



Crooked River Estuary Management Issues Focus Group Report

Prepared for
Kiama Municipal Council

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Contact: Dr Ros Muston
Email: ros@meyrick.com.au
Phone: +61 2 4227 1484

Meyrick and Associates Pty Ltd
Level 1, 63A Market Street, Wollongong NSW 2500 Australia
TEL +61 2 4227 1484 FAX +61 2 4227 1515 EMAIL wollongong@meyrick.com.au
ABN 85 061 120 652 WEB www.meyrick.com.au

NEW SOUTH WALES VICTORIA AUSTRALIAN CAPITAL TERRITORY NEW ZEALAND

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1. INTRODUCTION

This report contains a summary of issues raised and discussed by participants at a focus group meeting held in Kiama on 19th February 2003. The focus group was convened by Kiama Municipal Council as a part of the consultative process associated with preparation of the Crooked River Estuary Management Plan. The purpose of the focus session was to bring together representatives of State Government agencies and other organisations that have responsibilities or interests that could impinge upon the Crooked River Estuary or inform its future management. A summary of the Crooked River Estuary Management planning process that was given to participants is appended to this report.

2. PARTICIPANTS

The focus session was attended by representatives from NSW Fisheries, NSW Agriculture, Department of Land and Water Conservation, Sydney Water Corporation, Roads and Traffic Authority, Rural Lands Protection Board, Vivendi Water, University of Wollongong and Kiama Municipal Council. The focus session was supported by an independent facilitator from Meyrick and Associates. A full participants list is appended to this report.

3. DISCUSSION SUMMARY

Participants recognised the small size of the Crooked River catchment and recurrent prolonged closures of the estuary. Related to this, they considered that the estuary has minimal ability to absorb change without experiencing irreversible degradation. They considered that there was a risk that ‘over use’ and unlimited access for recreational activities would degrade the natural assets of the estuary.

They recognised that the main potential pollution sources were the catchment’s nutrient rich soils, rural storm water runoff, any malfunction in the operation of the STP, major spills resulting from traffic accidents and urban storm water runoff. They noted that there is a need to differentiate between these sources and the different types of risks that they pose to the estuary.

Two main themes emerged from discussion as an overarching approach to management of the estuary:

- § Maintenance of the natural cycle of opening and closing of the estuary.
- § Elevation of public awareness about the ‘sensitive’ environment of this estuary as a main strategy to encourage behaviours and land management practices that facilitate conservation of the estuary’s natural assets and values.

During discussions participants recognised specific inherent values of the estuary.

Participants raised issues related to human activities that they considered have a potential to impact negatively upon the estuary in the short and long term. Some suggested management objectives emerged during discussion of many of these issues. The suggested management objectives are indicated in boxes in the following sections and statements of the issues raised are listed below the boxes. The discussions also explored a number of strategies and actions. These are listed so that they may be considered for inclusion in the estuary management plan.

Discussion focused on the value of:

- § Archaeological sites and relics.
- § Wetlands.
- § Terrestrial threatened species and communities.
- § The estuary’s aquatic habitat.

Participants made particular mention of benefits that can be derived from maintaining the dynamic nature of the biophysical processes that operate within this estuary.

Human activities that were identified as having a potential to impact upon the estuary are summarised and discussed under the following categories:

- § Urban development.
- § Rural land use.
- § Transient population of visitors to the estuary.
- § Sand mining.
- § Public infrastructure.
- § Water extraction.
- § Fire management.
- § Management of the riparian zone.
- § Pest and weed management.

4. VALUES

4.1 Archaeological sites and relics

Objectives/issues

Conservation management for Aboriginal sites and relics located within the estuary and its riparian zone.

Strategies and actions

Increase knowledge about archaeological sites and relics within the estuary area through consultation and survey to identify, document and map archaeological values and assets.

4.2 Wetlands

Objectives/ Issues

Management of wetlands associated with the Crooked River estuary with the purpose of protecting the estuary and to reflect the degree to which estuary function and wetland function are interrelated.

Strategies and actions

Increased awareness of the local wetlands and the degree to which each influences estuary processes.

Incorporate 'buffer zone' strategies.

4.3 Terrestrial threatened species and communities

Objectives/ Issues

Conservation management of all natural assets that are listed on the schedules of the Threatened Species Conservation Act located in the estuary management area.

Strategies and actions

Increased awareness of these assets for all local land managers and visitors to the estuary.

Local public education to increase public awareness of the values of these assets and appropriate public behaviour.

Incorporate 'buffer zone' strategies.

4.4 The estuary’s aquatic and riparian habitat

Objectives/ Issues

Protection of the assets and ecological function of the estuary’s aquatic and riparian habitat.

Disparity between a high degree of public recognition and expectations about the values and management needs of the terrestrial habitat and the relatively low degree of public recognition of the values and needs of the aquatic habitat.

Participants have observed visitor activities that are causing excessive and inappropriate removal of biota from the estuary and riparian zone.

Degradation caused by unlimited public access to the riparian zone.

Damage and downstream impacts caused by unlimited livestock access to the tributary drainage lines and the riparian zone.

Strategies and actions

Increased public awareness about the values and function of the aquatic habitat and riparian zone for all local land managers and visitors to the estuary.

Deter people from excessive removal of biota that would cause irreversible decline in the biodiversity of the estuary environment.

Elevate the public awareness of appropriate behaviour by identifying the estuary as a ‘sensitive’ and ‘valuable’ environment.

Consider using signage as a deterrent to removal of biota and a support to local people who would monitor that visitor behaviour is consistent with protection of the natural assets of the estuary.

Management and restriction of public access to less sensitive parts of the riparian zone.

Fencing to restrict livestock access to tributary drainage lines and the riparian zone.

5. DYNAMIC NATURE OF ESTUARY PROCESSES

Objectives/ Issues

Management to facilitate the natural cycle of opening and closure of the estuary in order sustain the ecological processes that maintain the ecological functioning of the estuary.

Benefits are derived from maintaining the natural cycle of estuary closure and opening.

Periods of closure result in increases in productivity within the aquatic habitat within the estuary.

This approach will result in occasional inundation including flooding of properties and infrastructure in low lying areas during episodes of rainfall prior to natural opening of the estuary.

It will also result in episodes of accumulation of materials within the impounded water body during prolonged periods of closure, which in turn may present public health risks for primary contact usage of the estuary waters.

Heavy rainfall episodes will result in periodic opening of the estuary and flushing and redistribution of accumulated sediments and pollutants.

Strategies and actions

Increase local public awareness about values of the estuary and its sensitivity to change.

Associated with this there should be an increase in the level of public awareness about the benefits of adopting this management approach in order to reduce future pressure for artificial opening of the estuary and to manage public concern about future natural changes in the geomorphology of the estuary.

Adopt risk management strategies and contingencies to mitigate public health risks associated with prolonged periods of estuary closure or malfunction of the STP during these periods. This was suggested to include:

- § A contingency arrangement for artificial opening of the estuary related to risk management for the operation of the STP and pumping stations (see section)
- § Appropriate signage (or other forms of notification) to ensure adequate public awareness during periods of public health risk.

Ensure that any future Council development and building approvals recognise the constraints to floodplain development that are imposed by facilitating the natural processes of estuary closure and opening.

Provide support and encouragement for modification of any existing developments so that local needs and expectations can become more compatible with maintaining natural cycles of closure and opening of the estuary.

6. MANAGEMENT ISSUES RELATED TO HUMAN ACTIVITIES

6.1 Future urban development

Objectives/ Issues

Manage the catchment consistent with the highly sensitive nature of the estuary.

Manage the flow and quality of storm water run-off from urban areas so that it does not degrade the estuary ecosystem through introduction of pollutants.

Participants were made aware of current Council investigations and public consultation about future urban development in the Crooked River catchment.

Strategies and actions

Incorporate any new information from the current future urban development studies into the estuary plan of management, particularly information on community values.

Incorporate water sensitive urban design for new urban areas.

Retrofit infrastructure to mitigate problems arising from the existing urban areas.

6.2 Rural land use

Objectives/ Issues

Manage the catchment consistent with the highly sensitive nature of the estuary.

Gain rural land managers' participation in improvement of the water quality in the estuary.

There is a likelihood of changes in rural land use such as reduction in area being grazed and increase in area under horticulture.

Cumulative impacts need to be recognised as being likely to arise from expansion of horticulture as well as from the introduction of one property engaging in the new rural activity.

These changes will occur regardless of any future rural subdivision of rural lands.

Particular concern was expressed about the impacts on water quality within the estuary associated with changes in chemicals usage on individual rural properties. Examples given were fertilizer application to dairy pastures in the autumn and herbicide and pesticide used in viticulture.

Due to the basaltic soils in the catchment there is a high potential for nutrient input through erosion and sedimentation. Modeling of comparable environments in Ireland may offer a basis for understanding the Crooked River estuary.

There is a high potential for significant impact on the estuary associated with disturbance of acid sulphate soils in the catchment.

Strategies and actions

Need to seek opportunities to improve water quality in tributary streams. These opportunities may arise as a result of changing land uses and an increased capacity for appropriate control of chemical storage and usage practices in the catchment.

Consider ‘reward’ based incentives that promote appropriate chemical usage on rural properties.

Incorporate education to elevate public awareness about the sensitivity of the estuary and support land management practices into local ‘Landcare’ based programs and support strategies.

The estuary management plan should:

- § identify the capacity of the estuary to accommodate change in land use without experiencing degradation,
- § identify the boundaries within which land use change can occur, and
- § flag any problem impacts such as effluents or storm water runoff associated with each type of rural land use.

Local education programs aimed at increasing and maintaining a high level of awareness amongst rural land managers and support for appropriate practices was considered the optimum strategy to manage the potential for chemical runoff into the estuary. The benefit of the strategy is that it maintains flexibility of choice about rural land uses and land management practices which should facilitate economic development within the area.

6.3 Transient uses of the estuary

Objectives/ Issues

Manage impacts arising from the transient population within the estuary and its catchment.

This catchment has a large transient population which is likely to increase.

This has the potential to have a significant impact regardless of whether it leads to additional dwellings being constructed within the catchment. The impacts arise from visitors who are in the catchment for only a few hours.

These are issues that could limit use of the estuary, for example by restricting foreshore access.

Strategies and actions

Associated impacts need to be better understood and specifically managed.

6.4 Sand mining

Objectives/ Issues

There are existing sand mining activities in the catchment of the estuary. Participants were informed that the Land and Environment Court approval for the activities expired in December 2002. Expansion of these activities has a potential to impact upon the estuary through degradation of Blue Angle Creek.

Strategies and actions

Participants considered that the estuary management plan should include a management objective that protects the estuary from any negative impacts associated with existing or expanded sand mining activities in the catchment.

6.5 Public infrastructure

Objectives/ Issues

No degradation caused to the estuary derived from the operation, maintenance or upgrade of any public infrastructure within the catchment area.

Limit sediment and chemical pollutant in storm water runoff from roadways.

Participants discussed whether there was potential for operation of the Gerringong Gerroa STP and maintenance and upgrade of roads in the catchment area to impact on the estuary.

Gerringong Gerroa STP

Sydney Water operates to a requirement for no dry weather overflow from the STP meaning that the existing contingency arrangements already place severe limitations on operation of the STP.

Planning for the STP relied on modeling. The estuary management plan needs to focus on event related water quality issues as they relate to recreational use of the estuary waterway.

Reclaimed water from the STP goes to farm irrigation. The performance of the irrigation scheme is monitored independently by Shoalhaven City Council using data from bore hole and river water samples. These data are passed to Sydney Water Corporation and issued to Planning NSW as part of Sydney Water Corporation's regular performance reporting processes.

The location of a pumping station associated with Gerroa Shores Caravan Park was discussed in relation to a potential for water quality problems associated with flooding of the caravan park.

Roads

The greatest impact associated with roads is associated with major accident incidents such as a chemical spill from a tanker accident. The RTA is developing an incident manual.

There is the possibility that climbing lanes could be added to the Princes Highway in locations within the Crooked River catchment.

Heavy metals and oils pollutants are transported in highway runoff. Current highway traffic levels do not indicate a problem but contingencies need to be considered to mitigate risks associated with future increase in vehicle usage.

Strategies and actions

Gerringong Gerroa STP

The estuary management plan should refer to any potential impacts that have been identified in relation to operation of the STP and recognise any relevant conditions of approval that have been established to protect the estuary.

Increase public awareness about the benefits of the current operation of the STP as well as environmental safeguards and monitoring associated with the STP.

Incorporate a contingency plan and triggers related to procedures for artificial opening of the estuary in the event of events posed by flooding and a decline in water quality.

Roads

Consider whether there is a need for inclusion of spill containment basin(s) associated with the Princes Highway.

Include documentation of appropriate procedures for roadside chemical spaying within the catchment area.

Road maintenance procedures within the catchment should include measures to safeguard the estuary.

Future upgrade or relocation of roads in the catchment need to accommodate measures that safeguards the estuary.

Railways

Similar considerations needed related to potential for impacts derived from maintenance and upgrade of the railway.

6.6 Water extraction

Objectives/ Issues

Adequate flows to protect the estuary.

Water extraction within the catchment could place pressure on the estuary.

Strategies and actions

Address this is water sharing plan.

6.7 Fire management

Objectives/ Issues

Fire management was raised as a potential issue.

Strategies and actions

Examine local fire management plans to determine potential impacts and the adequacy of safeguards for the estuary.

6.8 Management of access to the riparian zone

Objectives/ Issues

Unrestricted public access can damage the riparian zone of the estuary.

Introduction of power boats, jet skis etc could damage the estuary.

Strategies and actions

Identify sensitive areas and adopt strategies that restrict access to these areas.

Consider involvement by Waterways to restrict use of the estuary in order to confine it to passive boating use.

6.9 Pest and weed management

Objectives/ Issues

Impacts from noxious and environmental weeds and vertebrate pests in the estuary.

Funding is available for management of noxious weeds but not for management of environmental weeds.

Strategies and actions

Identification of the estuary area as a 'sensitive area' would facilitate resource allocation to vertebrate pest and weed management.

ATTENDANCE LIST

| Participant's name | Organisation |
|---------------------------|---|
| Adrian Hemens | NSW Fisheries |
| John Morrison | University of Wollongong |
| Annette Williams | Sydney Water Corporation |
| Keith Ross | Vivendi Water (General Water Australia) |
| John O'Connor | NSW Agriculture |
| Errol McLean | Dept Land & Water Conservation |
| Terry McCoy | Roads & Traffic Authority |
| Melanie Hogan | Rural lands Protection Board |
| Peter Stuckey | Kiama Municipal Council |
| Amanda Schipp | Kiama Municipal Council |
| Emma Williams | Kiama Municipal Council |
| Ros Muston | Meyrick and Associates (Facilitator) |

UNABLE TO ATTEND

| | |
|------------------|-----------------------------------|
| Denis Pascall | Environment Protection Authority |
| Representative | National Parks & Wildlife Service |
| Martin Bergs | Shoalhaven City Council |
| Warwick Patworth | Shoalhaven City Council |
| Andrew Knowlson | Kiama Municipal Council |

(Handout provided to participants)

CROOKED RIVER ESTUARY MANAGEMENT PLAN

DISCUSSION WITH GOVERNMENT AGENCIES

Background

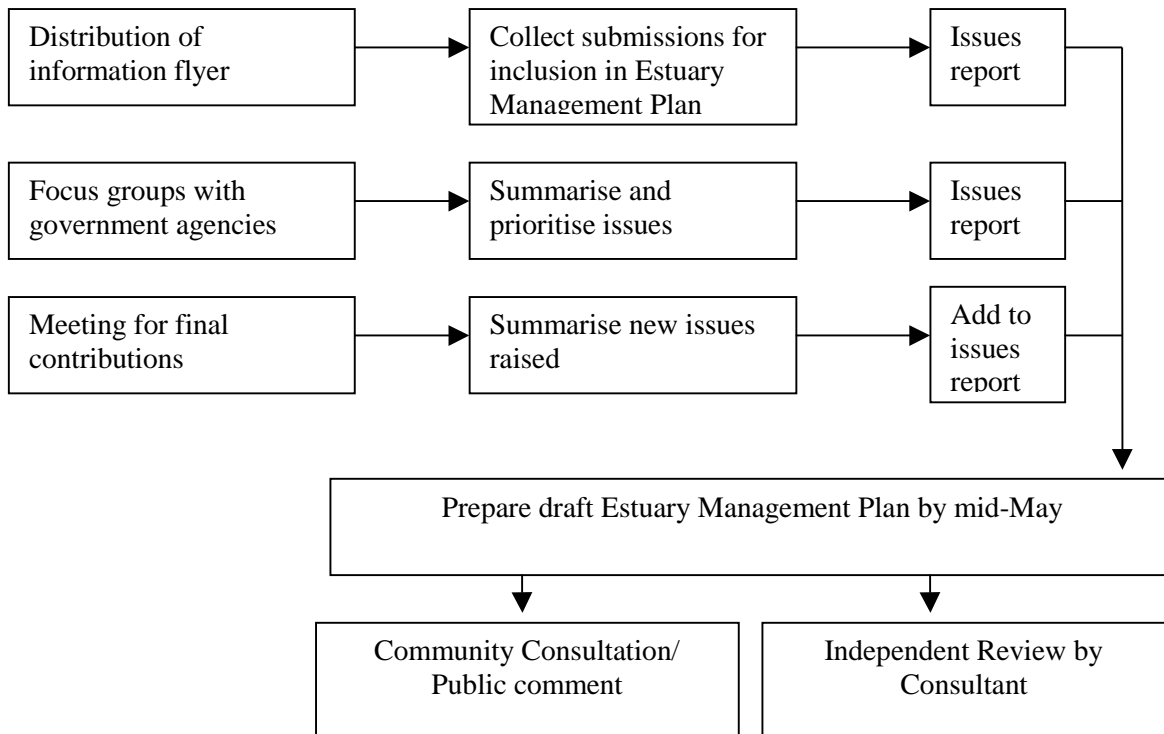
The Crooked River Estuary Management Committee was set up for the purpose of preparing a management plan for the estuary in response to the requirements of NSW Government policy.

Subsequently, an *Estuary and Catchment Data Compilation Study* was prepared in 1999, which provided a summary of available information and data on the Crooked River estuary and catchment, collated community values, investigated management issues facing the estuary and identified data gaps. However, there were only 10 responses to these invitations, which is a relatively poor response rate considering the number of residences surrounding the estuary (over 400).

In 2000, a *Gap Analysis Study* was compiled by the Committee, summarising in table format, the available data that was identified in the *Data Compilation Study* and any new data that has been made available since that 1999.

This next phase of the Estuary Management Planning process aims to collate all values and issues of all stakeholders in the catchment area with all existing information collected to date, and prepare the Estuary Management Plan by June 2003.

Project elements:





Prepare final Estuary Management Plan by end of June 2003