*qoliqoli*) this year.

Samoan model

Samoa was one of the first countries to develop a system of community-based fisheries management. Through an Australian AusAID project in 1995–2000, local village communities were encouraged via a participatory process to develop their own fisheries management plans, which included fisheries refugia or protected areas, controls on fishing gears and effort, and alternative fisheries such as the abundant offshore tunas. Today 40% of Samoa's coastal villages are in the program, and a parallel system of biodiversity MPAs is underway.

LMMA model

'Locally managed marine areas' (LMMA) is based on similar participatory processes and management tools, and has been

A network of locally managed marine areas has been established on Fiji's Coral Coast. Photograph by Leon Zann.

very successful in Fiji and other countries in recent years. The LMMA Network, a learning network of practitioners from communities, non-government organisations (NGOs), government, universities and other organisations, was established in 2000 to share information and experiences in community-based management of marine resources.

LMMAs are developing momentum in the region, having been established in Fiji (33), Indonesia (7), Palau (1), PNG (7), Phillipines (5), Pohnpei (1), and Solomon Islands (10).

While LMMAs are an important development in the region, the actual areas protected are very small (total 800 km^2), and they are probably ineffective for fisheries restoration. As they have been largely driven by overseas NGOs for conservation purposes, there is a danger of them lapsing when external funding ceases. They also require better scientific under-pinning.

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Also refer to Leon Zann's article in *Waves*, Vol. 11, No. 1

Above: Planted mangrove compensatory wetland, Fiji.
Below: Surveys for MPAs in Fiji.
Photographs by Leon Zann.

International Conference on Community-Based Management and Sustainable Development, Fiji 2006

The University of the South Pacific, which services the tertiary training needs of 12 PICs, is planning a conference in mid-2006 to discuss community-based management, ways of integrating fisheries and biodiversity objectives, traditional knowledge and science, coastal and catchment management and sustainable development.

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A summary of South Australia's marine protected areas

J.L. Baker, Marine Ecologist, South Australia

Reviewed by Dr Scoresby Shepherd

South Australia's (SA) marine jurisdiction stretches across more than 3,700 km of coastline, comprising eight bioregions, within three large demersal provinces, that span from warm to cool temperate waters.

SA's waters contain large areas of temperate saltmarsh, mangrove and seagrass habitat, and include many thousands of square kilometres of highly diverse macroalgae- and invertebrate-dominated rocky reefs. Coastal wetlands are also important because SA is a dry State, with few estuaries that have significant freshwater influences.

There are high levels of species richness in SA, and many rare and endemic species. SA also supports numerous species of tropical or subtropical affinity, as well as cool/cold temperate species shared with Tasmania.

First MPAs

SA was one of the first Australian States to proclaim marine protected areas (MPAs). Six aquatic reserves were established in 1971, with eight more established or extended over the following two decades. Aquatic reserves were proclaimed for various purposes, including habitat protection, conservation of nurseries for economically important species, threatened species protection, and important sites for recreational diving, research, and education.

Most of the existing aquatic reserves are relatively small (the largest is ~3,230 hectares, at Whyalla - Cowled's Landing; the smallest is Goose Island, 54 ha). Not all are highly protected – a number of these reserves permit spearing of finfish and sharks, bait-digging and crab-collecting.

During the past two decades a number of specific-purpose areas have been added to the MPA suite, including rock lobster sanctuaries, various no-netting zones, no-spearfishing zones, and marine extensions of island conservation parks.

SA's existing MPAs do not provide a comprehensive, adequate and representative system of MPAs.

Many reserves are small, and clustered in limited parts of the gulfs; most bioregions and habitats are significantly under-represented; some are 'paper parks' with no prohibition or management of activities (e.g. extensions around island conservation parks); some are continually subject to numerous pollutants; and most are not well monitored or managed.

During the past decade, only one substantial MPA has been established, the large, multi-zoned Great Australian Bight Marine Park (GABMP) – 168,320 hectares in state waters and 1,920,759 ha in Commonwealth waters. The GABMP was established largely under Commonwealth direction and funding, and was declared under three different Acts. Much of the park area is not formally protected from exploitative activities.

During the 1990s there was a shift toward developing a bioregionally and ecologically representative system of MPAs to contribute more substantially to biodiversity conservation. Despite a significant lack of state-level resources, considerable efforts have been made since 1991 to research and document the nearshore habitats of SA's marine bioregions, and to collate existing information on marine biodiversity. Due largely to Commonwealth support during the past decade, sufficient information has been collated to identify areas for an adequate and representative system of MPAs in each bioregion. Offshore components of some bioregions represent challenges which have not been adequately addressed to date.

The State Government has released a policy on MPAs, and has committed to establishing 19 large, multi-zoned MPAs, spread across seven of the eight bioregions. MPAs in the eighth bioregion (Eucla), which currently contains the GABMP, are to be considered at a later stage.

Representative System of MPAs

Currently SA has less than 5% of its waters within recognised MPAs, and an even smaller proportion of that is within highly protected MPAs. The proposed South Australian Representative System of Marine Protected Areas (SARSMPA) has the opportunity to substantially increase the highly protected proportion of SA's marine environment. The SA Government proposes large, zoned MPAs that contain both highly protected *sanctuary zones*, and other zones for various uses.

The planning process for new MPAs has been controversial and protracted. Existing MPAs are declared under the *SA Fisheries Act 1981* or the *National Parks and Wildlife Act 1972*, or both (GABMP). Specific MPA legislation to accompany the development of the SARSMPA is warranted and has long been proposed, but there are concerns the delays inherent in passing new legislation will further postpone the long overdue declaration of new MPAs.

Commercial industry groups have expressed limited support for MPAs, provided that adequate compensation is paid to those suffering economic loss. No details of compensation have yet been released by government. Other issues plaguing the SARSMPA's development include poor integration of State Government-led marine planning with, specifically, the planning and zoning for the SARSMPA. Additionally, conservation groups have criticised the multi-zoned MPA model and have been concerned about the lack of formal community involvement.

The 'pilot' area for the SARSMPA is the yet-to-be-declared, multi-zoned Encounter Marine Park, for which a draft zoning plan was released in February 2005. Some conservation groups have questioned the adequacy of protection in the park, and the recreational fishing lobby has noisily opposed reductions in permitted angling locations. Unless such opposition can be countered, the development of new protected areas in SA may be further delayed or even jeopardised.

There is an opportunity for the proposed large, multi-zoned MPAs to secure significant proportions of each bioregion in highly protected sanctuary zones. There is strong, ongoing support for fully protected MPAs in SA, as a recently formed alliance of marine conservation groups attests. For those who care about protecting SA's marine environment, the challenge now is to work towards achieving this by supporting highly protected zones within the SARSMPA.

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Western Australia's marine protected areas – a summary

Trevor J. Ward, Institute for Regional Development, University of Western Australia

Reviewed by Rachel Siewert and Lynnath Beckley

Western Australia's marine jurisdiction comprises 18 bioregions covering about 126,000 km^2 of mainly shallow coastal waters along 13,000 km of coastline, spanning a range of more than 20° of latitude (14° to 35°) and in places extending out to 100 km from the coast. This area contains large proportions of both the highly endemic temperate Australian habitats and species and the tropical Indo-West Pacific centre of species richness, and extensive tropical–temperate transition areas. WA hosts marine biodiversity components of high global biodiversity value, including about 20,000 km^2 of the world's most diverse seagrass beds, about 2,500 km^2 of mangrove forests, one of the world's largest fringing coral reef ecosystems (Ningaloo Reef, 290 km long) and one of the world's most southerly high diversity coral reef systems (Abrolhos Islands, 28°S, 122 islands). Because of its richness, endemism and spatial scale, WA is probably the most biodiverse jurisdiction of this size. This represents a major component of the world's marine biodiversity, so the effective conservation of WA's marine biodiversity is therefore a matter of global importance.

Marine protected areas

Marine protected areas in WA are designated as marine nature reserves (highly protected), marine parks (four zones of use, including no-take sanctuary zones), and marine management areas (multiple use). In the late 1980s and early 1990s, although faced with a dearth of biodiversity knowledge, an expert group of agency officials and scientists identified areas of high conservation interests around the WA coast. These areas are concentrated on nearshore and 'icon' habitats, they remain the basis for the ongoing program of declaration of MPAs in WA.

Up to 1995, WA had declared six MPAs:

- Marmion Marine Park, 9,350 ha, gazetted May 1987;
- Ningaloo Marine Park, 235,412 ha, gazetted April 1987;
- Rowley Shoals Marine Park, 23,388 ha, gazetted May 1990;
- Shoalwater Islands Marine Park, 6,545 ha, gazetted May 1990;
- Hamelin Pool Marine Nature Reserve, 132,000 ha, gazetted May 1990;
- Shark Bay Marine Park, 748,735 ha, gazetted November 1990.

This list does not include the single WA estuarine MPA: Swan Estuary Marine Park, 358 ha, gazetted May 1990.

Since 1995, a further three marine parks have been declared:

- Montebello Islands Marine Park (58,375 ha);
- Barrow Island Marine Park (4,269 ha);
- Jurien Bay Marine Park (82,376 ha).

In addition there have been major extensions to the Ningaloo Marine Park (27,913 ha) and Rowley Shoals Marine Park (65,762 ha), and two marine management areas (MMA) have been declared: Barrow Island MMA (116,616 ha) and Muiron Islands MMA (28,616 ha).

Highly protected zones

Overall, about 2.5% of the WA marine jurisdiction is contained within highly protected zones (sanctuary zones, nature reserves and no-take zones in MMA). Although 12% of the WA marine jurisdiction is within some form of MPA, much of this provides only limited protection for biodiversity, and the existing system of MPAs is not fully comprehensive or representative. Of WA's 18 bioregions, 12 have no MPAs.

Also, while some bioregions have significant areas protected within MPAs, this does not necessarily indicate that adequate samples of their biodiversity are protected, because the habitats and species protected probably do not represent all of the types contained in the bioregion. Nonetheless, for the existing MPAs, WA has a strong program of management, and well-designed management plans are either now in place or are under development.

Legislation

The establishment of MPAs in WA is confounded by highly anachronistic legislation that classifies all marine species other than 'wildlife' (mammals, reptiles, birds and amphibians) as 'fish' under the WA *Fish Resources Management Act 1994*. This means that all non-commercial species of plants, invertebrates and fish, as well as commercial species, are managed by the Department of Fisheries. Also, the creation of any new MPAs requires the agreement of the Minister for Fisheries, effectively providing for a veto over any proposals that may be unacceptable to commercial fishing interests. This provides for a confused regulatory environment and a tortuous and inefficient process for the establishment of new MPAs, and has resulted in only limited protection for much of WA's marine biodiversity. Among other problems that have arisen, the conservation stakeholders have claimed (in relation to Jurien Marine Park) that the sanctuary zones are highly inadequate and do not provide comprehensive or representative samples of the region's biodiversity within areas of high protection.

Future

A number of new marine parks are well advanced in the planning process. High levels of protection have been recently achieved for Ningaloo Marine Park (33% of Bioregion 'NIN' is dedicated to no-take), with public and political support, indicating strong public support for high levels of protection for WA's highly valued marine ecosystems. It is not clear if there will be such public support for other planned MPAs, but if they are based on systematic conservation planning principles that provide for appropriate levels of protection and zoning, the new marine parks will make important contributions to the further protection of WA's marine biodiversity.

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Marine protected areas in the Northern Territory

Patrick O'Leary, formerly NT Regional Coordinator, MCCN

Reviewed by Kelvin Leitch

The Northern Territory's only marine national park is combined with a terrestrial protected area on the Cobourg Peninsula north-east of Darwin to form Garig Gunak Barlu National Park (meaning the land and the deep blue sea). Of its 450,000 ha, the marine/intertidal park occupies approximately 230,000 ha and contains a variety of habitats. Besides this and the coastal zone of Kakadu National Park (which is managed by the Australian Government), there is little in the way of marine protected areas (MPAs) actively managed for biodiversity conservation by the Northern Territory Government. There are some small reserves around the Darwin area with most of these allowing for recreational fishing.

Park management

Garig Gunak Barlu was established in stages as a result of a negotiated settlement of a land claim. It is managed in part under its own dedicated legislation which establishes a joint management board with local Aboriginal Traditional Owners. While Traditional Owners have a majority on the park board, this does not give them control over aquatic resource management within the waters of the park. A committee operating under the NT *Fisheries Act*, called the Cobourg Fisheries Management Area Advisory Committee, advises on fishing matters. This committee is made up of recreational and commercial fishing representatives, aquaculture interests, government agency representatives (including marine police) and Aboriginal Traditional Owners. This committee has a strong influence over the marine and fisheries components of the marine park management plan.

Current uses of the park include extensive pearling aquaculture; commercial netting and linefishing; commercial mud crabbing; trepang (bêche-de-mer) fishing; both commercial and non-commercial recreational fishing; diving; and Aboriginal subsistence use. The draft management plan currently awaiting approval is likely to include some zones preventing commercial and recreational fishing; some zones where Traditional Owners have voluntarily consented to exclude hunting of turtle and Dugong, and some privacy zones around Aboriginal coastal outstations which allow exclusive subsistence use by Aboriginal Traditional Owners.

Management plans and science

Drafting of this management plan has been protracted, suggesting weakness in the legislative and policy framework and likely reflecting the perceived political influence of fishing interests. For terrestrial parks, the Parks and Wildlife Service is clearly the lead agency and the relevant legislation it operates under gives stronger authority to agency and Traditional Owners to protect natural and cultural values as a priority in drafting management plans. For Garig Gunak Barlu the situation seems less clear given that the park board does not have bylaw making powers for the marine park under the relevant legislation.

An additional challenge to the management planning process in Garig Gunak Barlu is the lack of adequate scientific information about park habitats and ecosystems to inform decision-making. Given that it may be some time before better information is available, there is also a need for a guided decision-making process which establishes a framework for how to make the best conservation decisions using the information that does exist, including the knowledge held by Aboriginal custodians.

Management issues

For some years Traditional Owners have argued the case for developing an integrated management plan for the land and sea with stakeholder input incorporated in one management plan overseen by the park board. While this course of action would appear to offer many benefits in terms of park management, it has not yet been supported by the NT Government.

In some respects the hindrances to developing better conservation management of Garig Gunak Barlu park are reflected in the wider marine estate. They might be summarised as the following:

- lack of strategic focus in available marine science resulting in very little useable or useful information to assist marine park selection, planning and management;
- lack of a clearly articulated policy direction from the NT Government setting out why MPAs are important and how to prioritise issues in their management;
- lack of a practical decision-making framework to allow progress in MPA implementation against the existing poor information background;
- lack of clarity in agency responsibility and goals, stemming partly from a legislative framework that does not encourage agency leadership or provide structured pathways to implementing effective MPAs.

Future MPAs

While the above may paint a somewhat gloomy picture with regard to government commitment to marine protected areas there is some light on the horizon.

- The Parks and Wildlife Service has created a new senior marine scientist position to enhance strategic leadership to marine conservation.
- The NT Government is about to release a revised Parks and Conservation Masterplan following extensive negotiation with land councils and other stakeholders around improved joint management arrangements.
- A comprehensive review of environment legislation has been announced and the NT *Fisheries Act* is currently under review presenting both opportunities and challenges for MPA supporters.

There is no doubt the NT has a long way to go with MPAs and has many challenges ahead, not least of which will be developing an approach to MPAs which wins the support of the Aboriginal community. If some serious commitment is applied to the initiatives described above, however, MPA advocates may have room for cautious optimism.

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Note: This article does not reflect the personal views of Kelvin Leitch, nor those of the Northern Land Council.

Marine protected areas in Queensland – progress and challenges

Richard Leck, National Marine and Coastal Policy Officer, WWF Australia

Reviewed by David Briggs

Queensland's coastal waters, including internal waters such as channels and bays, cover approximately 132,000 km^2 along about 6,000 km of mainland coastline, extending from the Gulf of Carpentaria (west) and Cape York (north) to Point Danger (south-east). If Queensland's 1,165 offshore islands and cays are included, the coastline measures about 9,500 km.

Queensland's marine environment hosts a number of globally significant biodiversity values, including:

- three of Queensland's five World Heritage Areas occur in coastal/marine areas - the Wet Tropics, the Great Barrier Reef and Fraser Island;
- the world's largest and most complex coral reef system – the Great Barrier Reef;
- the most diverse representation of wetlands in Australia including four internationally recognised Ramsar wetlands – Bowling Green Bay (35,500 km^2), Moreton Bay (113,314 km^2), Shoalwater and Corio Bays (239,100 km^2) and the Great Sandy Straits (93,160 km^2);
- six of the world's seven species of marine turtles breed in Queensland's coastal zone, with the most significant Loggerhead Turtle population in Australia occurring in Moreton Bay and one of the world's largest Green Turtle nesting aggregations occurring on Raine Island (Northern GBR);
- approximately 75% of Queensland's shorebird population is clustered in three coastal locations – south-east Gulf of Carpentaria (Karumba), Hervey Bay/Great Sandy Strait and Moreton Bay; and
- the intertidal/coastal zone is very important to the Indigenous Traditional Owner communities and has a range of cultural resource values.

Progress

Considerable progress has been made recently to boost protection for Queensland's largest and best-known marine protected area (MPA) – the Great Barrier Reef Marine Park (GBRMP). In July 2004, the new Australian Government GBR zoning plan increased the percentage of marine national park zones – places where commercial and recreational fishing are prohibited – from less than 5% to more than 33% of the marine park. The new zoning plan creates the world's largest network of marine national park zones covering more than 11 million ha.

To complete the picture, the Queensland Government implemented the Great Barrier Reef Coast Marine Park (GBRCMP) in November 2004. The Queensland Government has jurisdiction over the intertidal area of the GBRMP above the mean low-water mark, and the GBRCMP mirrors most of the adjacent Commonwealth zoning in these inshore waters.

While the Queensland Government should be applauded for establishing the GBRCMP – effectively creating Australia's longest state marine park – there has been much less progress in establishing MPAs in other regions of the State. This is despite the Queensland Government's long-standing election commitment to:

'Continue to review and strengthen the State's regulatory protection of marine parks by: advancing our commitment to establish a continuous system of marine parks from the Gold Coast to the Gulf of Carpentaria'.

This 'border to border' marine park commitment remains outstanding, with no commitment that it will be fulfilled in the near future. Even in regions where the Queensland Government is belatedly establishing new marine parks, the percentage of marine national park zones proposed is minimal.

Future

The Queensland Government intends to declare the new Great Sandy Marine Park (GSMP) (Northern Section), which includes two existing marine parks (Woongara and Hervey Bay), by late 2005. The proposed new park begins at the southern edge of the GBRMP, extends to the limit of Queensland jurisdiction and continues south to Double Island Point. Among other significant features, it includes the Fraser Island World Heritage Area, the Great Sandy Strait Ramsar Wetlands and a number of species of international and national conservation significance – including Humpback Whales, marine turtles and Dugongs.

The proposed zoning plan for the GSMP (Northern Section) only designates 3.8% of the park's area as marine national park zones. This level of protection is inadequate for a region of such high biodiversity values and is inconsistent with the zoning of the Queensland Government's GBRCMP (approximately 20% of this park was zoned as marine national park).

Moreton Bay, the marine backyard of Brisbane, has unique reef islands and corals and supports a rich diversity of species, including the southernmost Dugong population and large numbers of migratory and wading birds. It is also under considerable pressure due to its location next to the fastest growing urban area in Australia. Its catchment already supports 2.6 million people and is under continuing developmental pressure, particularly in coastal and riverine areas. It contributes the most seafood tonnage in Queensland by area and has the largest amount of boat traffic in the State.

The Moreton Bay Marine Park (MBMP) zoning plan protects less than 1% of its area in marine national park zones. The Queensland Government is required to begin reviewing the zoning of MBMP, which will likely begin within the next year. Judging by the paltry level of protection proposed for the GSMP, considerable public interest and support is needed to convince the Queensland Government to take a more responsible, bolder approach to Moreton Bay zoning.

Lastly, a seemingly forgotten component of Queensland's marine jurisdiction is the Gulf of Carpentaria. The Queensland Government's reluctance to effectively engage in the Australian Government's Northern Regional Marine Planning process presents considerable challenges to establishing MPAs west of the Cape York Peninsula.

While it is heartening to see the overwhelming public support that greeted the increase in protection for the GBRMP, it is yet to be determined whether sufficient public and political will exists to establish similar levels of protection throughout the rest of Queensland's marine environment.

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Marine protected areas – the NSW experience

Dr Tim Anderson, University of Sydney

Reviewed by Dr Dave Pollard and Dr William Gladstone

The development of marine protected areas (MPAs) in NSW over the past decade has involved heightened campaigns and substantial changes in management structures. The principal MPA developments were the new marine park system; extensions of NSW Fisheries aquatic reserves; and habitat protection areas for the critically endangered Grey Nurse Shark. Despite the developments, progress has often been slow and disappointing.

Marine parks

The 1995 Labor Party promise to establish a 'comprehensive system of marine parks' became a relatively weak *Marine Parks Act* in 1997. Unlike terrestrial national parks, these areas were not dedicated specifically to the conservation of animal and plant life, but rather supported 'multiple-use', of which fully protected/no-take sanctuary zones (IUCN category 1) are one small part. After a battle between government agencies, the management of marine parks was given over to a triumvirate of NSW Fisheries (NSWF), the National Parks and Wildlife Service and the Premier's Department. A handful of staff was appointed to this new Marine Parks Authority.

The first two marine parks were declared fairly quickly, but under the new law no effective protection comes into place until zoning and management plans are declared. It was late 2002 before the Jervis Bay Marine Park (JBMP) and the Solitary Islands Marine Park (SIMP) had such plans. This six-year delay indicates how glacial developments were, in the face of government apprehensions over the reactions of fishing lobbies.

What became JBMP had been the site of earlier failed plans – a nuclear power plant, a steel mill, a naval munitions dump and a marine reserve. Subsequently, a state and a Commonwealth national park (the latter with a marine extension and joint Aboriginal management) were established in the bay. At the end of the process, marine sanctuary zones comprised 20% (4,253 ha) of the JBMP.

Much of what became the SIMP had been a marine reserve since the early 1990s. To evolve into a marine park, a second round of planning and zoning was required, arousing fishing concerns. A commercial fishing licence buy-out was eventually arranged and by 2002 sanctuary zones accounted for 12% (8,650 ha) of the SIMP.

Lord Howe Island Marine Park – under its own resident-dominated management system and subject of a World Heritage listing – became the State's third marine park, incorporating 27% (12,500 ha) of the park in sanctuary zones. The fourth candidate, Cape Byron Marine Park, has a draft plan which foreshadows 27.5% (6,080 ha) sanctuary zones, and incorporates the Julian Rocks Marine Reserve.

The slow progress involved in zoning these marine parks caused uncertainty and suspicion, although the outcomes in terms of fully protected areas represent an historical breakthrough. Nevertheless, the complex nature of these 'multiple-use' plans makes education and compliance both challenging and a priority.

The NSW Marine Parks Research Committee proposed that each of the State's six marine bioregions will have a large marine park by 2007, and scientists, divers and conservationists are calling for 20% of NSW waters to be fully protected in no-take sanctuaries.

Aquatic reserves

The competition for control of marine parks led to important changes within NSWF (now the Department of Primary Industries). Traditionally a resource-harvesting agency, NSWF argued its marine expertise in marine parks, developed new plans for aquatic reserves and invited the State's peak conservation body, the Nature Conservation Council, to provide representatives for a range of new advisory committees/councils.

Prior to the *Marine Parks Act*, NSWF had declared several aquatic reserves, with mixed levels of protection, the largest being the Solitary Islands. The development of new aquatic reserves ran in parallel with the marine parks process, but produced relatively poor results. A reserve at Cook Island (Tweed Heads) was declared in 1998, but as at 2005 still lacks a zoning plan. Six aquatic reserves and several additional, small intertidal reserves were declared in 2002, but only one included a sanctuary zone. Significantly, that new reserve (Cabbage Tree Bay) gained its status because of a strong campaign by local conservation groups. The NSWF approach to aquatic reserves seemed to have systematically excluded full (ecosystem) protection, maintaining its tradition of regulating particular extractive activities.

Grey Nurse Shark 'sanctuaries'

The appropriateness of NSWF as the agency with responsibility for endangered marine species was tested with the discovery that the Grey Nurse Shark (GNS) population estimate was around 300 and close to extinction. The shark was listed as endangered in August 2000 and 'critically endangered' in 2002.

In March 2001, a NSWF-selected GNS advisory committee unanimously recommended fully-protected sanctuary zones for the 10–12 identified GNS critical habitat areas. This advice was ignored. Instead, critical habitat protection zones which allowed certain types of fishing were established. Sharks continued to die. After protests, NSWF reviewed its measures, recognising that accidental hooking was a major threat. However, the bait and tackle industry maintained its opposition to fully protected zones. In June 2005 the NSW Government effectively abandoned the wild GNS population, declaring plans for a captive breeding program and a scuba diving fee to fund this experiment. Conservation groups continue to press for 1500 m no-take sanctuary zones. In contrast to the NSW policy paralysis, the Queensland Government declared sanctuary zones around its four GNS critical habitat areas. The Commonwealth Government also moved to fully protect two offshore GNS sites, at Pimpernel Rock and Cod Grounds.

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Victoria's marine protected areas – 1978 to 2005

Dr Geoff Wescott, Associate Professor of Environment, Deakin University, Melbourne.

Reviewed by Chris Smyth

History

In May 1982 the new Victorian Labor Government promised to carry out a comprehensive study of Victoria's coastal waters and establish a suite of marine protected areas (MPAs). At the time Victoria had one MPA: the Harold Holt Marine Reserves (declared in 1978) at the head of Port Phillip Bay – a multiple-use reserve with a small no-take area.

Over the next decade a few marine parks, marine reserves and some marine and coastal parks were reserved; all were multiple-use and lacked clear legislative protection.

Despite the May 1982 promise, no comprehensive study was commissioned until the dying days of the Labor Government in 1992. The Marine and Coastal Study, conducted by the independent government advisory body – the Land Conservation Council (LCC, later replaced by the Environment Conservation Council, ECC), continued for over eight years (and included extensive investigations and community consultation) but the final recommendations of the ECC to the government in August 2000 were still not the end of the long saga.

During these independent investigations and consultations, the Kennett government was replaced in 1999 by the Bracks government which had, within its election policy, a commitment to establish a comprehensive, adequate and representative system of marine national parks.

The first Bill to establish the promised system of marine national parks was tabled in State Parliament in mid-2001 (minus the two ECC-recommended MPAs at Cape Howe and Rickett's Point). It was later withdrawn when the Bracks Government (a minority government at the time) realised it did not have the numbers to pass it. The Opposition parties would not support the Bill, being highly critical of the amount and process of financial assistance offered to commercial fishers. Changes to the assistance package, the building momentum of community support for the proposed MPAs (due to NGO campaigning), strong support within the State's bureaucracy and the Bracks government's election commitment to establish the system of MPAs eventually saw the Bill passed mid-2002.

These MPAs cover just over 5% of Victoria's coastal waters, leaving 95% for relatively under-controlled resource use. All 13 national parks and 11 sanctuaries were declared under an amendment to the *National Parks Act 1975*. They are all high protection IUCN Category I or II i.e. 'no-take', and were proclaimed in November 2002 – ten years after the LCC study commenced its study.

Victorian MPAs

Victoria's marine national parks are at Cape Howe, Point Hicks, Ninety-mile Beach, Corner Inlet, Wilsons Promontory, Bunurong, Churchill Island, Yaringa, French Island, Port Phillip Heads, Point Addis, Twelve Apostles and Discovery Bay. The marine sanctuaries are at Beware Reef, Mushroom Reef, Ricketts Point, Jawbone, Point Cook, Mushroom Reef, Point Danger, Eagle Rock, Marengo, The Arches and Merri.

Over the past 25 years other MPAs have been declared in Victoria, although these are predominantly multiple-use areas and have little legislative protection: Nooramunga and Corner Inlet Marine and Coastal Parks, Point Cook Coastal Park, Shallow Inlet Marine and Coastal Park and Wilsons Promontory Marine Park.

Finally many terrestrial parks under the *National Parks Act 1975* are declared to low-water mark and are given *de facto* protection to the intertidal zone. As national, state and coastal parks now cover over half of the Victorian coastline, this theoretically gives some conservation coverage to a lot of the intertidal zone. Some examples of these parks are Bay of Islands Coastal Park, Cape Schanck Lighthouse Reserve, Mornington Peninsula National Park, Port Campbell National Park, The Lakes National Park and Wilsons Promontory National Park.

Hence, from a protected area perspective, Victoria has an impressive array of marine and coastal protection with protected areas varying in degrees of protection from high (no-take) to low (multiple-use).

Unfinished business

However, there is quite a bit of 'unfinished business' arising from other recommendations in the LCC/ECC Marine and Coastal Study and other reports.

Some of the areas of marine conservation still needing work include:

- the protection of intertidal invertebrates (unprotected outside declared protected areas);
- the allocation of coastal foreshore/intertidal areas to recreation and conservation zones; and
- proposals for either the 'marinising' of the Victorian Coastal Strategy or possibly a separate Marine Strategy/Plan that would develop spatial management arrangements for the 95% of Victoria's coastal waters not included in MPAs.

There are also some omissions from the MPA system e.g. no mudstone-based MPAs on the Great Ocean Road between Point Addis in the east and Port Campbell in the west, Victoria's most iconic coastal area, nor the area around Cape Liptrap.

Nevertheless the suite of high protection MPAs declared three years ago is an excellent starting point for further improvement in the conservation and ecologically sustainable use of Victoria's coastal and marine environment. The current marine habitat mapping program (Deakin University/Parks Victoria/Frugo/CRC Coastal) and the rocky shores monitoring project (Museum of Victoria), will both be crucial to improving our understanding of just how comprehensive, adequate and representative the current Victorian MPA system is.

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Tasmanian MPAs – the last ten years

Doug Nicol, Department of Conservation, NZ

Reviewed by Graham Edgar

A bit of history

In 1991, the Tasmanian Government created the first marine reserves on the south-east and east coasts of Tasmania – three small reserves at Tinderbox and Ninepin Point in the D'Entrecasteaux Channel; Governor Island (at Bicheno); and a larger reserve at Maria Island. The main objective behind these reserves was biodiversity protection: the three small reserves were to protect specific localised biological features, while the Maria Island reserve was an early attempt to protect a representative sample of eastern Tasmanian biodiversity.

At the time, the Labor Government stated that it would consider creating marine reserves at a range of candidate areas, including the Kent Group of Islands (Bass Strait) and Macquarie Island. In the early 1990s, research conducted by the CSIRO and the University of Tasmania revealed the marine habitats at Port Davey and Bathurst Harbour were of international significance and needed protection.

After 1995

By the mid-1990s all the political parties in the Tasmanian Parliament had policy positions supportive of new reserves at the Kent Group, Port Davey and Macquarie Island.

In the late 1990s, discussions papers were developed on the possibility of new reserves in all or part of state waters (out to three nautical miles from the coast/baselines) in and around the Kent Group of Islands and Port Davey. The Commonwealth Government funded the assessments, development and initial informal stakeholder consultations. Before the draft proposals could be released for consultation, a new State Government was elected with policies supporting reservation of Port Davey, the Kent Group and Macquarie Island and a pledge to deliver these reserves within its first term.

Due to various stakeholder groups' concerns about the *ad hoc* development process of the new marine reserves, the Minister for Primary Industries, Water and Environment instigated the Marine and Marine Industries Council (MMIC). The MMIC's membership comprised state officials and relevant stakeholders, and its first task was to devise an overall strategy for MPAs in Tasmania.

In 2000, independently of this process, a reserve representative of sub-Antarctic marine biodiversity and incorporating all state waters was established around Macquarie Island.

The MMIC delivered the Tasmanian Marine Protected Area Strategy (TMPAS) in 2001. An important feature of the strategy was that any future marine protected areas (MPAs) would be developed by the independent Resource Planning and Development Commission (RPDC), not the State Government. The Minister retained the final authority to accept or reject the RPDC's recommendations.

In late 2001, the Minister provided the RPDC with its first reference – to conduct an inquiry into the establishment of MPAs in the waters in and around Port Davey and Kent Group. After an extensive consultation process, the RPDC made its final recommendations in July 2003, to establish significant MPAs in the whole of Port Davey and all the state waters around the Kent Group.

It should be noted in the case of Port Davey, the Minister did modify the RPDC boundary recommendation, removing one sanctuary zone area (after input from commercial fishing interests) and substituting it with a much less satisfactory area containing little reef, thereby lowering its representative value with regard to the Davey marine bioregion.

Both MPAs came into full effect under Tasmanian law in February 2005 with the gazettal of the necessary changes to the fisheries rules.

These three MPAs contain large no-take areas. The Macquarie Island reserve (all 74,000 ha of state waters) is all no-take. The Port Davey reserve, which includes all the waters within Port Davey and Bathurst Harbour, is a multi-zoned 17,000 ha MPA with 9200 ha of no-take. The remaining 7,800 ha is a 'restricted' zone – allowing fishing activities with a minimal impact on seabed habitat, such as rock lobster and abalone fishing, and handline use. No distinction is made between commercial and recreational fishing in the zoning. The Kent Group reserve (29,000 ha) is also a multi-zoned MPA, with 14,000 ha of state waters around the group being no-take. The remaining 15,000 ha is a similar 'restricted' zone. At present the Commonwealth Government allows shark fishing with gillnets to occur within the Kent Group MPA; however, it is hoped that the Tasmanian and Commonwealth Governments will soon conclude a deal to halt such fishing within the MPA. Urgent action is required to resolve the matter.

Baseline studies were conducted in all Tasmanian reserves apart from the Macquarie Island reserve (due to the expense and remoteness of these islands) and good research is being conducted in most Tasmanian MPAs. Resources allocated for management of the reserves remains inadequate, with little spent on enforcement or public education. At present not a single Tasmanian Government employee works full-time on the management or development of Tasmania's MPA system.

Since 1995, Tasmania has made impressive gains in its total reserved marine areas. Of the nine marine bioregions identified around Tasmania, two are well represented within the reserve system (Macquarie Island and Twofold Shelf [the Kent Group]). Three marine bioregions have some, albeit inadequate, representation (Davey, Bruny and Freycinet). The remaining four regions are not represented at all.

The TMPAS forms an excellent basis to proceed with future nominations. Recently the Tasmanian Government announced its intention to refer to the RPDC the assessment of the Bruny bioregion for potential new MPAs.

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Note: The views expressed in this article are my own and not those of present or former employers.

IMPORTANT DATES

Date & Location	Event	Contact
23–27 October 05 Geelong, Vic	**IMPAC1 – The International Marine Protected Areas Congress** Encompassing the global range of MPAs (including but not limited to inshore, deep water, high seas, and remote locations)	Email: sm@asnevents.net.au Website: www.impacongress.org
31 October – 2 November 05 Townsville, Qld	**Pacem in Maribus XXXI – (Peace in the Oceans)** Building Bridges towards Integrated Oceans Governance: Linking Ocean Science, Engineering, Technology and Policy	Raewyn Dooley Email: easy@conferenceplanners.com.au Website: www.conferenceplanners.com.au
8–11 November 05 Narooma, NSW	**14th NSW Coastal Conference** 'Living on the Edge'	Eurobodalla Coast Convention Bureau Tel: (02) 4471 1085 Email: convention.bureau@eurocoast.nsw.gov.au
13–17 November 05 Melbourne, Vic	**Greenhouse 2005: Action on Climate Change** The conference will be the largest climate change conference held in the southern hemisphere in 2005	Email: info@greenhouse2005.com Website: www.greenhouse2005.com
16–18 November 05 Mandurah – Busselton – Bunbury, WA	**3rd WA State Coastal Conference, Mandurah – Busselton – Bunbury** 'Coastal Solutions: Balancing the Waves of Change'	Website: www.promaco.com.au/conference/2005/coastal
22–24 November 05 Townsville, Qld	**Rainforest Meets Reef Conference** Discussing collaborative research solutions to environmental challenges in the tropics	Louise Goggin Tel: (07) 4729 8404 Email: louise.goggin@crcreef.com Website: www.reef.crc.org.au/about/events/jointconference.htm
4 December 05	**Ocean Care Day** A free annual event held in Manly Ocean Beach, Sydney to celebrate the marine environment	Judy Reize Tel: (03) 9976 2842 Email: judy.reize@manly.nsw.gov.au
11–12 March 06 Sydney, NSW	**6th Australian National Shell Show** This bi-annual event involves a display competition, guest speakers and guests from overseas	John Franklin Email: dif3@bigpond.net.au Website: www.sydneyshellclub.net/program.html
5–10 February 06 Hobart, Tas	**Cephalopod International Advisory Council Symposium 2006** Cephalopod Life-cycles: Biology, Management and Conservation	Tel: (03) 6224 3773 Email: info@cdesign.com.au Website: www.utas.edu.au/docs/aquaculture/CIAC2006/home_page.htm
26 February – 2 March 06	**Sharing the Fish Conference 2006** Focusing on a broad spectrum of fisheries management allocation issues	Tel: (08) 9387 1488 Email: info5@eventedge.com.au Website: www.fishallocation.com/
28 February – 1 March 06	**ABARE Outlook Conference** A market assesment forum for Australian agriculture and natural resources industries	Website: www.abareconomics.com/pages/events/conferences.htm
22–25 May 06 Melbourne, Vic	**Coast to Coast 2006: Australia's National Coastal Conference** Presenting coastal and marine planning and management issues on a state, national and international level	Tel: (03) 9681 6288 Email: coasttocoast@iceaustralia.com

The Marine & Coastal Community Network

The Marine and Coastal Community Network (MCCN) is a national, non-government project that facilitates community involvement in marine and coastal biodiversity conservation initiatives. It is supported by the Australian Government's Natural Heritage Trust through the Department of Environment and Heritage. The MCCN has a Regional Coordinator in most States. The project is administered by the Australian Marine Conservation Society. At present, there are over 10,000 participants in the MCCN including individuals, community organisations, government agencies, industry, researchers and educators.

Who Do I Contact?

MCCN NATIONAL OFFICE (BRISBANE)

National Coordinator – Bill Foster
National Assistant – Prue Barnard
PO Box 5136, Manly Qld 4179
Tel: (07) 3393 5822 Fax: (07) 3393 5833
Freecall: 1800 815 332
Email: nat-off@mccn.org.au
Website: www.mccn.org.au

MCCN REGIONAL OFFICES

Queensland & Northern Territory
Please direct all inquiries to the National Office.

New South Wales
Please direct all inquiries to the National Office.

South Australia – Tony Flaherty
C/- PO Box 720, Port Adelaide Business Centre,
Port Adelaide SA 5015
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Email: sa@mccn.org.au

Tasmania – Christian Bell
PO Box 567, Hobart TAS 7001
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Email: tas@mccn.org.au

Victoria
Please note that the Victorian Office is not currently staffed.
Please direct all inquiries to the National Office.

Western Australia – Edwina Davies Ward
City West Lotteries House, 2 Delhi Street, West Perth WA 6005
Tel: (08) 9420 7206 Fax: (08) 9486 8718 Mobile: 0412 163 846
Email: wa@mccn.org.au

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Please send to:
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Contributions to *Waves* vol. 11(3) Summer 2006

The deadline for articles for the next edition is Monday 5 December 2005 for distribution in early January 2006. Please send 400-word (half-page) or 800-word (full-page) articles to the National Office. Accompanying high-resolution digital images are welcome.

If you wish to be placed on the distribution list for email notification of *Waves* deadlines please contact the National Office. To submit articles to State pages please contact the appropriate Regional Office.

Brochures and information sheets from other marine and coastal organisations may be included in the MCCN newsletter mailout. There is a fee that covers inserting the items and a contribution to postage costs. Please contact the National Office to discuss this service.