

Research Shows Speed Damages Shorelines

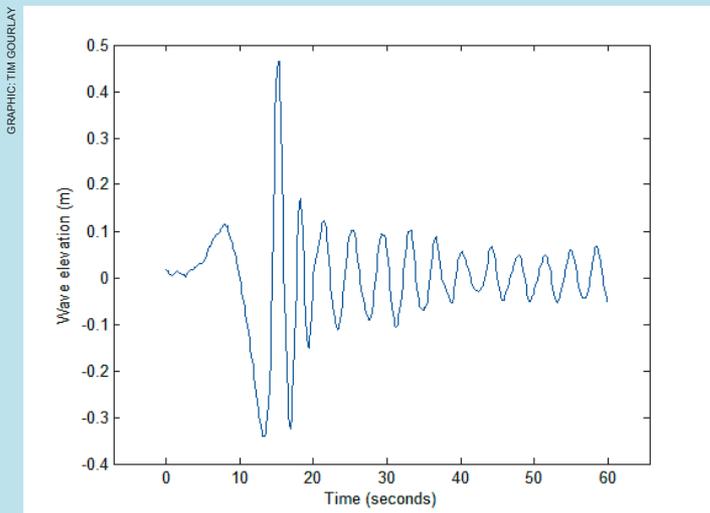
Recent research by CMST and the Australian Maritime College has confirmed that reducing boat speed limits in sections of the Swan River would dramatically reduce shoreline erosion and damage to wildlife habitats. The research was commissioned by the Swan River Trust in collaboration with the WA Department of Transport. The first stage of the investigation was a desktop study into boat wakes and wind waves on the Swan River. Boat wakes were predicted using a database of deep-water model test results; wind waves were predicted with empirical formulae, using seven years of measured wind data. The second stage of the investigation involved full scale experiments measuring boat wakes and wind waves at locations of interest along the Swan River. Nine

different hull forms were tested in dedicated trials, their wake being measured by a subsurface pressure sensor. Wind wave measurements were also taken. As well as the dedicated trials, cumulative boat wake trials were conducted to measure the total wave energy produced at each location during a normal busy period. The study is part of a larger strategy to understand the effects of boating on the Swan and Canning Rivers, and involves ongoing collaboration with the boating community. Further measures such as physical structures are being considered to reduce the effect of boat wash in areas of concern. The research also highlighted the ongoing issue of vessels exceeding speed limits and causing excessive wash.

PHOTO: TIM GOURLAY



Boat wake produced by a 15m power boat travelling at 9.8 knots. Waves measured by a submerged wave recorder attached to pylon.



Wave elevation for a 15m power boat travelling at 9.8 knots

CMST Celebrates 25 Years

CMST celebrated 25 years of operation on 17 March 2010. This achievement was commemorated with a sundowner and display at the Waterfront Research Facility at Fremantle Sailing Club. The event was attended by industry personnel and members of staff both past and present.

The event also coincided with the third anniversary of the opening of the John Penrose building at the Facility, and Emeritus Professor John Penrose and his wife Sandra were present for the celebrations. We look forward to the next 25 years!

IMOS Funding Extended

The Department of Innovation Industry Science and Research announced on 16 April 2010 the extension of funding for the Integrated Marine Observing System. Under this scheme CMST has designed, built and installed three underwater listening stations in NSW, SA and WA. The funding extension will enable the stations to

continue operating until at least 2013, providing a continuous data stream of underwater noise measurements that will prove invaluable to Australian research scientists. The data will be accessible through the IMOS Ocean Portal at the following web address: <http://imos.aodn.org.au/webportal/>

PHOTO: ANON



Deployment of IMOS acoustic listening station in the Perth Canyon by CMST staff

International Activities

PHOTO: ANDREW WOODS



Mariam Medina (front right) with CMST staff and a birthday cake

Underwater acoustics researcher Mariam Medina, from the University of Valencia in Spain, has recently completed her five month visit to CMST. During her time at CMST, Mariam analysed seafloor backscatter collected from single-beam echo sounders using a theoretical model and experimental data. The aim of this work was to evaluate backscatter parameters for the purposes of seafloor habitat classification. A Simrad EQ60 single-beam echo

sounder was used to measure the temporal variation of backscatter from seagrass. The results from this experiment showed unexpectedly small temporal variations in the mean backscatter characteristics of intensity and energy at 200 kHz. However, subtle diurnal variations were observed in the mean backscatter intensity at 38 kHz. The experimental component of the project was conducted with logistical support from DSTO and Fremantle Sailing Club.

PHOTO: MILES PARSONS



Simrad single-beam echo sounder deployed to measure backscatter

The Centre for Marine Science & Technology (CMST) conducts world-class consulting, research, development and education for the marine industry and for government agencies.

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Seakeeping Short Course

CMST recently conducted an in-house short course on advanced seakeeping measurement and prediction techniques for BMT Defence Services in Melbourne. The five-day course was taught by CMST staff Kim Klaka and Tim

Gourlay with additional support from Alan Haywood (SSAC Consulting, Melbourne) and Martin Renilson (Renilson Marine Consulting, Launceston). Similar courses are available for running in-house at other venues.

New-look CMST Website

Last month saw the exciting launch of a completely revised and updated website for the Centre. The web address remains the

same and the new-look website can be viewed at the following web address: www.cmst.curtin.edu.au All feedback is welcome.

CMST Lunchbox Seminars

CMST holds weekly seminars, with speakers from interstate and overseas, as well as CMST staff.

The schedule of seminars is listed on our website: www.cmst.curtin.edu.au/seminars

If you would like to receive email updates regarding CMST seminars, simply send an email to the following address: seminars@cmst.curtin.edu.au