

Nambucca Climate Change Model

Nambucca River, NSW

Background

The issue of climate change and sea level rise is an important strategic concern for a large number of communities along the NSW coast. Not only does climate change have the potential to impact the coast directly, but there are large areas connected to estuaries also vulnerable to changes.

Project Scope

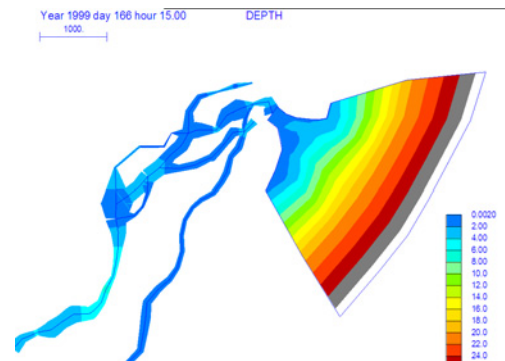
This project was to construct a numerical model of the Nambucca River to examine the effects of increasing the offshore sea level on the hydrodynamics and the dispersion of salinity in the estuary. The study was commissioned by the Department of Environment, Climate Change and Water NSW, and built off previous experience MHL has on the Nambucca River.

Our Role

MHL used specialist knowledge and practical experience to develop a numerical model of the estuary. Then, using the data returned from the model, conclusions could be drawn about likely changes in hydrodynamics and salinity that could be expected. Changes in the bathymetry due to climate change were also included in the model on the basis of advice from DECCW.

Outcomes

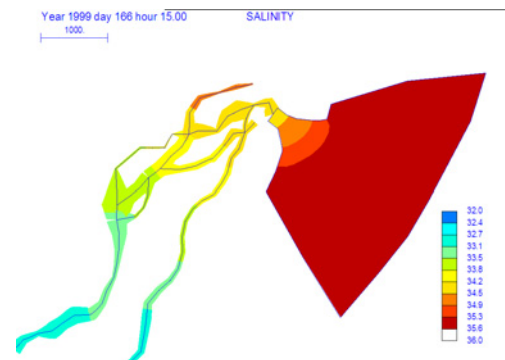
MHL's experience with the complexities of estuarine mixing processes allowed us to advise on the possible changes in hydrodynamics and salinity transport through the estuary. From this study we were also able to better illustrate the requirements for modelling climate change and sea level rise.



Water depth in the entrance to the Nambucca River



Overview of the Nambucca River estuary network coloured by salinity



Salinity changes through the entrance to the Nambucca River