I am pleased to announce a major investigation into the health and condition of the marine waters and associated important ecosystems off Adelaide. This integrated ecological investigation, called the Adelaide Coastal Waters Study, will take three to four years to complete and is expected to cost $4 million.

The study will be conducted by the CSIRO. The aim of the study is to develop better management options for the Adelaide coastal waters area.

The investigation will assist with management of key ecosystems in the Adelaide coastal waters in an ecologically sustainable way.

I am confident this will deliver long-term benefits for all South Australians and better enable us to implement cooperative and coordinated approaches to management.

IAIN EVANS
Minister for Environment and Heritage
Minister for Recreation, Sport and Racing

Data supplied by Environmental and Geographic Information, Department for Environment and Heritage
Adelaide metropolitan coastline - Brighton. Along with approximately 4000 hectares of coastal seagrass, much of the nearshore seagrass seen in this photograph has since disappeared, thought to be as a result of discharges of stormwater, industrial and waste waters.

Through its Environmental Projects Office, CSIRO has been commissioned to coordinate Stage 1 of this study with a view to implementing the full scope of works for subsequent stages. The Environmental Projects Office has previously managed the similar and highly successful Port Phillip Bay Environmental Study for Melbourne Water and the Victorian EPA, between 1992 and 1996.

The study area extends from Port Gawler to Sellicks Beach in the eastern Gulf St Vincent. The study will consider the waters within 20 kilometres of the shoreline, including the Barker Inlet / Port River estuary.

The influences of catchments and the surrounding Gulf St Vincent waters on metropolitan water quality, physical, chemical and biological processes will also be considered.

Critical tasks to be undertaken early in Stage 1 include consultation with the key stakeholders to define the study objectives and a review of recent relevant information to update the ACWS Scoping Study (CSIRO Marine Research (1997)). Importantly, the Scoping Study recommendations will also be revisited to ensure that the integrated study proposal developed during Stage 1 is tailored to meet contemporary objectives and that it takes account of research and other activities conducted since 1997.

The scientific recommendations of the Scoping Study (1997) to be reviewed included the need for:

- Spatial surveys of water column, sediment nutrients; toxicant levels in sediments, biota and water column; beach volume estimates and seagrass distribution and abundance;
- Time series instrument deployments to collect physical datasets for physical model forcing, calibration and validation; for long term measurement of circulation, physical and biogeochemical properties; and to determine nutrient and toxicant inputs to coastal waters;
- Process studies to determine nutrient cycling through water column and sediment processes, through macrophytes and sediment transport / seagrass nutrient interactions;
- Models to be developed for particulate and dissolved constituent circulation and transport, sediment transport, re-suspension, stratigraphy and beach topography; integrated nutrient cycling to determine turbidity and nutrient cycling through water column, sediments and biota;
- An Adaptive Management Program to integrate research, experimentation, monitoring and management actions; and
- A decision support tool for managers to visualise and assess other model outputs during decision making and risk management.

Stage 1 will be completed by December 2001. During this time, key project outcomes will include the Stakeholder Requirements Report (April 2001), an Integrated Study Proposal report (September 2001), Detailed Task Specifications (October 2001) and a Final Options Report by November 2001.

Project funded by:
The Adelaide Coastal Waters Study has its origins in a Scoping Study which was formulated by a team drawn from CSIRO Marine Research, advised by other government agencies and tertiary institutions. The Scoping Study was completed by November 1997 and will be reviewed and updated as a priority task in the current project. Contract negotiations between the South Australian EPA and CSIRO were completed during February 2001 and the project was officially underway early in March 2001.

The study is planned to be conducted in three Stages over a four year period. Stage 1 has been approved with the latter Stages of research, analysis, synthesis and reporting dependent on the outcomes of Stage 1 and the availability of sufficient funding for the magnitude of work anticipated.

The study is to be undertaken on behalf of the South Australian EPA and directed by a Project Steering Committee chaired by the Executive Director of the EPA. Other organisations represented on the Project Steering Committee include SA Water, metropolitan Catchment Water Management Boards, Transport SA, TXU Torrens Island, Mobil Refining Australia Pty Ltd, Conservation Council, Local Government Association and the Coast Protection Board. The Project Steering Committee will establish a technical advisory committee to evaluate Stage 1 outcomes and recommendations.

The day to day running of the study is the responsibility of the CSIRO’s Environmental Projects Office (EPO). CSIRO will be advised and assisted by a Scientific Committee of mainly local experts during the analysis of stakeholder requirements and the development of detailed Stage 2 research task specifications. Nominations and registrations of interest from individuals / organisations wishing to be included on this scientific committee are currently being sought.

This newsletter has been prepared for the Study Steering Committee to describe the activities conducted by the study. Future issues (to be available from www.epa.sa.gov.au/acws.html) will describe in more detail the types of tasks undertaken by the study and provide results and conclusions as they become available. For further information about this study, additional copies of the newsletter, or the study mailing list, contact David Ellis, Project Coordinator on Tel (08) 8303 8420, Fax (08) 8303 8786, Mobile 0407 970 485, E-mail david.ellis@epo.csiro.au.
The audience of this newsletter include the various stakeholders along the coastline - environmental / residential interest groups, recreational organisations and clubs, commercial operators, industries (shipping, land based, marine construction) and relevant Local and State Government bodies.

The study design and tasks to be refined during Stage 1 will build upon previous research, and discover the essential ecological processes and mechanisms operating along and affecting the coastal waters. Critical disturbance thresholds will need to be identified, beyond which there is risk of serious and potentially irreversible ecological and physical damage. Unless the coastal and estuarine ecosystems are clearly understood, it will be difficult to effectively manage the total catchment environment and sustainable disposal of wastes.

The 1997 Scoping Study raised several questions to be answered by the research study program and tasks. While the relevance of these questions to contemporary managers will be determined early in Stage 1, the study may have to answer questions like:

- What will be the impacts on water and sediment quality (nutrients, chlorophyll, turbidity, toxicants) over the study region, of turning off specific discharges from WWTPs, or re-routing them, or of achieving a specified decrease (or increase) in catchment / stormwater loads?
- What are the effects of current beach replenishment and coastal protection programs, or possible future alternative programs, on sediment balance, sedimentation on reefs, water quality and coastal ecosystems?
- What is the current rate and nature of seagrass loss, what are the principal processes determining seagrass loss rates, and how will those rates respond to proposed changes in management?
- What are the processes associated with seagrass regeneration and the effects of management action on them; is it possible to reverse seagrass decline once the reasons for the loss are determined?

As study project manager, I will be reporting through this newsletter on the progress of Stage 1 tasks and on subsequent research tasks undertaken. I will report on the results of these research tasks and ultimately on the conclusions reached by the study.

The central purpose of this study is to provide properly researched information so that decisions can be made about the best ways to manage activities which affect the coastal waters and estuaries (such as the disposal of treated industrial and effluent wastewater) in future years.

The Adelaide Coastal Waters Study will deliver an assessment of the state of the system now, a set of tools to support management, and a continuing program of monitoring and adaptive management which will take account of, and continually reduce, uncertainty.

The exciting end result of the study will be a greater understanding of our metropolitan coastline, its biology, physical, chemical and ecological processes. This body of knowledge will be available for use throughout our community. The opportunity to gather the knowledge necessary to protect, enjoy and make use of Adelaide’s coastal and estuarine waters for years to come is something to be celebrated by all South Australians.

I would like to take this opportunity to invite interested individuals, businesses and research organisations to become involved with this study. Involvement may be as simple as registering on the project mailing list or regularly visiting the project web site. Or, it may involve nominating for inclusion on the CSIRO’s scientific committee. This committee will play a major role in shaping the Stage 2 research tasks and ultimately, the outcomes of the study.

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