

1 Introduction

The Tamar Estuary, situated along Tasmania's northern coastline, is one of the State's larger estuaries (100 km²), extending approximately 70 km from the City of Launceston, at its head, to Bass Strait. The Tamar is a narrow estuary with a deep, well-defined channel, bordered by shallow tidal flats and wetlands. This diverse and productive ecosystem is characterised by a 3 metre tidal range and large freshwater inputs from the North and South Esk Rivers. The combination of a large sediment load from the catchment and strong tidal currents has resulted in rapid sedimentation in the upper reaches of the estuary - and a long history of dredging.

The estuary is an important recreational and scenic resource, particularly for the City of Launceston (pop. 66,000), as well as for numerous smaller communities along the eastern and western shores. The Tamar is Tasmania's second largest port and supports a large industrial area at Bell Bay and Long Reach (metal- and wood-processing industries). Contaminants enter the estuary from a variety of point and non-point sources: these include treated sewage and industrial effluent, urban run-off (sometimes combined with sewer overflows in Launceston), atmospheric and ground-water pollution, as well as agricultural and mining run-off from the catchment. In July 1995, the grounding of the *Iron Baron* off the mouth of the Tamar resulted in a 300 tonne oil spill, affecting the estuary's lower reaches for a limited time.

Environmental concerns in the Tamar have broadly focused on:

- sedimentation/dredging issues;
- contamination of water, sediments and biota with pathogens, hydrocarbons, metals, and other contaminants (e.g. fluoride, cyanide, phenols);
- effects of introduced species, particularly rice grass and Pacific oyster.

To assist in meeting the objectives of RiverWorks Tasmania, a document which summarises the present environmental status of the Tamar Estuary was required. The following 'State of the Tamar Estuary' report was prepared to fill this need and is intended to:

- provide an overview of the Tamar's physical setting and uses;
- identify and quantify (where possible) major inputs, providing a 1996 'snapshot';
- identify, compile and review existing environmental quality data on water, sediments and biota.

This report is not based on new information or studies, but is a compilation and assessment of existing data on the Tamar Estuary. A review of the available information indicates that there have been few extensive monitoring programs/environmental quality investigations of the Tamar Estuary - far fewer than, for example, the Derwent, Macquarie Harbour or Huon estuaries. The limited information which has been collected is largely unpublished, and has never been fully compiled, reviewed or presented. Furthermore, the majority of reports and data are over 10 years old. Given the significant gaps in our knowledge about present environmental conditions in the Tamar, the findings presented in this report should be used and interpreted with care.

Although this report was specifically commissioned to assist the RiverWorks Tasmania Steering Committee in evaluating and prioritising proposed projects, particularly through the identification of 'hot spots' and significant historical sources of pollution, it is anticipated that this report will serve a number of broader purposes as well. These include:

- to inform and educate resource managers and the public;
- to identify gaps in the existing information base;
- to establish benchmarks for determining trends and improvements in the environmental quality of the estuary.