

# LAW OF THE SEA BOUNDARIES IN A MARINE CADASTRE

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## **ABSTRACT**

Australia's maritime jurisdiction is defined in domestic legislation consistent with the United Nations Convention on the Law of the Sea (UNCLOS). The outer limits of the various zones defined by UNCLOS have been determined by AUSLIG and are stored in the Australian Maritime Boundaries Information System (AMBIS). AMBIS would form a fundamental part of a seamless national marine cadastral database.

This paper describes how these zone boundaries underpin many related marine boundaries and the impact of this inter-relationship. The paper also outlines some of the complex relationships between State and Federal Government roles and interests in marine cadastre issues.

In viewing these issues, the further development of a national marine spatial data infrastructure is suggested as a more efficient means of access to marine boundaries, as well as, other related marine data.

## **INTRODUCTION**

The United Nations Convention on the Law of the Sea (UNCLOS) is a major force in driving an increasing interest in marine affairs of many countries. It is generally understood that UNCLOS requires nations to demonstrate an understanding of their marine jurisdiction and also to demonstrate that they are using it in a sustainable manner. Underpinning good governance of the marine jurisdiction is the ability to map what interests and rights exist over a particular area of the ocean. Whilst the government has begun to address the wider issue of the efficient administration of our oceans through initiatives such as *Australia's Oceans Policy*, this task is made more difficult by the fact that there is currently no consolidated source of marine boundary information.

Systems for the management and administration of land in a spatial context have been developed over many years but no such system exists for the nation's marine jurisdiction. The ocean environment is more difficult to manage spatially because of the complex web of rights, responsibilities and requirements of a vast array of stakeholders. Whereas overlapping rights and interests in land are the exception rather than the rule, the opposite is the case in the oceans. For instance, petroleum exploration leases can overlap fisheries, defence areas and native title claims, as well as, being subject to environmental protection legislation. As is the case with land management, an essential requirement for the consistent and effective management of the ocean environment is

reliable, comprehensive and accurate spatial information. This introduces the complex issue of defining and quantifying the spatial and temporal interaction of a vast array of rights and responsibilities in the marine environment.

The concept of a marine cadastre has been suggested as a means of recording the various rights and responsibilities of those with an interest in the marine jurisdiction. It is further argued that such a system is required to meet the marine management challenges ahead.

### **NATIONAL MARITIME JURISDICTIONAL BOUNDARIES**

In late 1994, Australia ratified the United Nations Convention on the Law of the Sea (UNCLOS) and the convention officially came into force in November 1994. UNCLOS is a very significant agreement providing international conditions and limits concerning the use and exploitation of the earth's oceans. Included in UNCLOS are rules on how member States (countries) define their maritime jurisdictional boundaries.

Under UNCLOS there are a number of maritime zones defined by their distance from the land, or more precisely, the Territorial Sea Baseline (TSB). Australia's maritime zones are depicted in Figure 1 and explained below:

- Territorial Sea (0-12 nautical miles). Australia has almost full rights although must allow innocent passage.
- Contiguous Zone (12-24 nautical miles). Australia may exercise control to prevent or punish infringements of customs, fiscal or sanitary regulations.
- Exclusive Economic Zone (EEZ) (12-200 nautical miles). Australia has the right to explore and exploit sea bed and water column.
- Continental Shelf (12-350 nautical miles). UNCLOS allows for a country to claim seabed rights on continental shelf areas to a limit (usually 350 nautical miles from the TSB) where a physical continental shelf exists beyond 200 nautical miles.
- Coastal Waters (from the constitutional limits of Australia's States and the Northern Territory to 3 nautical miles from the TSB). Australia's States and the Northern Territory have certain jurisdictional rights [This zone was agreed in the 1980 Offshore Constitutional Settlement and is defined in Coastal Waters legislation].
- Australian Fishing Zone (3-200 nautical miles). In most cases, the outer limit of this zone is identical to the EEZ boundary. (Defined by Fisheries Management Act 1991 (FMA) including the amendments to that Act made by the Maritime Legislation Amendment Act 1994.)

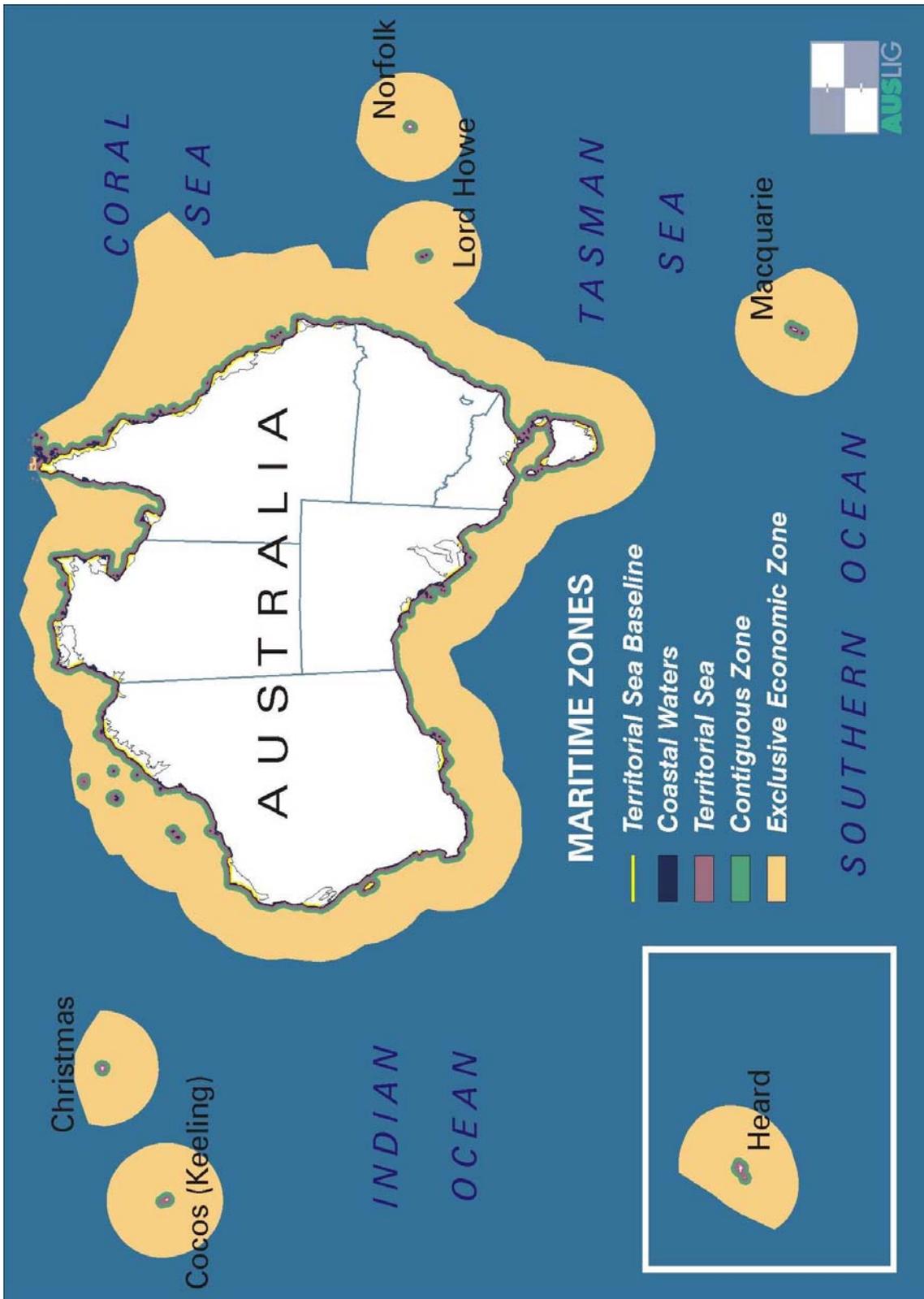


Figure 1 - Australia's Maritime Zones

## **AMBULATORY BOUNDARIES**

The fact that the TSB is based upon a natural feature, the coastline, means that it will change over time. As well, the line of low tide is difficult to determine, and has not been accurately mapped in many areas, adding to the general ‘fuzziness’ of the TSB.

Changes to the TSB will naturally result in changes in the location of the fundamental zone boundaries. This can result in some problems for which complex solutions must be found.

For example, royalties from offshore petroleum and mineral exploitation are distributed according to the location of the coastal waters boundary. In fact some mineral and petroleum leases terminate at the coastal waters boundary. To avoid difficulties arising from the potential movement of this boundaries, both *the Minerals and Submerged Lands Act* and the *Petroleum and Submerged Lands Act* have made special provisions for this. Effectively, these provisions state that the coastal waters boundaries are to be considered fixed for the duration of the lease.

Another consequence of boundary movement is the ambiguity this can cause in the definition of some related maritime boundaries. For example, if a national marine park is defined by coordinates, and these coordinates are intended to coincide with a zone boundary, the true location of the park is uncertain if the zone boundary moves. This problem can be overcome with careful wording of the legislation. However, our experience is that such ambiguity in describing marine boundaries is not uncommon and will cause difficulties for those concerned with marine cadastres.

## **OFFSHORE CONSTITUTIONAL SETTLEMENT (OCS)**

The coastal waters boundary is, in itself, worthy of further discussion in the context of the marine cadastre. UNCLOS does not address a nation's domestic political structure, and this is a factor for Australia where jurisdiction is shared between the Federal Government and the States (and Territories) that comprise the Federation of Australia. Under the 1980 Offshore Constitutional Settlement (OCS), the States (and the Northern Territory) were granted jurisdiction over the zone defined as being three nautical miles seaward of the TSB. Beyond this the Federal Government has a variety of rights and responsibilities to 200 nautical miles from the TSB and even further in some instances.

This division of the marine administration results in more complex management arrangements and necessitates the cooperation between Federal and State Governments. Since the OCS there has been a further blurring of the various State/Federal Government limits with the Federal Government passing various responsibilities beyond the coastal waters limit to the adjacent State and visa versa.

## **AUSTRALIAN STATE BOUNDARIES**

The delimitation between adjacent Australian States is defined as the Adjacent Area Boundaries and defined under the *Petroleum and Submerged Lands Act 1973*<sup>1</sup>. This may cause some complexities for administration of a marine cadastre given that the various States have different cadastral administration systems whereas some maritime

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<sup>1</sup> While the Adjacent Area boundaries were originally proposed for the purposes of this Act, they have become generally adopted as the ‘default’ State delimitation boundaries.

boundaries do not naturally terminate along State lines. For example, fisheries, pipelines, and shipping corridors.

### **THE TERM MARINE CADASTRE**

While surveyors may have no trouble understanding what is intended in the use of the term "marine cadastre", this is not necessarily the case outside our profession. The authors' experience has been that the term is difficult for many to understand and can lead to an incorrect perception. However, rather than tackle the thorny task of terminology, the authors have prudently stuck with the term "marine cadastre" for the purposes of this paper.

An interesting aspect of the maritime jurisdiction is that a strict understanding of the term "cadastre" generally becomes less appropriate with increased distance offshore. Within the coastal zone, maritime boundaries such as oyster leases, aqua-culture, wharfs and ports etc could be considered as an extension of the land based cadastral system. However, further offshore, boundaries tend to demarcate large administrative areas, such as fisheries, marine protected areas and various surveillance areas. The major exception to this is petroleum leases which are already administered by a comprehensive titling system.

As the various jurisdictions further explore the issues pertaining to a marine cadastre, it is likely that each State may have a different approach to the problem, all of which may be different to a Federal Government solution. Most significantly, the States have well developed land cadastres in existence, whereas, the Federal Government does not. Thus, it would be no surprise for the States to approach the issue by extending their current land cadastre to include rights and interests in the marine jurisdiction.

On the other hand, rather than property rights, Federal Government agencies have expressed more concern about ocean use and the management of administrative areas, such as, marine reserves, fisheries and surveillance areas. Whilst the needs of the Federal and State Governments may appear to be different, it is still in everyone's interest to have compatible systems, and like most national initiatives, will require strong cooperation between all jurisdictions to progress this new initiative.

### **THE AUSTRALIAN SPATIAL DATA INFRASTRUCTURE**

The above considerations emphasize the need for Australia's marine cadastre to be an integration of data from numerous agencies within the Federal Government and also from each State. For land based data this problem has been clearly identified and much effort devoted under the Australian Spatial Data Infrastructure (ASDI) initiative.

The ASDI comprises four linked, core components - the institutional framework, fundamental datasets, technical standards and protocols, and clearing-house networks. Closely related to these initiatives is the much debated issue of pricing and access of spatial data.

While the technical solutions for a marine cadastre system are largely available, evidence suggests that the data required is not so available. Development of an efficient data distribution system will require work, however, the real challenge will be establishing the access and maintenance of the fundamental data.

## **NATIONAL COORDINATION AND MANAGEMENT**

Australia's oceans should be regarded as a core national asset which, if managed well, will meet a broad range of economic, social and cultural aspirations. However, recent management practices for the administration of Australia's oceans has tended to be on an industry-by-industry (or sector-by-sector) basis. *Australia's Oceans Policy*, released by the Federal Government in December 1998, provides a framework for integrated management of Australia's marine jurisdictions. The *Oceans Policy* argues that activities such as fishing, tourism, shipping, aquaculture, coastal development and petroleum production must be collectively managed to be compatible with each other and with the ecological health of the oceans.

*Australia's Marine Science and Technology Plan (MS&T Plan)*, launched by the Federal Government on 25 June 1999, addresses existing and emerging issues and priorities for Australian marine science, technology and engineering, including those defined in *Australia's Ocean Policy*. The *MS&T Plan* also highlights the need for a better coordinated national strategy for marine data. The response to this issue was to recommend as a priority the formation of a National Marine Data Group (NMDG) with Federal and State Government representation. The aim of the NMDG would be to coordinate national efforts to collect, preserve and make available basic data on Australia's marine environment. The formation of the NMDG has the potential to assist in the development of an ASDI for the marine jurisdiction.

## **CONCLUSIONS**

Not only do Australia's oceans cover a vast area, but are subject to the interests of a diverse group of individuals and organisations, and are governed by a complex web of government legislation and regulation at the federal, state and local level. International treaties such as UNCLOS and negotiated boundaries between countries also need to be considered. Many items of legislation contain the definition of areas of jurisdiction and rights in geographical terms. Understanding the relationship and interaction between these overlapping and sometimes competing rights presents a complex problem.

Unlike a land based cadastral system oceans cannot be pegged. There are no monuments like fences, buildings, rivers and mountains to suggest where boundaries may lie. In the marine environment, boundaries can only be located with appropriate use of spatial data.

Finally, many marine areas have boundaries coincident with the maritime zone boundaries defined under the UNCLOS. This is an important consideration as these boundaries, being linked to the coastline, are subject to change and therefore require ongoing maintenance. The potential use of out of date information is high.

Clearly much needs to be done to progress the concept of a marine cadastre and, as with land based data, the key to success is cooperation and funding.

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