



5th Western Australian State

# COASTAL CONFERENCE 2009

*Whose Coast Is It?  
adapting for the future*

2D:

Planning Marine  
Environments for  
the Future:  
2.30–3.00pm  
Thursday 8th  
October 2009  
Pleiades Room

## Artificial Structures in Relation to Marine Parks and Reserves

PRESENTER:

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### Abstract

In 2000, the then State Government announced a commitment to the development of the 279 square kilometre *West Coast Dive Park* (dive park) to promote dive wreck tourism in Rockingham, south of Perth. To launch the dive park, a 400-tonne former fishing vessel, known as the *Saxon Ranger*, was scuttled in May 2005. The scuttling of a vessel for tourism purposes was considered to have significant economic and social benefit for marine tourism including dive charter operations and recreational diving. However, the deployment of the vessel within the Shoalwater Islands Marine Park was considered by some to be contrary to the purpose of a marine park, and marine conservation in general. This resulted in the then Minister for the Environment seeking advice from the Marine Parks and Reserves Authority (MPRA) on the issue of artificial reef deployment in the *West Coast Dive Park* and marine parks and reserves in general.

Part of the work of the Marine Policy and Planning Branch (MPPB) of the Department of Environment and Conservation (DEC) is to facilitate the preparation of marine parks and reserves management plans on behalf of the MPRA and the Government, and provide support for the audit of the implementation of management plans. MPPB also provide the MPRA with executive support and policy advice relating to marine parks and reserves.

In 2008, MPPB prepared a background paper for the MPRA which presented a summary of information relevant to artificial reef deployment. It was intended that this information enhance discussions, assist in decision-making and lead to a considered response to the then Minister for the Environment's request for advice.

After considering the information in the background paper the MPRA endorsed a position statement in December 2008—*Artificial structures in marine parks and reserves*.

In developing the position statement the MPRA considered the following issues:

- The definition of artificial reef.
- Regulations governing artificial reef deployment.
- Material used for artificial reef.
- The potential beneficial and negative impacts of artificial reef.

The definition of artificial reef is provided in the Commonwealth *Environment Protection (Sea Dumping) Act 1981* (*Commonwealth Sea Dumping Act*). The MPRA relied on this definition during their discussions.

The Commonwealth Sea Dumping Act regulates the dumping of waste in Australian waters. This Act is complemented in Western Australia by the Western Australian Marine (Sea Dumping) Act 1981 (WA Sea Dumping Act). The WA Sea Dumping Act, while mirroring most of the Commonwealth Act, leaves the regulating of artificial reef 'dumping' to the Commonwealth under the auspice of Department of Environment, Water, Heritage and the Arts (DEWHA) who may allow the deployment of artificial reef under permit.

It is considered by some, that the concept of multi-purpose artificial reefs that would serve the need of commercial and recreational fishers, divers, surfers and nature conservation is an attractive one from an economic and social viewpoint (Jensen *et al.*, 2000). A general view exists that artificial reefs have tourism potential as diver attraction devices (Dowling & Nichol, 2000) and are effective fish attractants and an important fishery management tool (Bohnsack & Sutherland, 1985), particularly in ecologically damaged or low productivity marine environments.

However, it has also been suggested that without basing the construction of an artificial reef upon proper scientific principles, it becomes at best a temporary high relief area of questionable value, or at worst an ocean junk pile whose major value has been as a promotional gimmick of a special interest group (Bohnsack & Sutherland, 1985 after Turner *et al.*, 1969). There is also a view, held by those with a conservation interest, that the disposal of vessels and similar structures is simply large scale, authorised dumping of waste dressed as artificial reef.

A basic question revolves around the issue of whether artificial reefs locally enhance sustainable production or just aggregate resources already present in an area (Brock, 1994; Szedlmayer & Shipp, 1994). Studies have found that fish colonise artificial reefs quite rapidly, sometimes within hours of reef material being deposited (Bohnsack & Sutherland, 1985; Bohnsack *et al.*, 1994).

Increasing productivity, and an overall increase in fish stocks, is generally the most desirable outcome sought from artificial reef (Pears & Williams, 2005). However, studies have found that there may be very little direct evidence for this (Bohnsack, 1989). There is some concern that artificial reefs work to aggregate the last few remaining fishes, increasing their susceptibility to being caught, thus contributing to the decline or collapse of a resource (Brock, 1994).

It has also been suggested that increased productivity is most likely at locations isolated from natural reefs; and for habitat-constrained, demersal, philopatric, territorial and obligatory reef species (Bohnsack, 1989). Production would also be dependent to some degree on the number of larval recruits finding suitable habitat on artificial reef.

Generally, there is limited understanding of the benefits or function of natural reefs within or outside of marine protected areas and given the almost universal constraints on resource allocation for research and monitoring, it could be questioned whether a management body could justifiably shift resources from research and monitoring of a natural reef to research and monitoring of an artificial reef, particularly in marine parks and reserves?

In some parts of the world artificial reefs have been used as a catalyst for *restoration* of the natural environment, and/or the provision of *conservation* benefit in some situations. In Western Australia, serious consideration of these benefits should include a reflection on the intent of the *Conservation and Land Management Act 1984* (CALM Act) in relation to marine parks and reserves. At present the CALM Act is silent on the issue of artificial reef introduction in marine parks and reserves.

With the above in mind the MPRA has established a position statement in regard to the deployment of artificial structures in marine parks and reserves. It was determined that the word 'structures' be used instead of 'reef' due to the variety of material used and range of uses those materials are put to. The MPRA defines artificial structures within its position statement (MPRA, 2008).

## References

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