

**Tsunami Modelling in Drowned River Valleys**

Examining the effects of morphological features

Kaya Wilson  
Dr. Hannah Power

THE UNIVERSITY OF NEWCASTLE AUSTRALIA

The University of Newcastle www.newcastle.edu.au

**Tsunamis**

Global Hazard

Have affected NSW in the past

Geological and historical records of tsunami in Australia  
Dale Domingo-Hewson

Low-lying development in estuaries

SCIENTIFIC REPORTS

OPEN A Regional Scale Approach to Assessing Current and Potential Future Exposure to Tidal Inundation in Different Types of Estuaries

**1960 Chile tsunami destruction**

SYDNEY HARBOUR IN CHAOS FROM QUAKE WAVE AIR PILOT SEES BEACH DISAPPEAR

SYDNEY — Total waves generated by the earthquake in Chile reached only the New South Wales coastline yesterday.

PHOTOGRAPH BY JOHN HARRIS FOR THE AUSTRALIAN NEWSPAPER "NEWS" (1960)

THE UNIVERSITY OF NEWCASTLE www.newcastle.edu.au

**Drowned River Valleys**

Focus

THE UNIVERSITY OF NEWCASTLE www.newcastle.edu.au

**Model Basics**

Tsunami

8.5M<sub>w</sub>

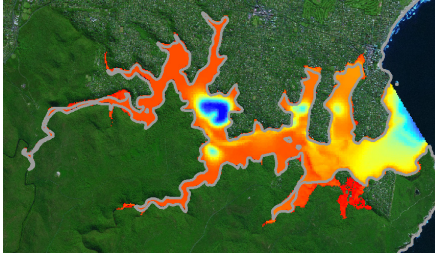
Wave period = 26 min

Elevation

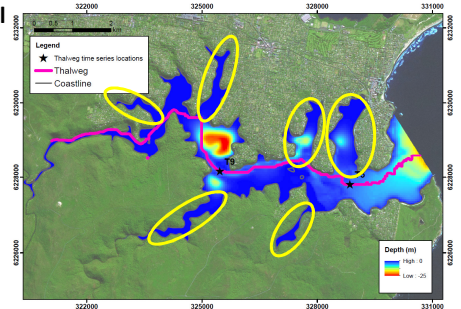
Outputs

THE UNIVERSITY OF NEWCASTLE www.newcastle.edu.au

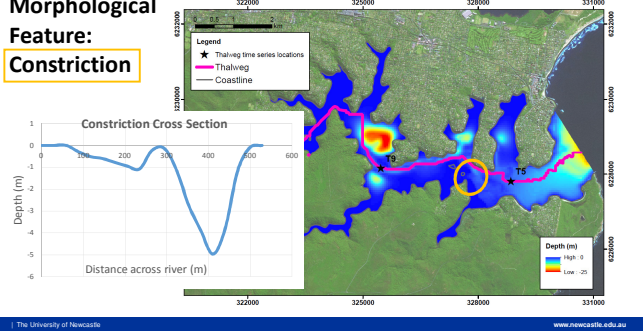
**Example output:**  
**Maximum Depth with inundation: Port Hacking**



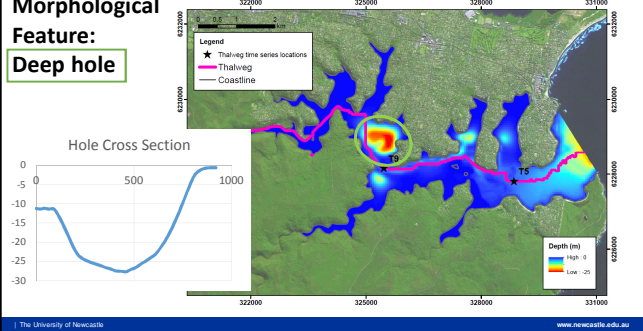
**Morphological Feature:**  
**Bays**

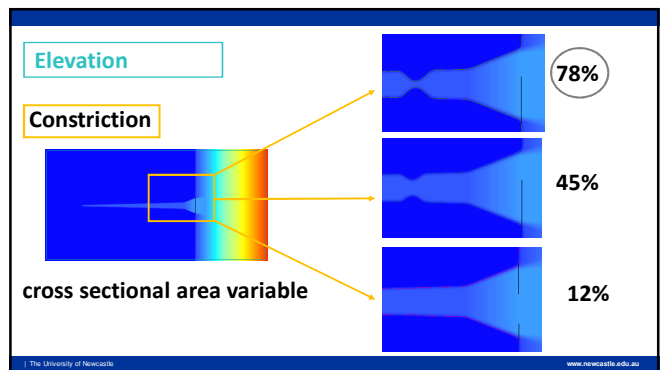
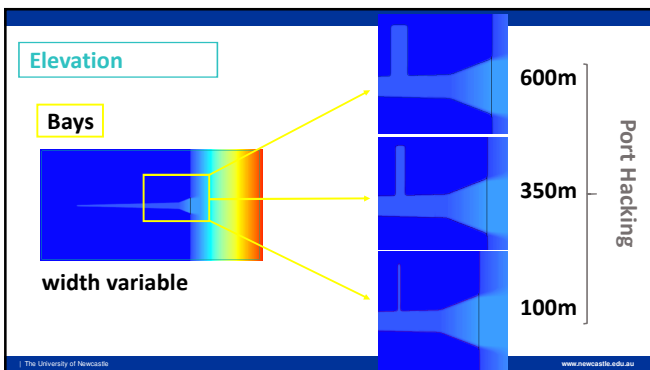
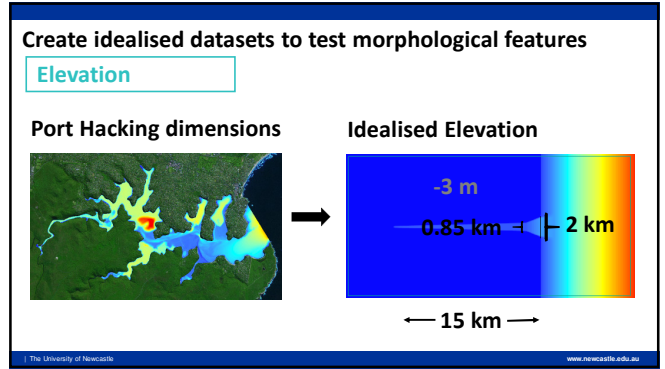
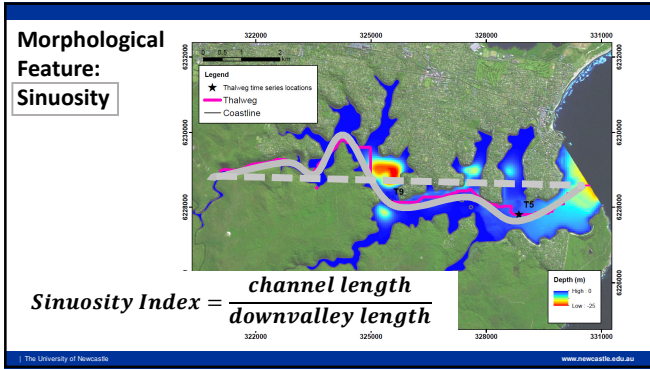


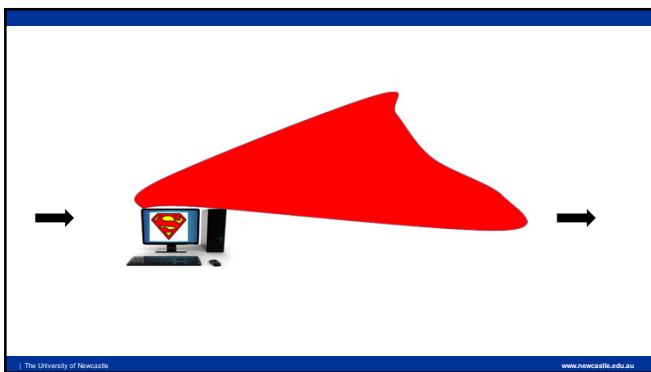
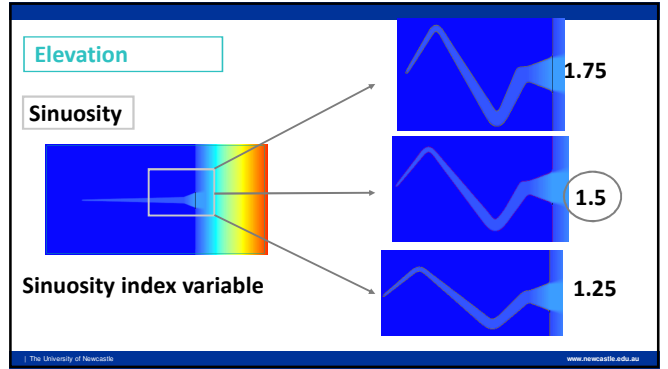
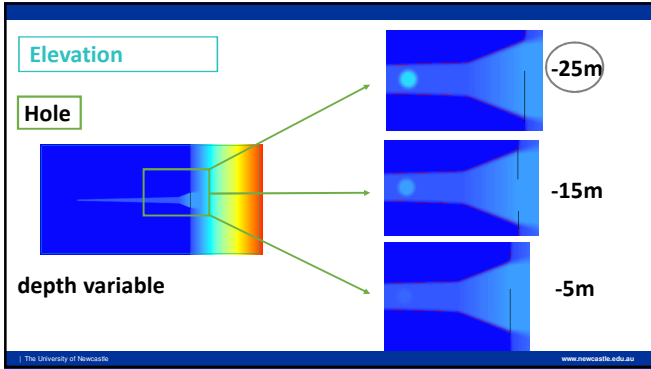
**Morphological Feature:**  
**Constriction**

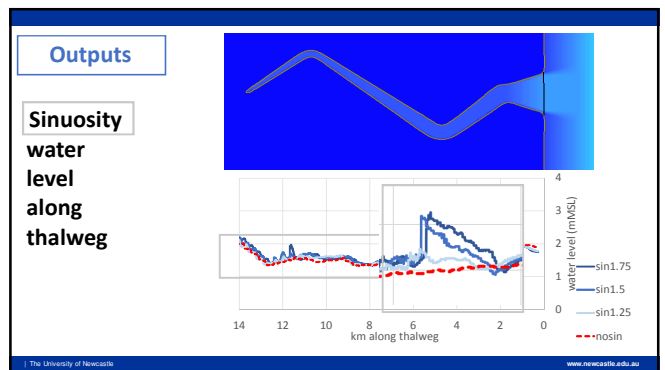
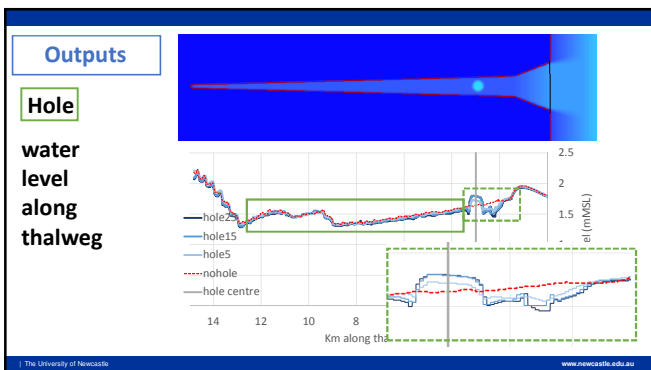
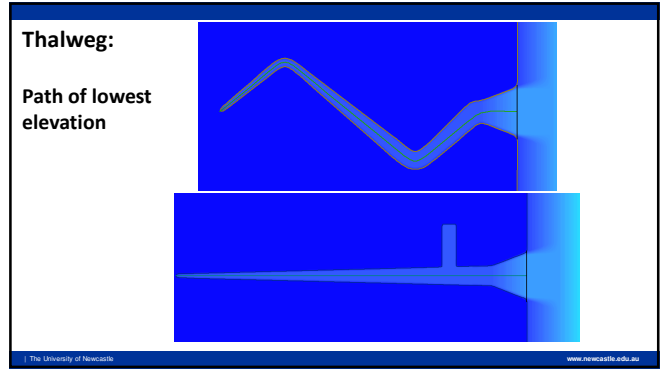
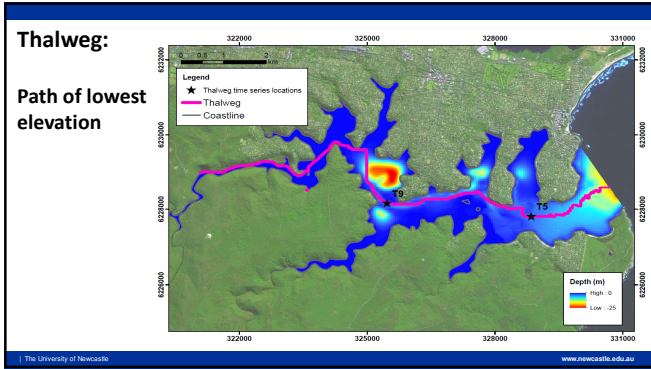


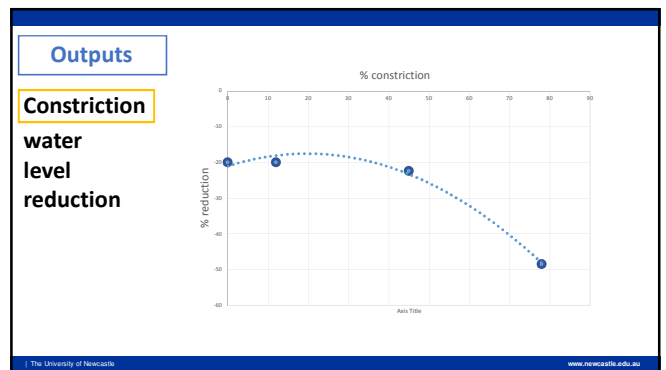
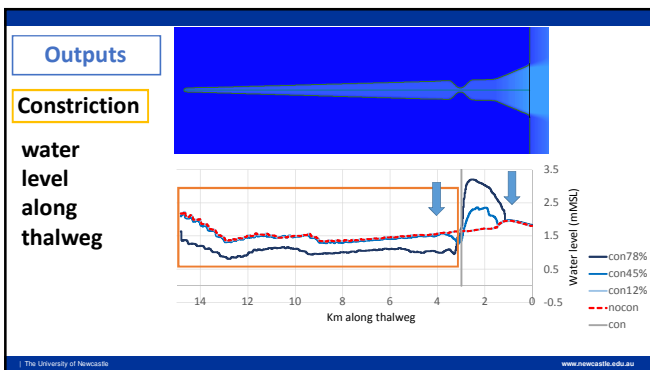
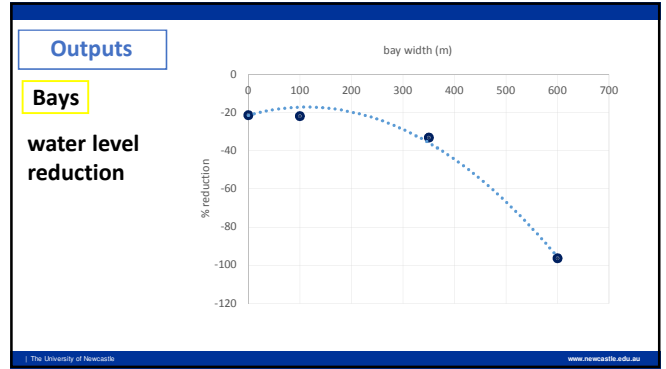
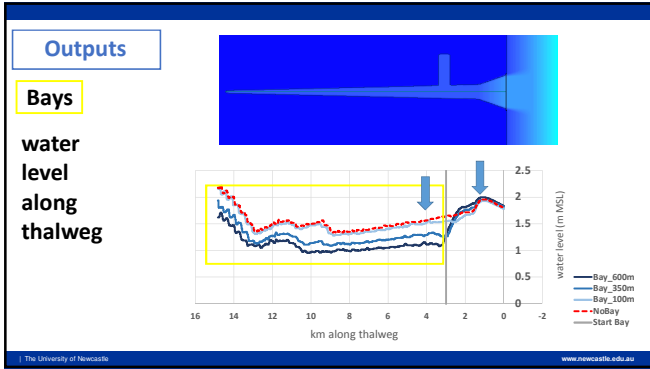
**Morphological Feature:**  
**Deep hole**

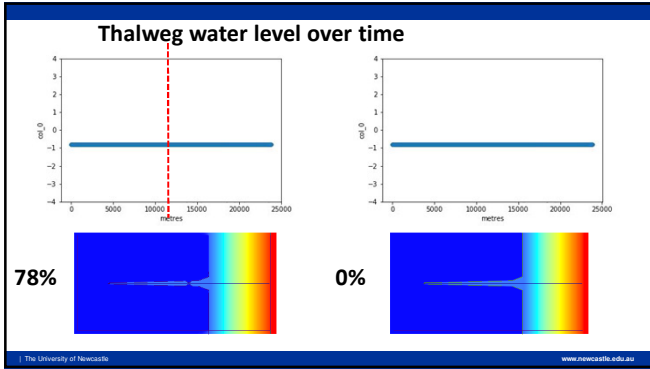












Of these features the effects on water level are:

localised		continuing
Holes		Bays
Sinuosity		Constrictions

Ongoing work...

The University of Newcastle | www.newcastle.edu.au

