

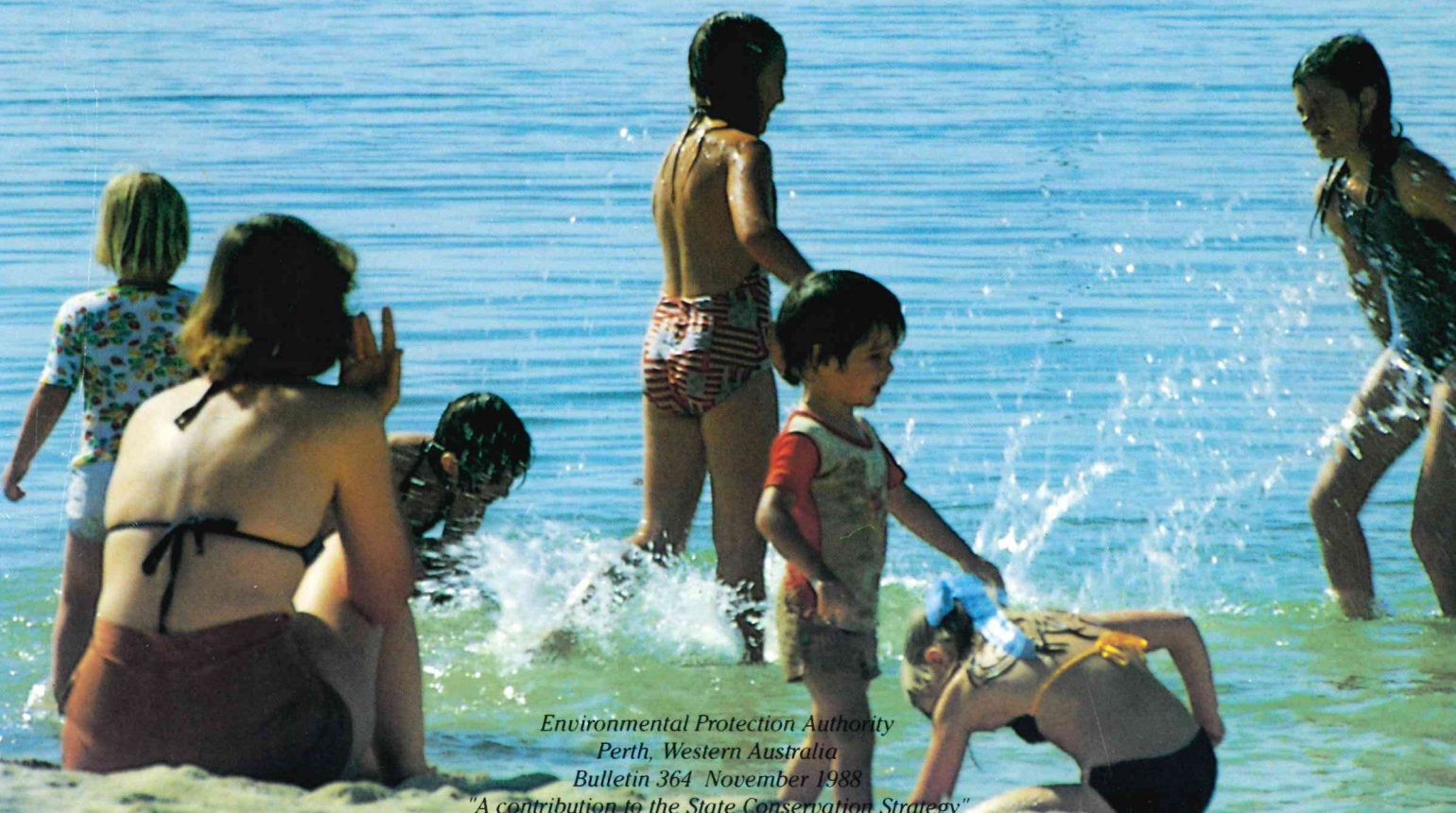
THE COCKBURN SOUND ENVIRONMENT

Safeguarding a Community Asset



Cockburn Sound is a large natural harbour adjacent to the Perth metropolitan area. Its protected waters and beaches are of unique value to the people of Perth for recreation, fishing, aquaculture, industry and as a port.

This wide range of activities in Cockburn Sound can only continue if a clean and healthy environment is maintained. To ensure this occurs and to safeguard a valuable community asset the Government of Western Australia is developing an "Environmental Management Strategy for Cockburn Sound and Surrounding Waters."



Environmental Protection Authority

Perth, Western Australia

Bulletin 364 November 1988

"A contribution to the State Conservation Strategy"

Industry and the Environment

Industrial Development

Industrial development on the Cockburn Sound coastal strip began in the 1950's. This development has continued, and presently industries extend along much of Cockburn Sound's eastern shoreline. Other developments include a causeway which links the mainland with Garden Island where a large naval base has been established. Dredging for lime sands has occurred on Parmelia Bank, and is currently occurring on Success Bank.

Environmental Issues

Although industrial development around Cockburn Sound has brought economic benefits to the adjacent areas of Rockingham, Kwinana and Cockburn, it has also placed stress on the marine environment of the Sound.

The 1976-79 Cockburn Sound Environmental Study showed that industrial discharge in Cockburn Sound had led to a marked deterioration in the water quality, which in turn had resulted in :

- a massive loss of seagrass meadows (about 80%), as a result of nutrient enrichment.
- heavy metal and bacterial contamination of marine sediments and animals.

The study recommended several options to reduce pollution levels in Cockburn Sound, including:

- the construction of a pipeline to divert nutrient-rich sewage effluent away from Cockburn Sound and into the much better flushed waters off Cape Peron.
- the use of more up-to-date technology by industries to upgrade their waste treatment before discharge.

Following the implementation of these recommendations there has been a rapid improvement in the water quality of Cockburn Sound.



Industries extend along much of the Sounds eastern shoreline.



Industrial wastes are discharged into the Sound.

Oblique aerial view of Cockburn Sound and surrounding waters.

An Environmental Management Strategy

The government has initiated a two year study designed to develop an "Environmental Management Strategy for Cockburn Sound and Surrounding Waters" including Warnbro Sound, Owen Anchorage and Gage Roads. This strategy will provide the basis for an integrated approach to the management of this area.

Rationale

This strategy is necessary because although there has been a significant improvement in the water quality in Cockburn Sound since 1979, recent monitoring suggests that the Sound is still in a delicate "state of balance." This means that even a slight increase in pollution (eg. nutrients) may result in a significant deterioration in the health of the plant and animal communities.

Since 1982, seagrass meadows in some areas of Cockburn Sound have continued to decline. This indicates the vulnerability of marine communities that have a history of environmental disturbance and suggests that the remaining marine communities (especially the seagrass meadows) in and around Cockburn Sound may also be vulnerable.

At present there is not enough information available to allow reliable assessments of future

environmental impacts on these marine communities. As the demand for the use of these waters increases through population growth, new industrial developments or the expansion of existing industries, so does the need to provide sound environmental management.

Environmental Management Strategy for Cockburn Sound and Surrounding Waters

The major objectives of the Strategy are:

- to determine the total amount of pollutants that can be discharged and accepted into these waters without adversely affecting their biology and cleanliness.
- to develop a picture of what might happen to the plant and animal communities if:
 - (i) pollution levels are increased eg. by new industrial developments; or
 - (ii) pollution levels are decreased eg. by additional treatment of wastes.

Industry in the area will be asked to support and contribute to the study. Funding will also be provided by the State Government. The success of the environmental strategy will depend on involvement and co-operation of the general public, industry and government agencies.



Cockburn Sound is a popular fishing area for both professionals and amateurs. The loss of seagrasses has resulted in marked changes in the fish communities.



Biologists replanting seagrasses. These experiments were unsuccessful due to poor water quality.

Role of the Kwinana Pollution Control Unit

The Kwinana Pollution Control Unit (KPCU) is a branch of the Environmental Protection Authority. Its major objective is to ensure that the environmental quality of the Kwinana industrial area and its surrounding waters is maintained and enhanced where possible. The roles of the KPCU are:

- to respond promptly, on a 24 hour basis, to complaints of pollution incidents.
- to monitor physical, chemical and biological trends in the environment. This includes short and long term trends in air, noise and water quality (eg. nutrient and heavy metal levels in Cockburn Sound).
- to manage industrial discharges. This includes inspecting, regulating and issuing licences for sources of pollution, and investigating environmental pollution incidents.

- to maintain close liaison with industry, local authorities and the public and to promote awareness of environmental issues.

The Kwinana industrial area is located next to Cockburn Sound, and therefore the environment within the Sound requires close monitoring. Maintenance of high water quality in Cockburn Sound and the health of the biological communities, is a major goal of the KPCU. With sensible management strategies the environmental quality of the Kwinana area and waters of Cockburn Sound will be maintained and continue to be used for industry, recreation, fishing, aquaculture and as a port.

Industries, government agencies and the general public all have a role to play in maintaining Cockburn Sound and the Kwinana area in a healthy state.



Inspectors from KPCU respond promptly, on a 24 hour basis, to complaints of pollution incidents.



KPCU inspectors collecting waste water from an industrial outfall to be analysed for pollution levels.

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