IMPROVING PREDICTIONS OF EXTREME SEA LEVELS AROUND AUSTRALIA

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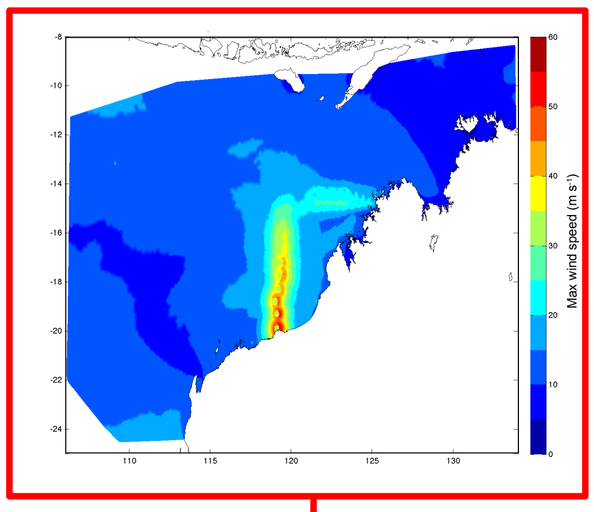
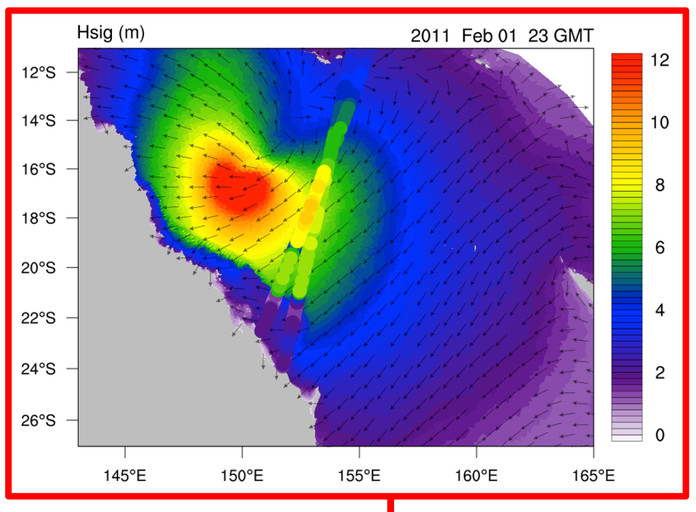
CYCLONE GEORGE - APRIL 2007

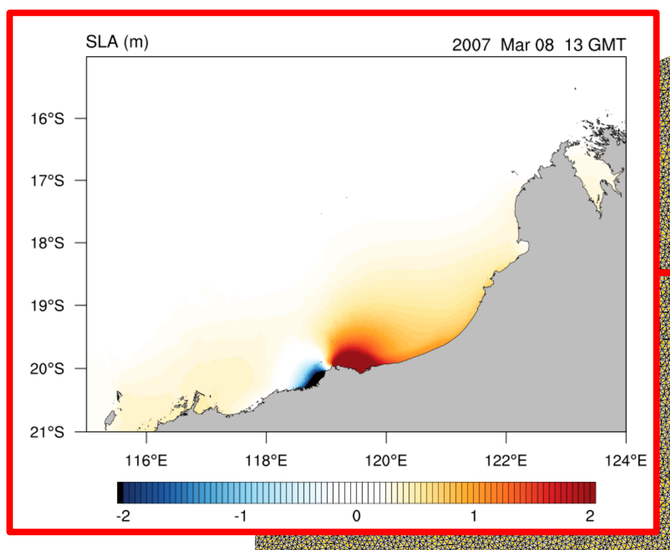
- Port Hedland sustained wind damage but avoided worse when the storm made landfall to the east
- If George had tracked west the important port city would have been hit by a 4 m storm surge with waves > 6 m

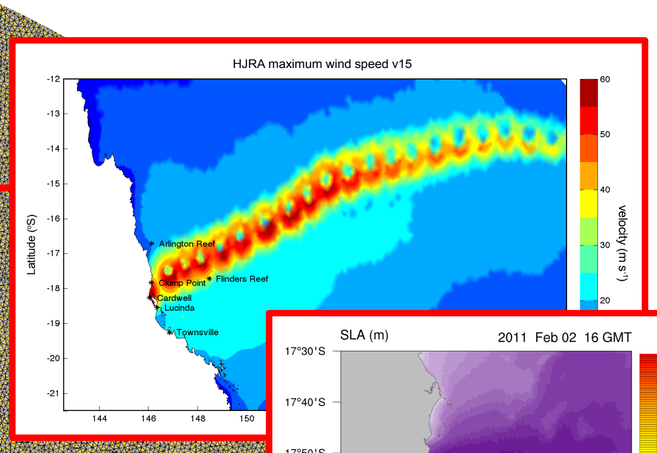


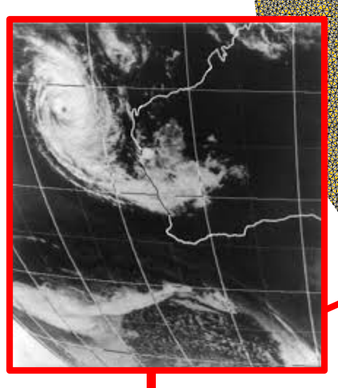


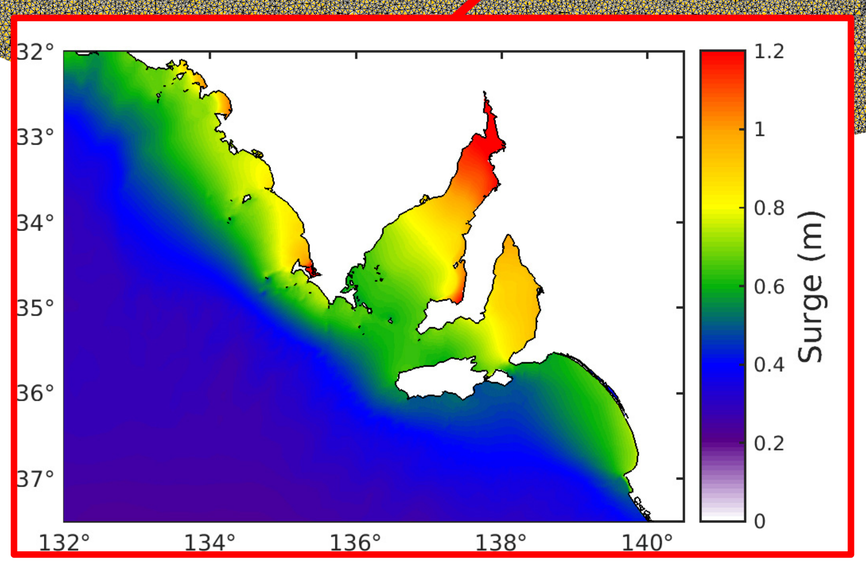
CYCLONE YASI - FEBRUARY 2011

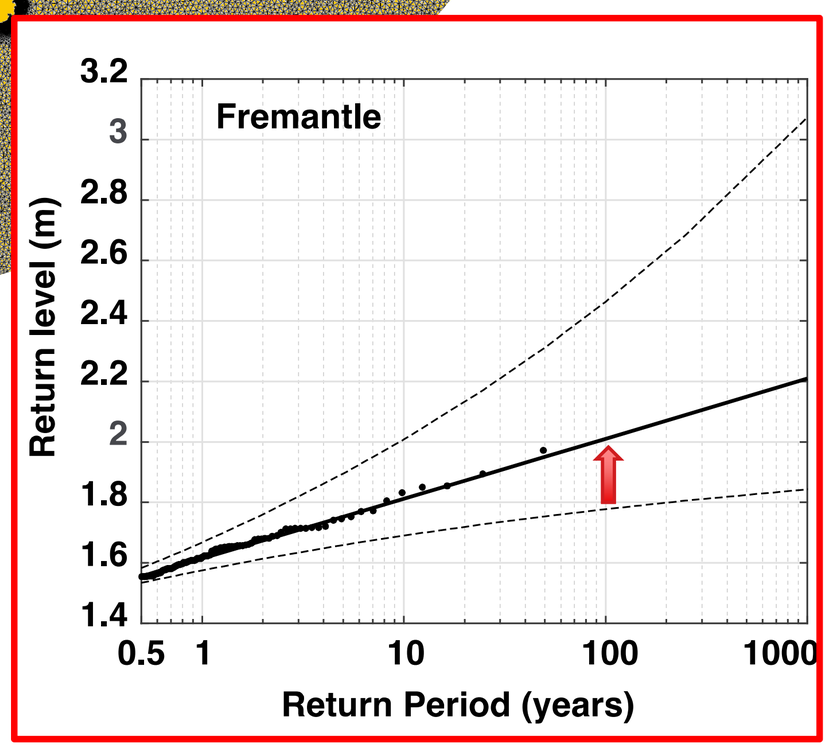
- One of the most intense and largest tropical cyclones to make landfall in Australia
- Major damage caused by inundation and erosion from extreme waves (>5m) and storm surge (up to 5.3 m!)

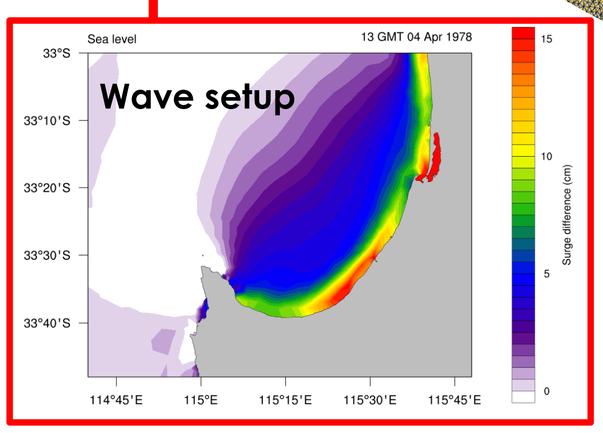












CYCLONE ALBY – APRIL 1978

- 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

EXTREME SEA LEVEL RETURN PERIODS

- Model runs are underway for 1959-2016 which will result a continuous time series around the entire Australian coast
- Return period curves will provide estimates of 1:100 ARI events around Australia

'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

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