

IMPROVING PREDICTIONS OF DESTRUCTIVE WAVES AND STORM SURGES AROUND AUSTRALIA

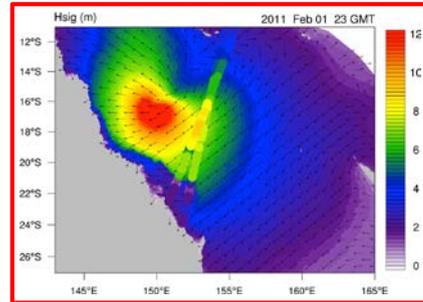
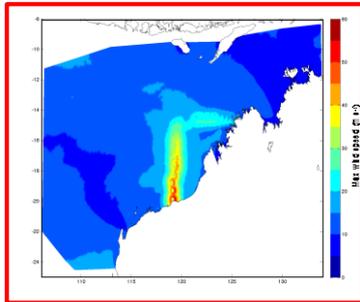


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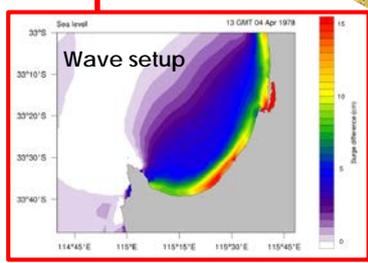
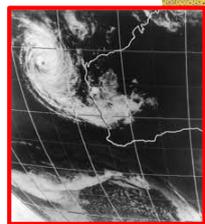
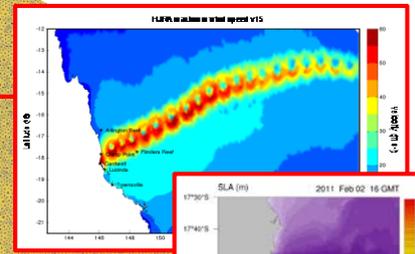
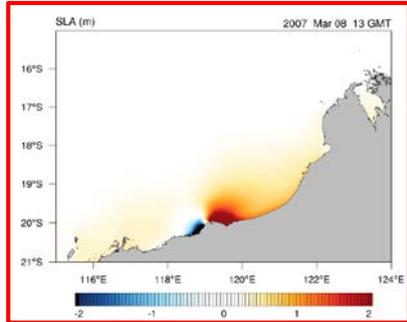
CYCLONE GEORGE - APRIL 2007

- ▶ Port Hedland sustained wind damage but avoided worse when the storm made landfall to the east
- ▶ If George had tracked west the important port city would have been hit by a 4 m storm surge with waves > 6 m



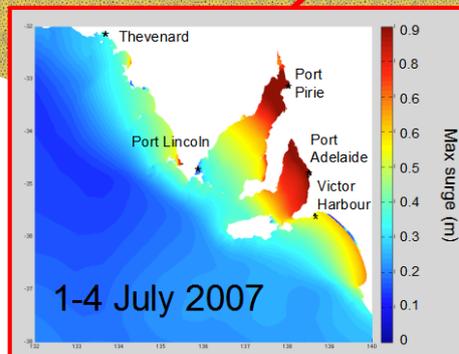
CYCLONE YASI - FEBRUARY 2011

- ▶ One of the most intense and largest tropical cyclones to make landfall in Australia
- ▶ Major damage caused by inundation and erosion from extreme waves (>5m) and storm surge (up to 5.3 m!)



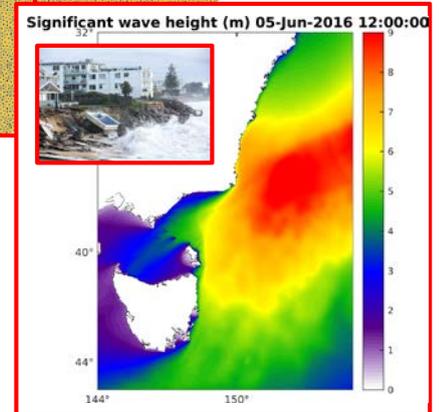
CYCLONE ALBY - APRIL 1978

- ▶ TC Alby violently interacted with a winter cold front and underwent extratropical transition, causing widespread damage in the SW
- ▶ Simulations indicated that 10-40% of storm surge height was due to wave setup effects



SOUTHERN OCEAN EXTRATROPICAL STORMS

- ▶ A series of cold fronts impacted South Australia causing some of the highest storm surges on record, flooding and coastal erosion



EAST COAST LOW - JUNE 2016

- ▶ Record waves + storm surge + spring tides = Major coastal erosion, flooding & damage from NSW to TAS

'This project provides a comprehensive benchmark that will underpin the ability to manage the impacts of extreme water levels on coastal regions at local, regional and national scales.' Martine Woolf, lead end-user from Geoscience Australia

