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# COASTAL CONFERENCE 2009

*Whose Coast Is It?  
adapting for the future*

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Management and  
Engagement:  
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## Multiple Use Management in Cockburn Sound and Owen Anchorage

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### Introduction

Cockburn Sound is located some 20 km south of the Perth-Fremantle area, while Owen Anchorage lies to the north of Cockburn Sound between Parmelia and Success Banks (refer Fig. One). Parmelia Bank actually separates Cockburn Sound and Owen Anchorage. Both embayments represent an area of about 175km<sup>2</sup>. Accessibility in all weather, unique natural assets and proximity to transport routes, industry, port infrastructure and the Perth Metropolitan area have resulted in Cockburn Sound and Owen Anchorage being two of the busiest and most popular marine water bodies in Western Australia.

Development and use of the shores and waters has been ongoing since colonial settlement in 1829 and has resulted in substantial economic benefit to all Western Australians. However these benefits have increasingly put pressure on social and environmental values which need careful management, especially as all types of use intensify.

In the late 1960's to early 1970's most of the seagrass meadows in Cockburn Sound were severely impacted and lost as a result of nutrient enrichment (estimated over 78% of area). Sediments, water and biota were also contaminated with toxicants and pathogens. These impacts were attributed primarily to industrial waste discharges since the mid-1950's. However, other factors are also believed to have contributed such as completion of the causeway to Garden Island and shallow water scallop trawling. Since the 1970's the Western Australian State Government, in partnership with industry, local government and the community, has worked to improve the environmental condition of Cockburn Sound (e.g. from over 2000 tonnes of nitrogen to less than 300 today). This effort over the last 30 years has substantially improved the water and sediment quality within the Sound but unfortunately seagrass meadows have not returned.

Some issues still remain though in regard to tributyltin (TBT) contaminated sediments and biota at Careening Bay and Northern Harbour, and, nutrient enrichment and pathogen transport via surface drainage from the catchment. Seagrass, while never expected to return to pre-1970 levels, has had a slight increase in area (from 20 to 22%), with shoot density at monitoring sites being comparative to healthy seagrass located in Warnbro Sound. Strong community and economic concern for the state of the marine environment, combined with a period of

intense development pressures in the late 1990s resulted in the formation of the Cockburn Sound Management Council in 2000, and a formal approach to the continued effort to maintain the values of Cockburn Sound and Owen Anchorage as a premier multiple-use marine embayment.

### **Cockburn Sound Management Council—CSMC**

The Council is a collective group of twenty-three representatives from a variety of stakeholders and interest groups in metropolitan Perth with an interest in Cockburn Sound and Owen Anchorage. The Council is appointed by the Western Australian Minister for the Environment under Section 25 of the *Environmental Protection Act 1986* and acts as an advisory body under a Terms of Reference and Constitution.

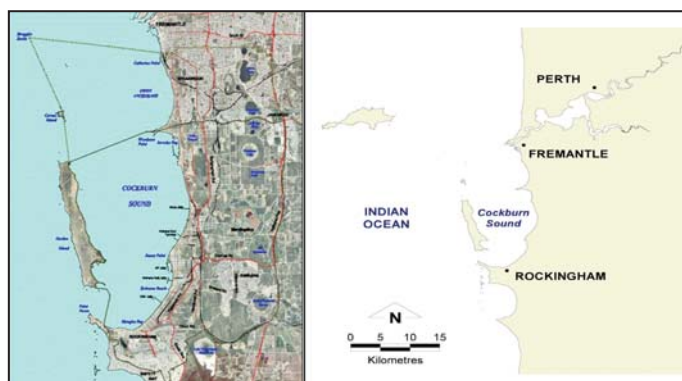
The Council is serviced by officers of the State Department of Environment and Conservation and has an office adjacent Cockburn Sound in Rockingham. Originally the Council's area of responsibility included only Cockburn Sound, but in 2004 government extended the boundary to include Owen Anchorage due to community concern that this area may be adversely affected by development and use over time.

In 2005 the Council endorsed its first Environmental Management Plan (EMP) (Cockburn Sound Management Council 2005), having worked previously with an interim plan (CSMC 2002) for three years while awaiting the completion of the *State Environmental (Cockburn Sound) Policy 2005* (SEP) (Environmental Protection Authority 2005).

The SEP is a guiding policy to proponents, the Environmental Protection Authority (EPA) and the Government of Western Australia to assist with decision-making processes and ongoing monitoring of environmental values relating to ecological integrity, seagrass health and extent, and sediment and water quality in Cockburn Sound. The EMP provides guidance to the Council on a structured way forward to implement the SEP and improve environmental coordination, management and planning for the Sound.

An important part of the Council's responsibility is to provide advice and comment to proponents of development. Often a referral to the Council is made because of Ministerial Conditions imposed on proponents or EPA imposed environmental conditions. At other times proponents are aware of the Council and its collective interests and expertise and seek out advice prior to advancing their proposals. In most cases the advice provided by Council relates directly to the requirements and intent of the SEP, with additional comment offered in relation to the intent of the Council's EMP.

**Figure 1. Cockburn Sound and Owen Anchorage, CSMC Management boundary in Western Australia.**



### **The Multiple-Use Framework**

Cockburn Sound Management Council (CSMC) objective for a Multiple-use Framework is based on its EMP (2005) which directs the Council with a major objective 'To recognise and facilitate multiple-use management of Cockburn Sound and its foreshore'. This objective has been discussed by the Council over the last two years and in April 2007; the Council endorsed the first stage of a three stage process to develop this framework. With a multiple use framework in place the Council felt it could work more effectively providing advice to government and proponents, and offer an informative range of documents to assist the community to form a better understanding of the variety of uses and resources in Cockburn Sound and Owen Anchorage.

The Cockburn Sound Management Council's staged approach to the facilitation of a Multiple-use Framework for Cockburn Sound and Owen Anchorage includes:

#### **Stage 1: Multiple-use and Resource Assessment**

This stage involved the collation of spatial, written, verbal and photographic information. The information presented a picture of past events in Cockburn Sound and Owen Anchorage and where it is presently. A soon to be published document '*Sounding Out*' will be the outcome of Stage 1.

## **Stage 2: Development of a Support Framework for Decision-making Processes**

This stage involves the Council developing strong principles and a vision through which to guide decision-making processes and advice for planning and management in Cockburn Sound and Owen Anchorage.

## **Stage 3: Environmental Management Plan**

This stage will involve the preparation of a revised EMP for Cockburn Sound and Owen Anchorage which reflects the support framework for decision-making processes incorporating the understanding that the Multiple-use and Resource Assessment Project (*Sounding Out*) provided.

The Environmental Management Plan for Cockburn Sound and its Catchment (EMP) (Cockburn Sound Management Council 2005) and *State Environmental (Cockburn Sound) Policy 2005* (Environmental Protection Authority 2005) remain the guiding documents for the Council's effort to protect and better manage and plan for the environmental assets of Cockburn Sound (For examples refer Fig. Two). As the Council has matured and completed many of the recommendations made by the EMP, it has become evident that it is now in a position to undertake a major requirement of the plan—to facilitate and improve multiple-use management in Cockburn Sound and its foreshores.

In the marine environment there is very little private ownership and it essentially remains the last great common on Earth. Administrative boundaries can and do exist but they are generally not exclusive unless there are safety risks or proprietary issues such as ownership of infrastructure and gear (e.g. Port Authority Acts, Defence exclusion zones and boundaries).

The oceanic or bioregional scale multiple-use planning in the marine environment can usually be less spatially complex than that at a local scale, such as that proposed for Cockburn Sound and Owen Anchorage. Complexities arise due to proximity to the metropolitan area and the range of intense uses mixed with highly valued resources that are in these water bodies that provide social, economical and environmental benefits to the whole community.

At present the CSMC's first stage, the Multiple-use and Resource Assessment, is consistent with general methodologies used for most marine planning processes. It provides the foundation of information, a catalogue of current and historical uses, required to assist with informed discussions and decision making on multiple use within and by other parties outside the CSMC.

A close example relevant to the Council's desire to facilitate multiple-use planning is the approach taken by the Albany Harbours Planning Group. This group has successfully worked together to facilitate a collection process to promote integrated multiple-use for the past twelve years through the implementation of a strong locally focussed policy approach. The approach has no statutory basis of its own and its only influence lies in the cooperative manner in which it is acknowledged and implemented by all relevant stakeholders.

The Council is potentially in a strong position to pursue a similar approach, although because the Council is government appointed, the outcomes will also require government support if they are to be successfully and cooperatively implemented.

## **Zoning: Designed or happenstance**

Another example providing guidance to the Council is the work of the 'Guardians of the Fiordlands' in New Zealand. This community-based group successfully coordinated the development of a marine conservation strategy outside a statutory framework and then gained government support because of the detailed, disciplined and responsible approach the group took in regard to the formulation of the strategy.

It is evident however, that the Council is relatively unique in regard to its aspiration to facilitate multiple-use outside a statutory process while also working within the requirements of a state policy and State government departmental agenda's. Also, the level of complexity and maritime use in Cockburn Sound and Owen Anchorage is much greater than the two examples listed earlier, i.e. Albany and New Zealand fiordlands. Most multiple-use approaches developed elsewhere have a statutory basis, with most also having a marine conservation focus. It will be up to the CSMC to assess and determine the best method to meet the needs of its representatives, their organisations and other stakeholders. This will be one of the first steps required in determining a firm direction for facilitating multiple-use.

**Figure 2. Some natural assets of Cockburn Sound, from dolphins and coral to seagrass.**



Existing Multiple-Use management processes utilise zonation as part of their marine planning and management tools. Zoning is a place-based ecosystem management system that reduces conflict, uncertainty and cost by separating incompatible uses and specifying how particular areas are to be used. Zoning can occur by happenstance (as it could be argued first occurred historically in Cockburn Sound), or by design. Zoning by design allows zoning decisions to be made with all of 'society's' goals in mind, not just single exclusive goals. Zoning by design increases the chance that adjacent zones are compatible. However, many areas of China provide an extreme example where zonation is supported by a user-pays system and where significant environmental decline has occurred through unmanaged use of the marine environment.

## The Framework and Goal

The Council's aspiration towards the development of a facilitated multiple-use framework for Cockburn Sound and Owen Anchorage will require a new approach to marine planning and management in Western Australia. It may provide an important example to marine managers in Australia and overseas who are looking to facilitate a multiple-use approach to busy and developing waterways (refer Fig. Three). It could be expected that the creation and implementation of a new design for marine planning and management will be challenging, particularly if not supported by government and the wider community. This may be the major obstacle for the Council realising a multiple-use approach outside a purpose built statutory framework.

Rapid population growth, extreme popularity, recreational fishing and the onslaught of significantly large proposals for the development of port, harbour and marina facilities in Cockburn Sound and Owen Anchorage are culminating in these water bodies being placed under substantial pressure. This pressure is, in the most part, not pollution related, but instead is associated with impacts on remaining environmental assets and ecological values. In essence, cumulative impacts are or potentially could occur with these developments such that some ecological and multiple use thresholds could be exceeded.

**Figure 3. Examples of multiple uses and potential conflicts—from swimming, industrial use, fishing, heavy fishing for iconic species like snapper (Cockburn Sound is the largest nursery for snapper outside Shark Bay, photo courtesy Dept. of Fisheries), to horse agistment, bulk cargo facilities and boat moorings on seagrass beds.**



The facilitation of multiple-use in Cockburn Sound and Owen Anchorage will need to rely on complex well thought out deliberations and a considerable amount of responsible foresight representing all legitimate interests by managers. This will be very necessary because there is a strong whole-of-community expectation that all care will be given in regard to the protection of the remaining marine and coastal environmental attributes and values, all of which have been changed significantly since the first settlers arrived on these shores in 1829. For example, recreational fisheries and other prime recreational and eco-tourism values.

Cockburn Sound and Owen Anchorage can be considered to be the most consistently used, and probably the most economically diverse and valuable coastal waters in Western Australia. All care is required by managers during decision-making as we move forward as a community to fully and equitably utilise the marine environment of the southern Perth metropolitan area for the benefit of all.

The recognition and facilitation of multiple-use management in Cockburn Sound and Owen Anchorage by the Cockburn Sound Management Council is an ambitious undertaking by the Council because of the diversity of its membership. Its also a long 'organic' process. However, the diversity of the CSMC and the strength and interests of its membership will help forge robust discussion and well considered and balanced multiple use advice to decision making parties.

## Conclusion

In summary, the CSMC will establish principles guiding its development of a multiple use framework, assess and utilise a suite of appropriate and tested decision support tools (e.g. game playing capacity with either MARZONE (Marxzan) or Management Strategy Evaluation (MSE) or use a combination of both approaches to frame its future multiple use advice. It will also review and release a new Environmental Management Plan that enshrines a Multiple Use Framework discussed here. Both the Multiple Use Framework and its accompanying Environmental Management Plan will need to have deep community, political and decision making authority(s) support following extensive public and stakeholder consultation.

It is acknowledged by Council that a lack of information exists about several marine natural resources, ecological processes, biodiversity, cumulative impact of uses and detailed recreational and exploitive patterns of use. These are gaps that will need to be addressed, among others, in facilitating a successful multiple-use framework.

The overriding objective of the Cockburn Sound Management Council is to develop and facilitate a politically and community endorsed integrated approach to the use and development of Cockburn Sound and Owen Anchorage in keeping with the *State Environmental (Cockburn Sound) Policy 2005* and Environmental Management Plan 2005 for Cockburn Sound and Owen Anchorage and their catchments.

The presentation for this paper will outline the Cockburn Sound Management Council's journey towards facilitating Multiple-use management of Cockburn Sound and Owen Anchorage, the challenges and expected outcomes that this framework can result in, if appropriately developed, supported, resourced and implemented.

**Steps along the journey** (Thanks to those who contributed photos.)

