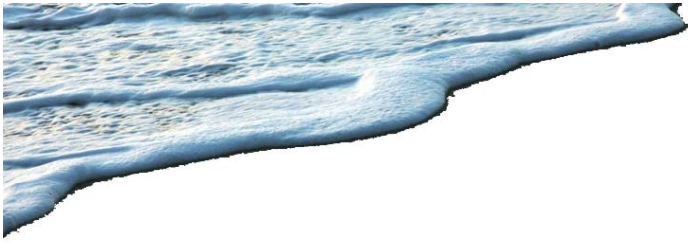


Delineating the Littoral Zone Using Topographic and Bathymetric LIDAR



Nathan Quadros, PhD Candidate
The University of Melbourne



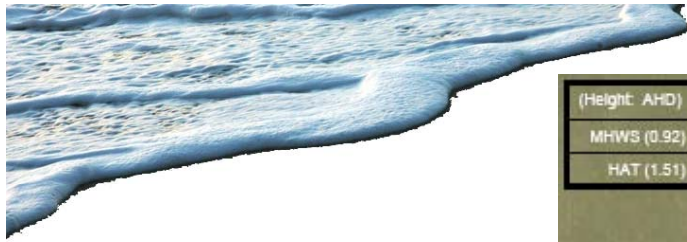
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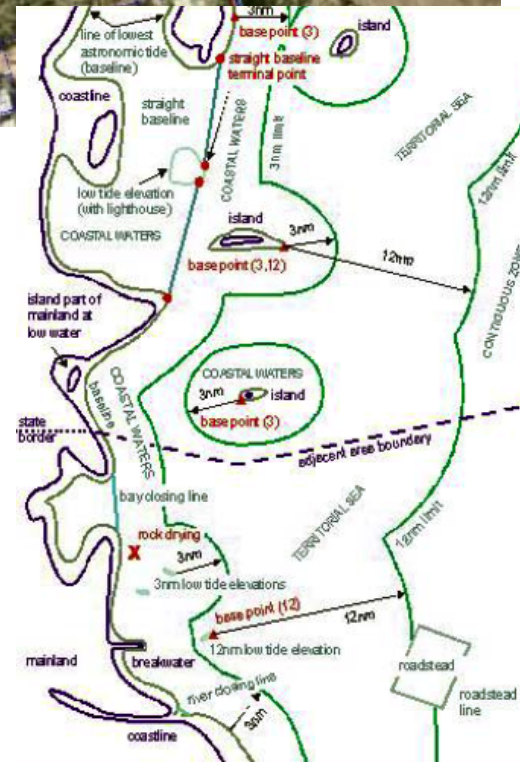
Nathan Quadros, The University of Melbourne



PURPOSE



(Height AHD)	100yr	500yr	1000yr
MHWS (0.92)	1.37	1.57	1.65
HAT (1.51)	1.95	2.46	2.23



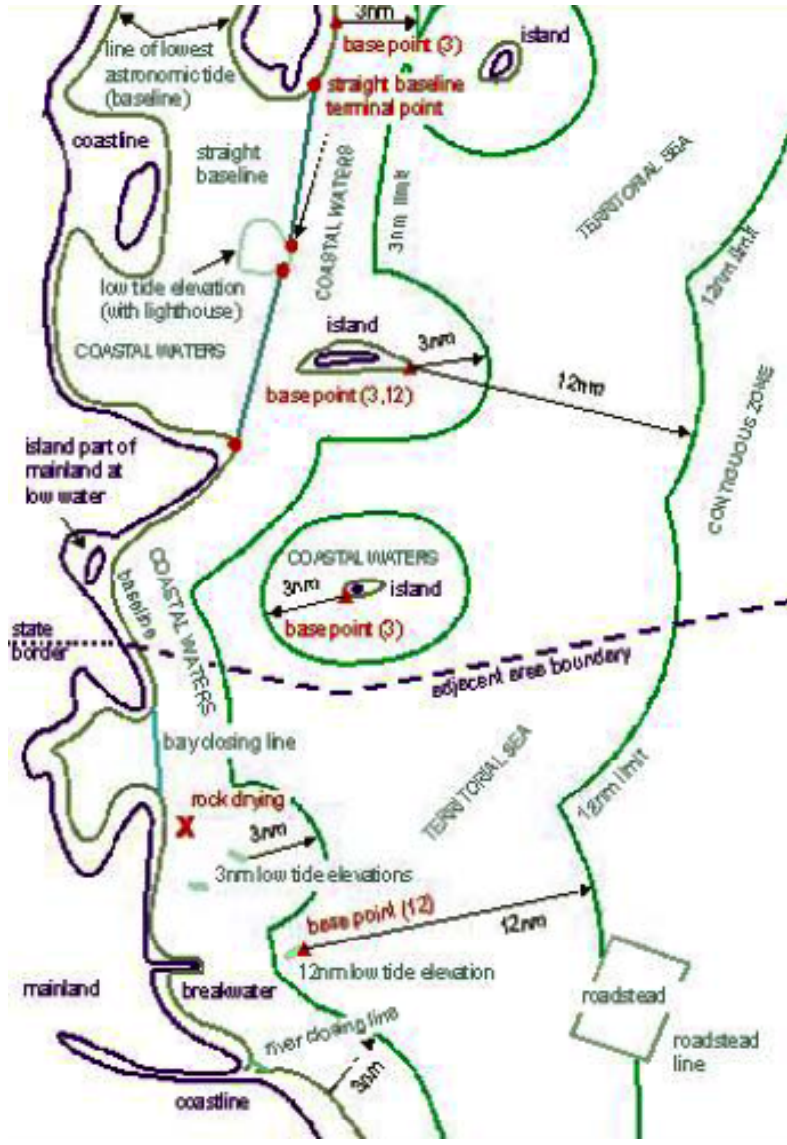
Friday 17th October 2008

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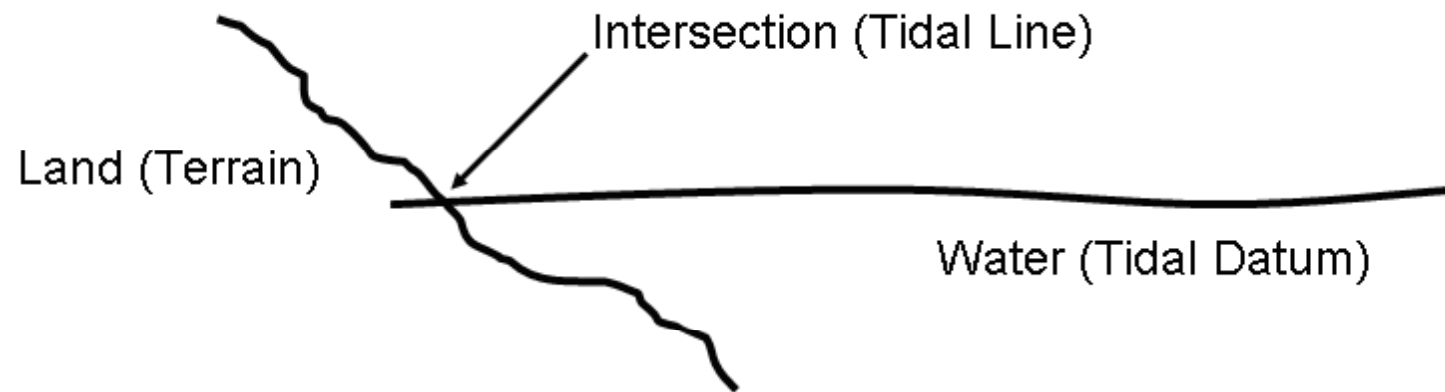
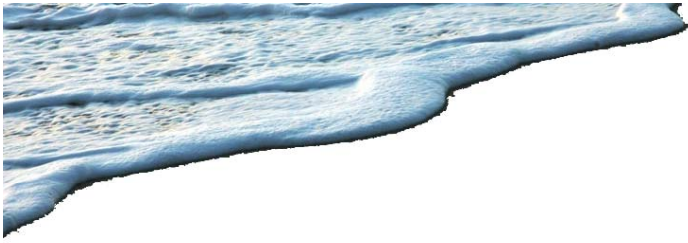


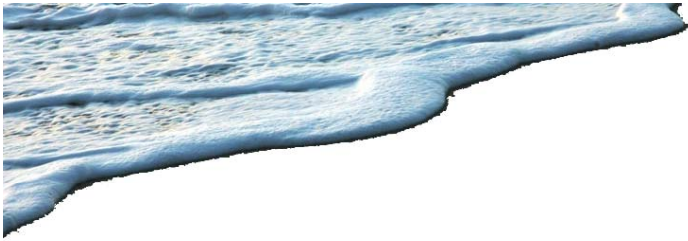


MARITIME IMPLICATIONS



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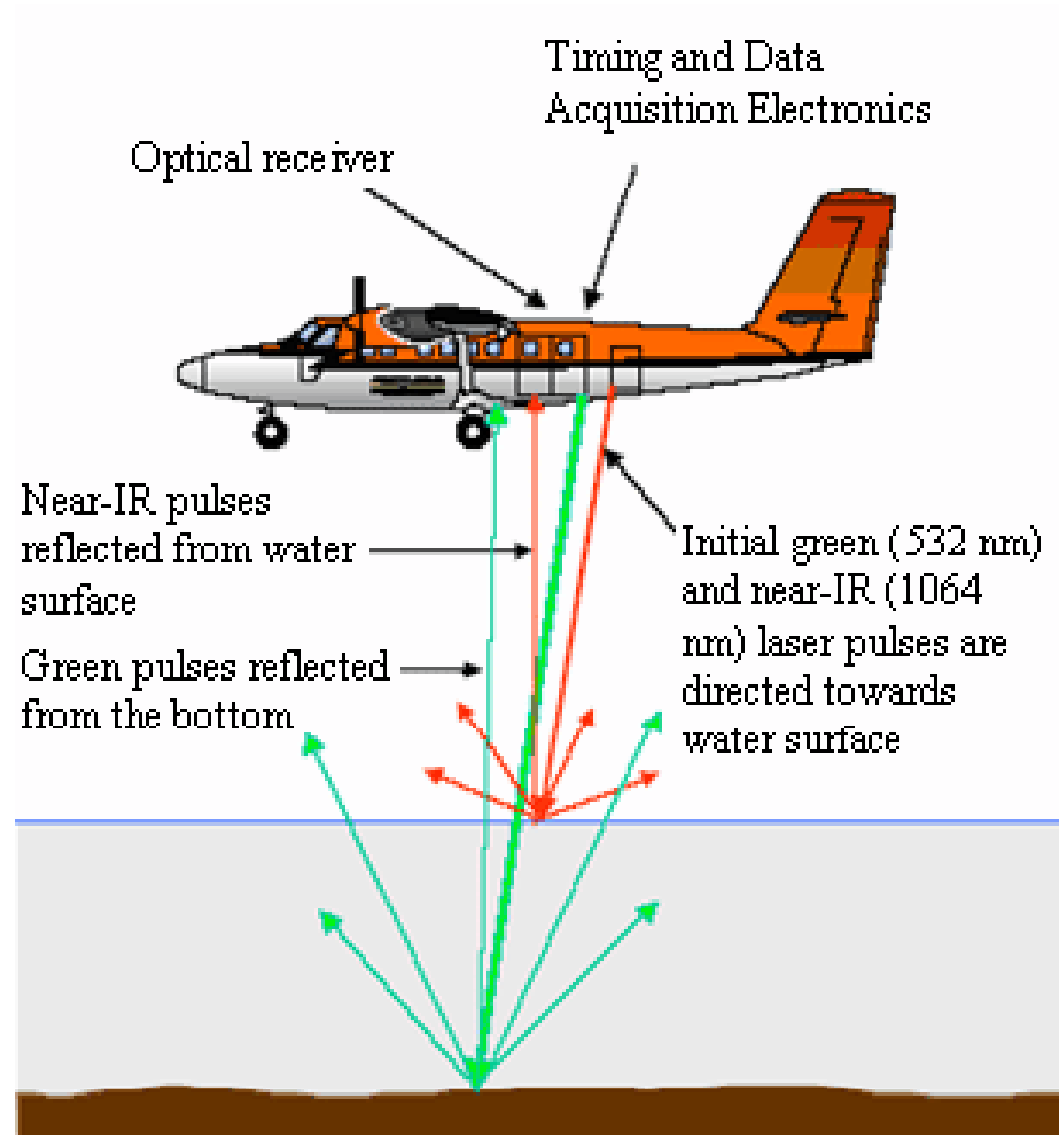
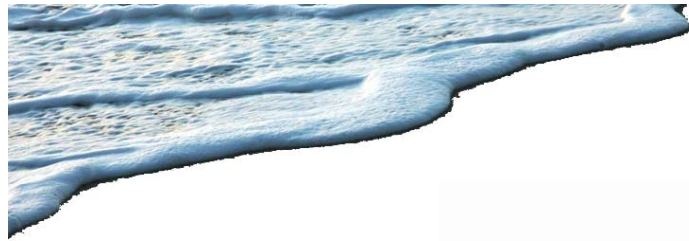


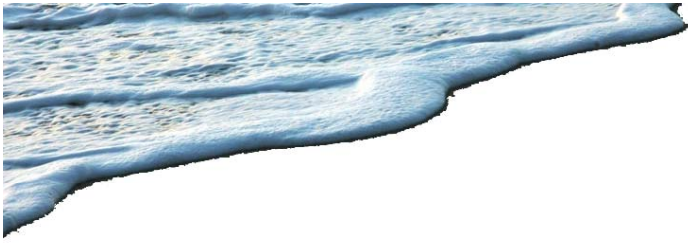
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CASE STUDIES

L I D A R



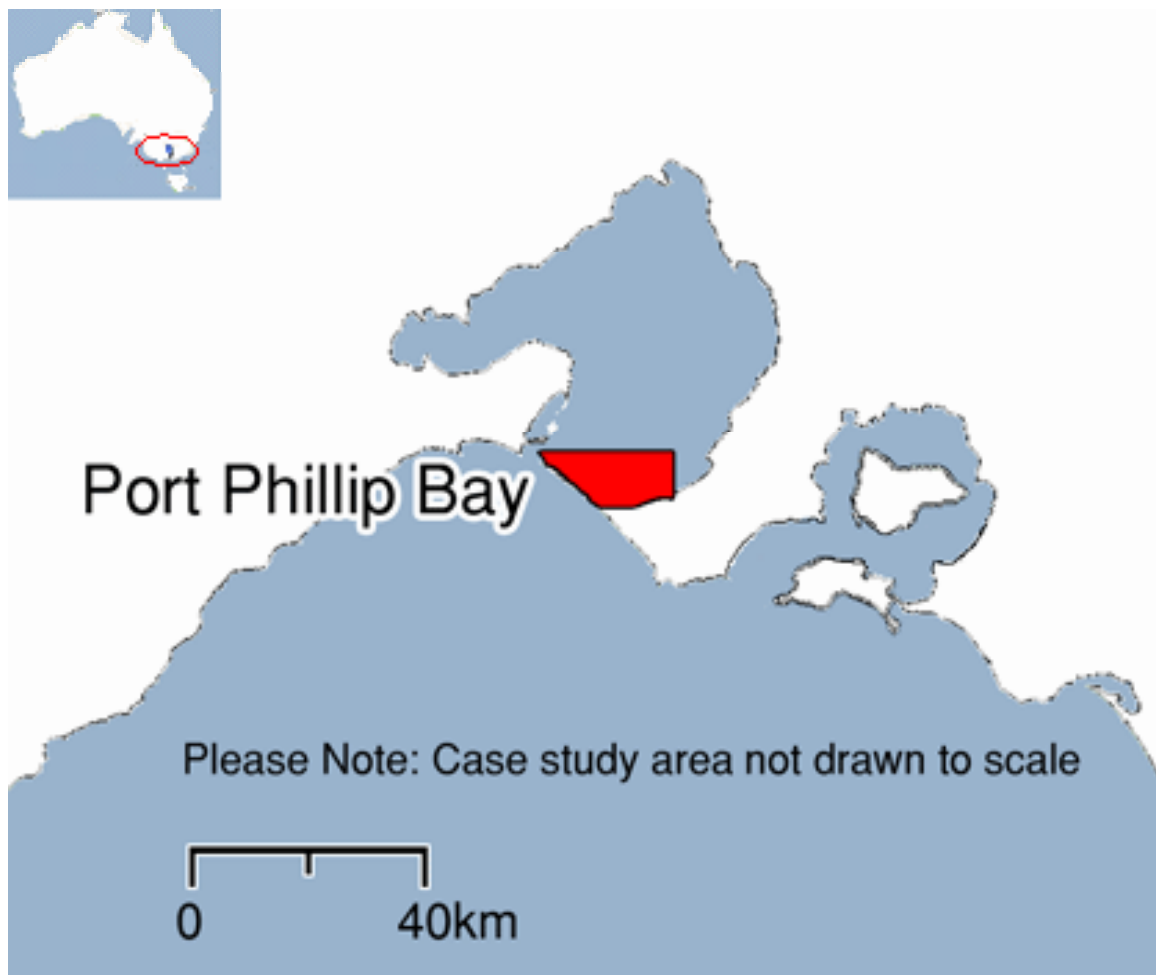
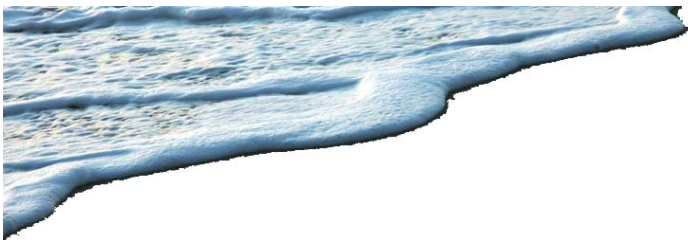


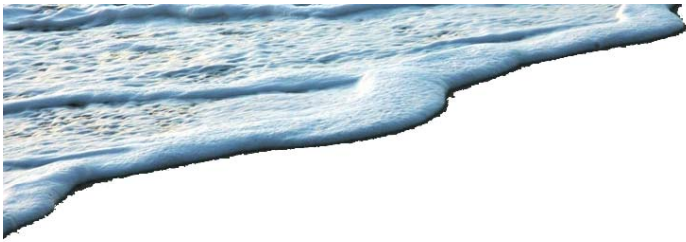
Foundations for Tidal Datum Modelling

- Hydrodynamic Tide Models
- Interpolated/Extrapolated Tide Models

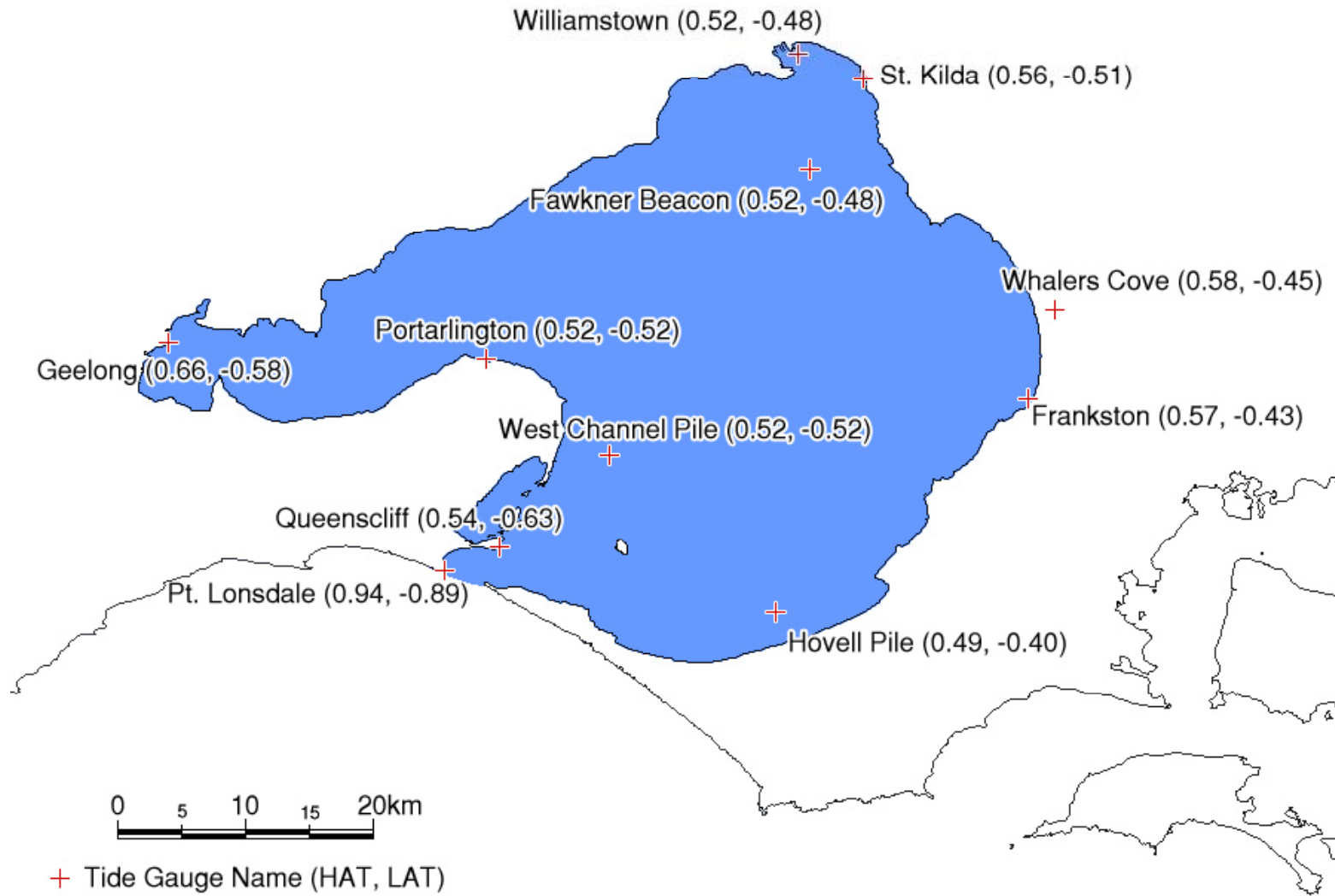
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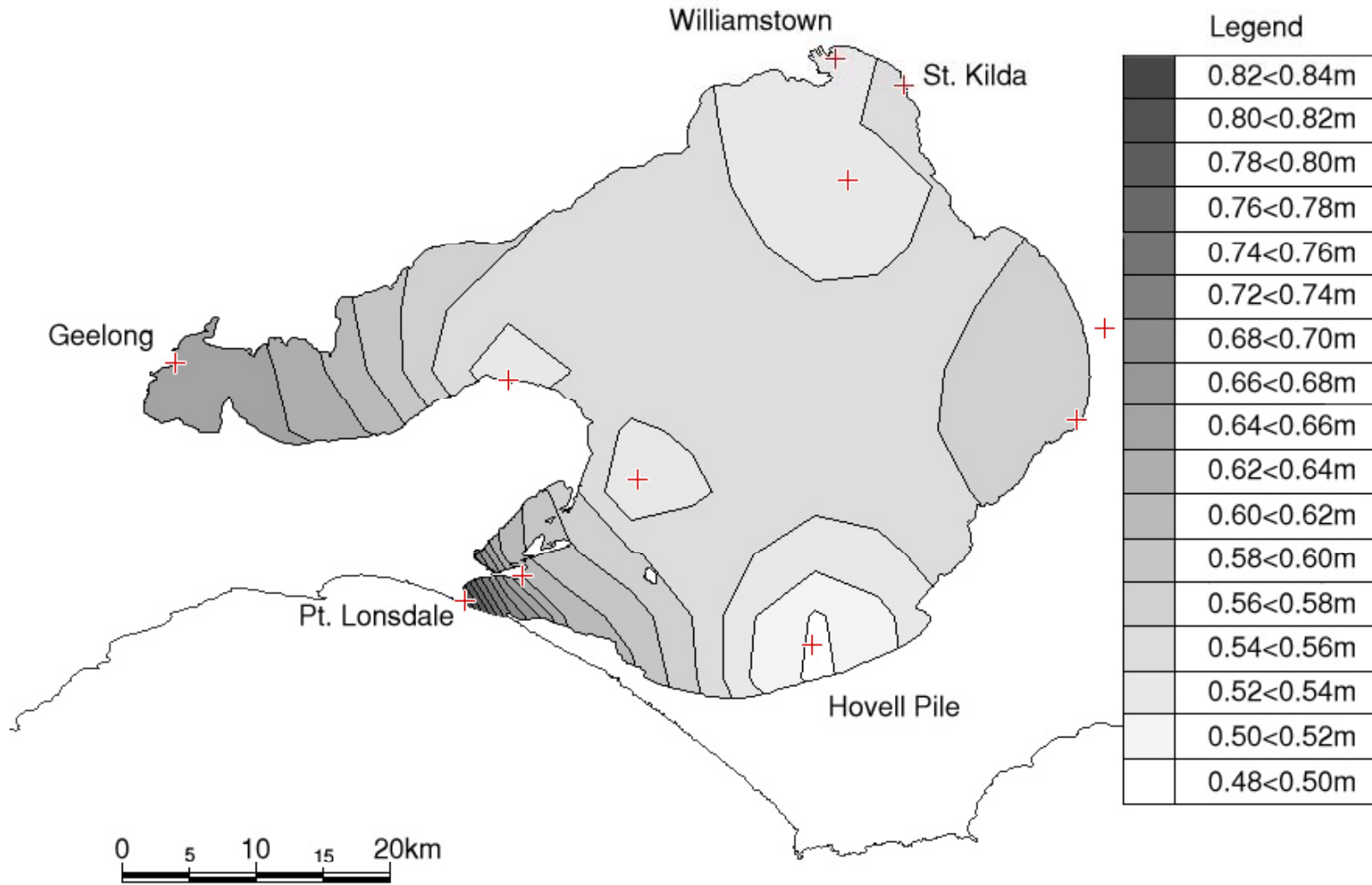
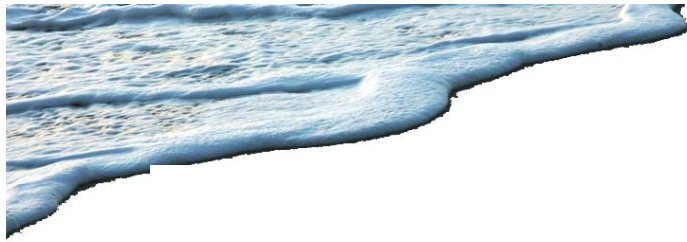




T I D E G A U G E S



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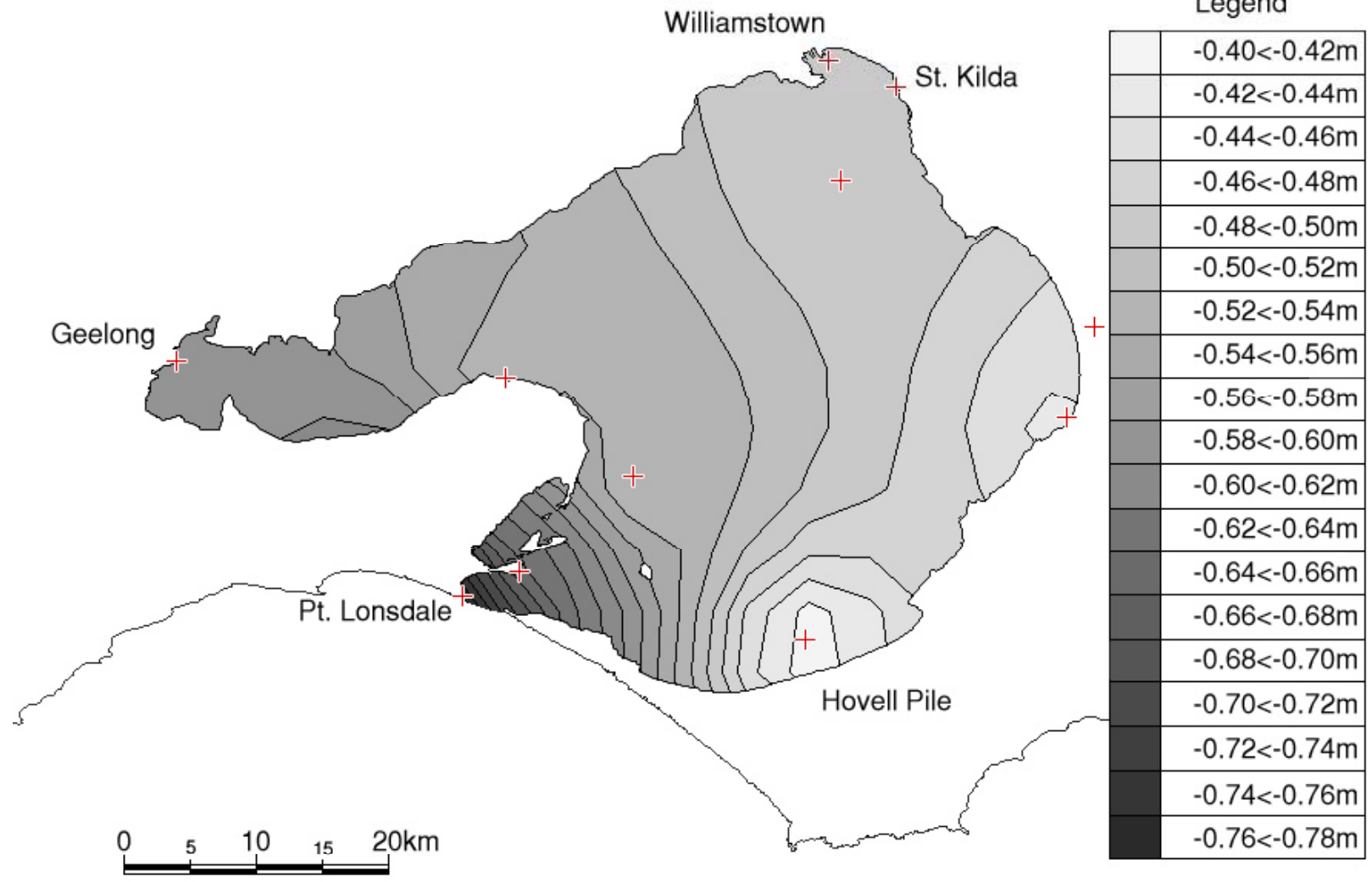
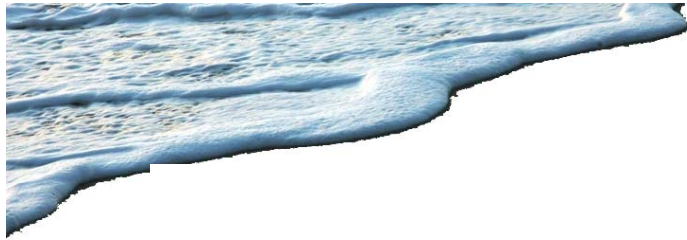
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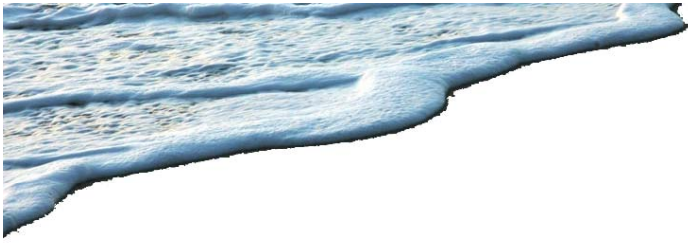


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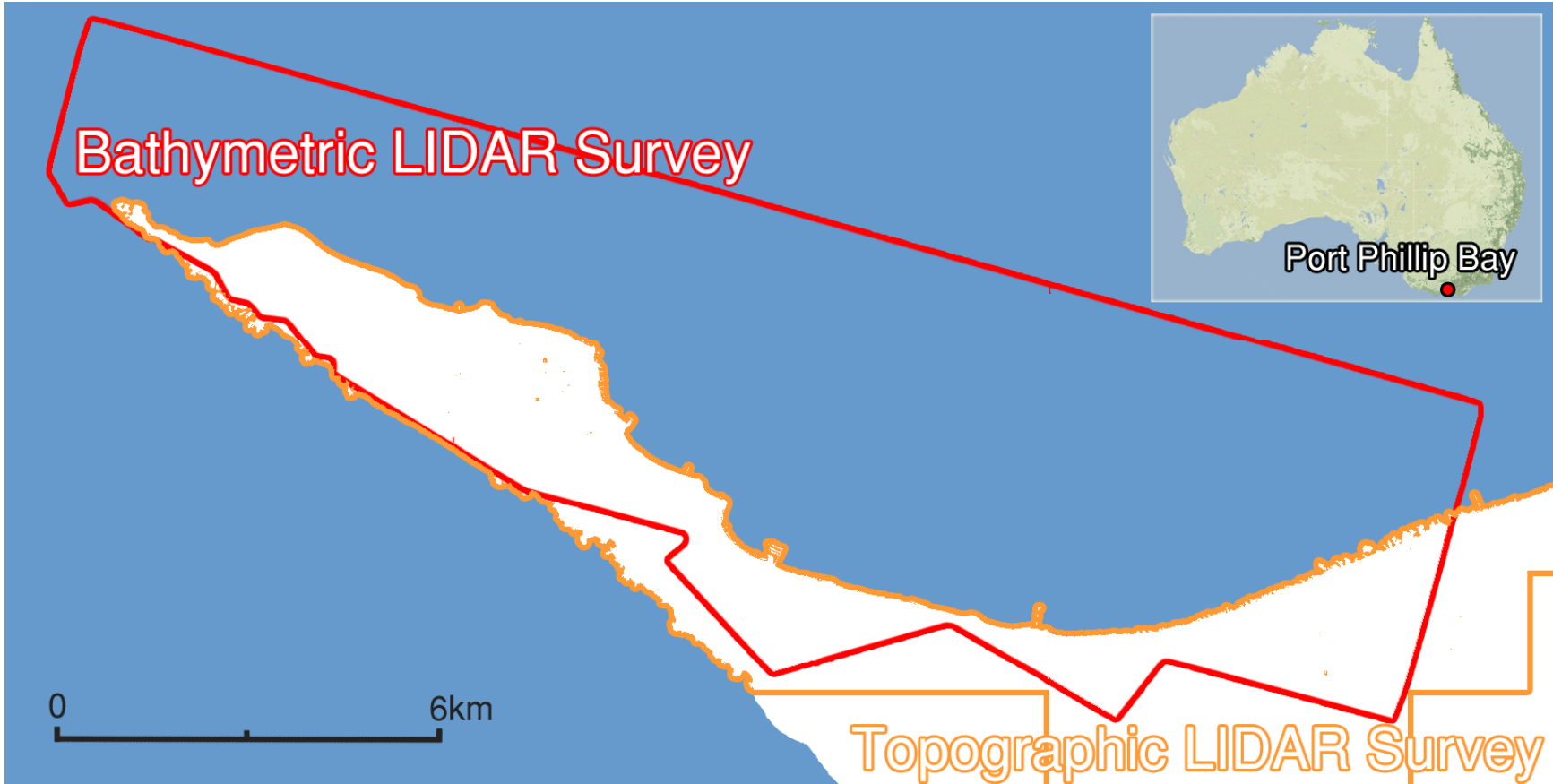
Nathan Quadros, The University of Melbourne

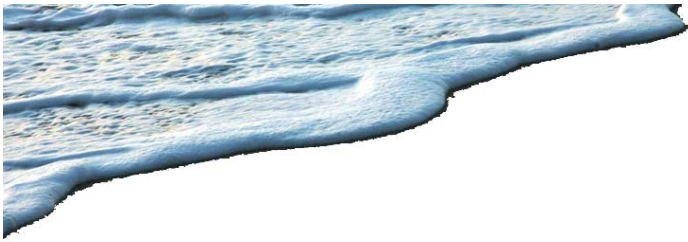




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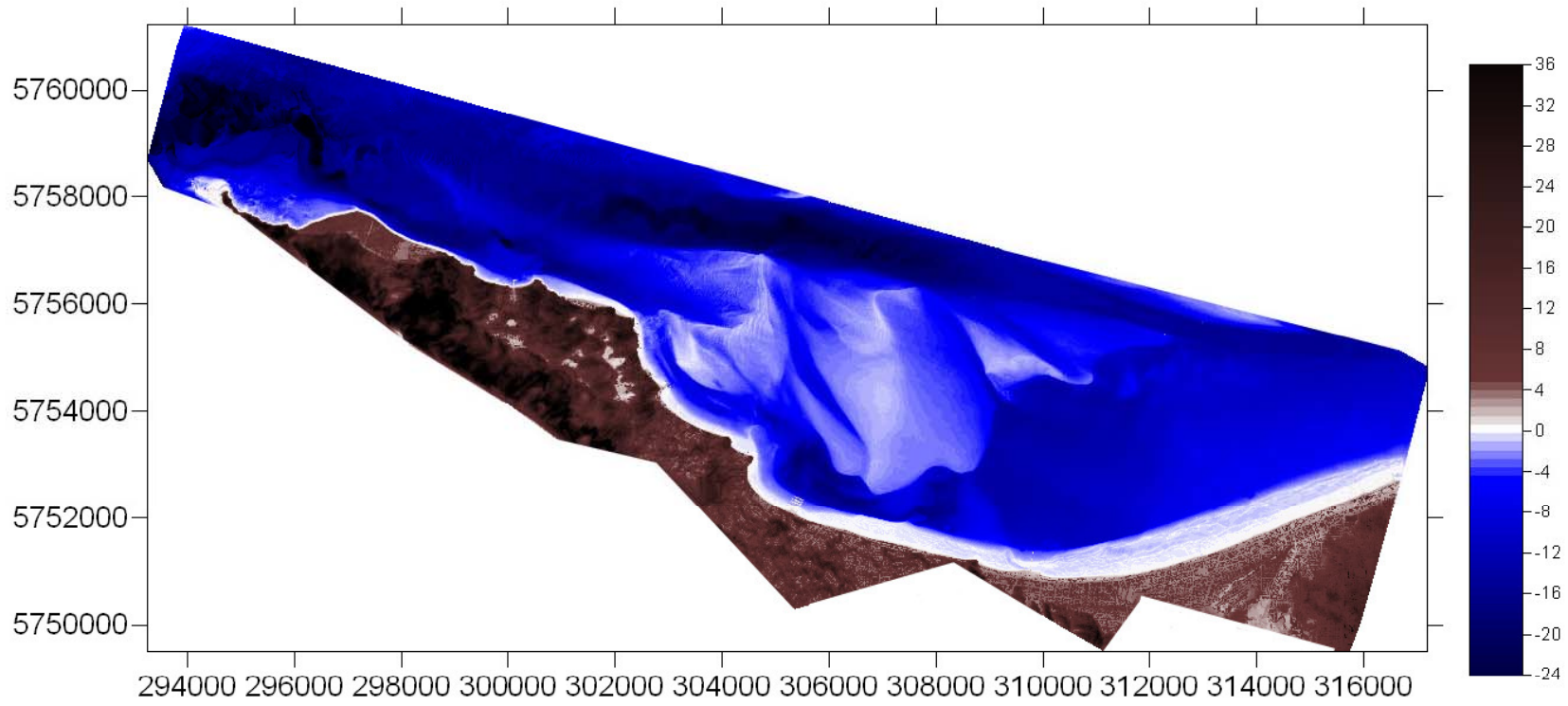
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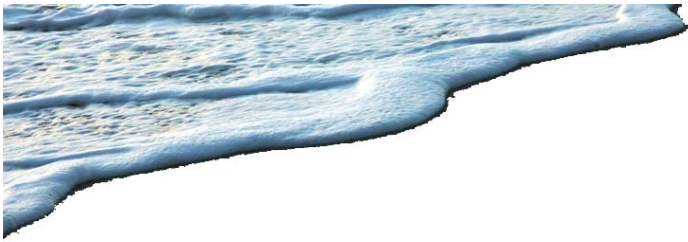




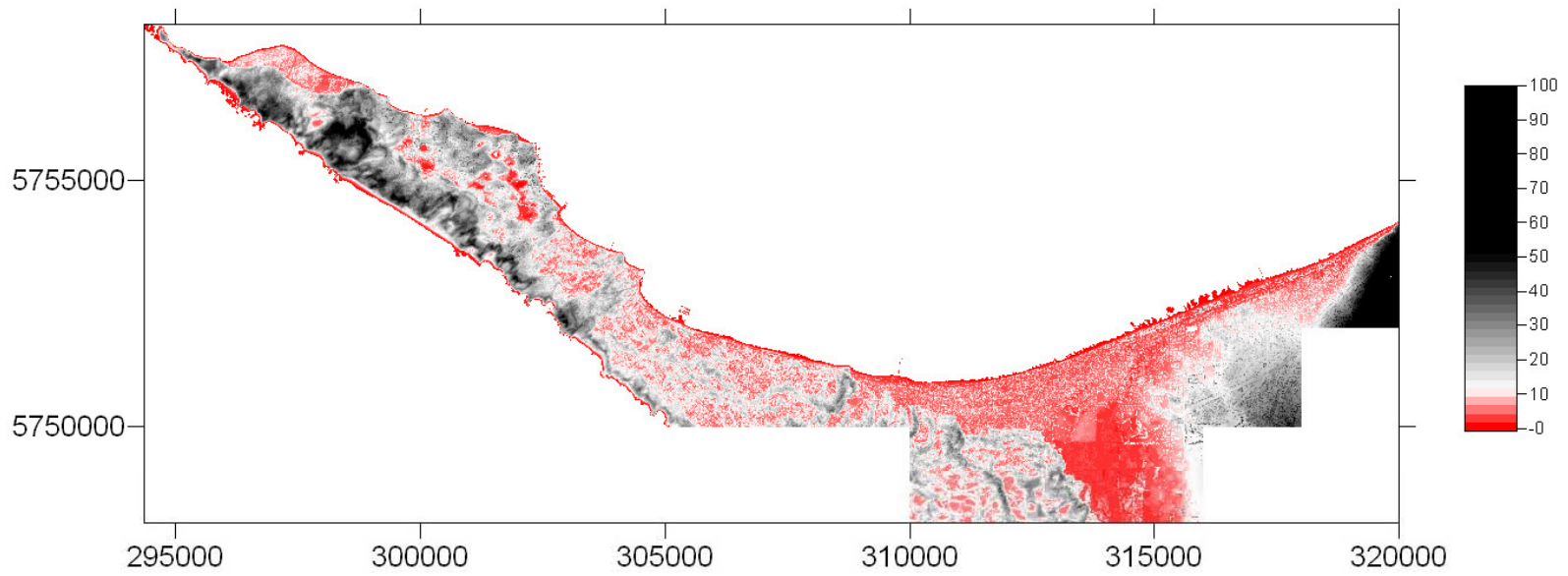
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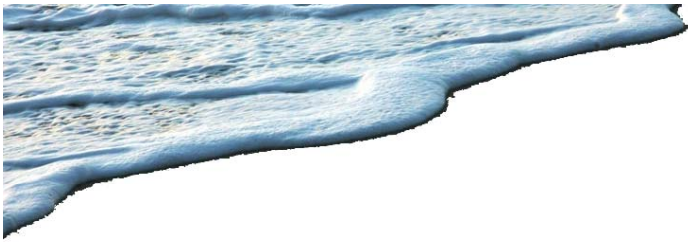


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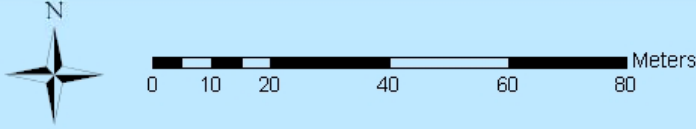
Tidal Lines - Sorrento, Victoria



Legend

 Port Phillip Bay LIDAR HAT	 Port Phillip Bay LADS HAT
 Port Phillip Bay LADS LAT	

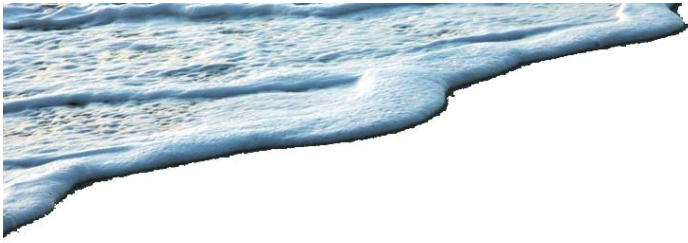
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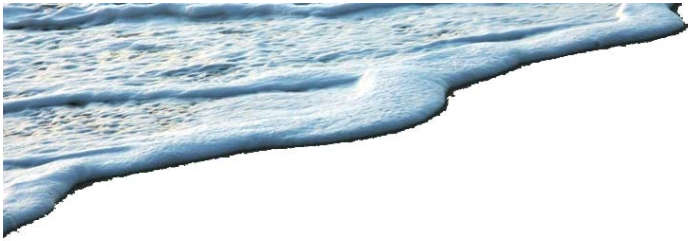


Data Integration Issues (in addition to vertical datum offset)

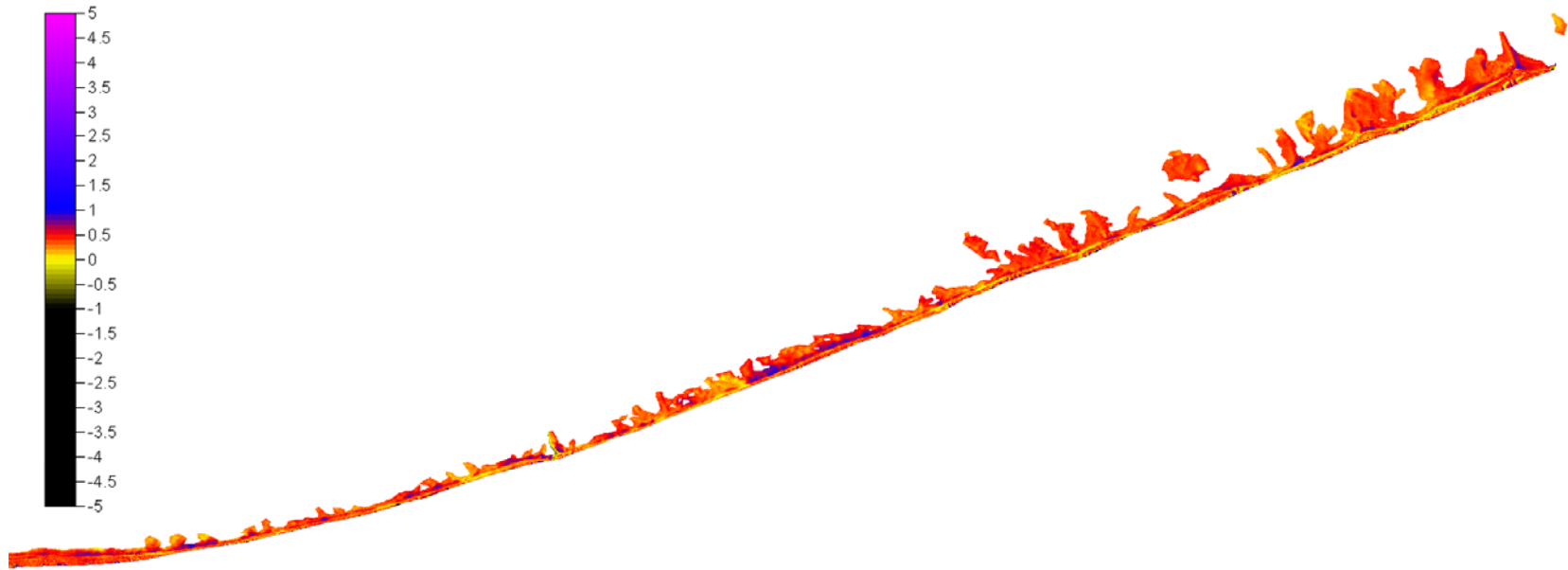
- Narrow Overlap
- Data Gaps
- Resolution
- Lack of Height Control
- Data Noise

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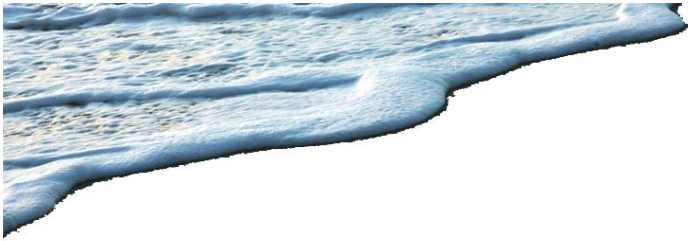


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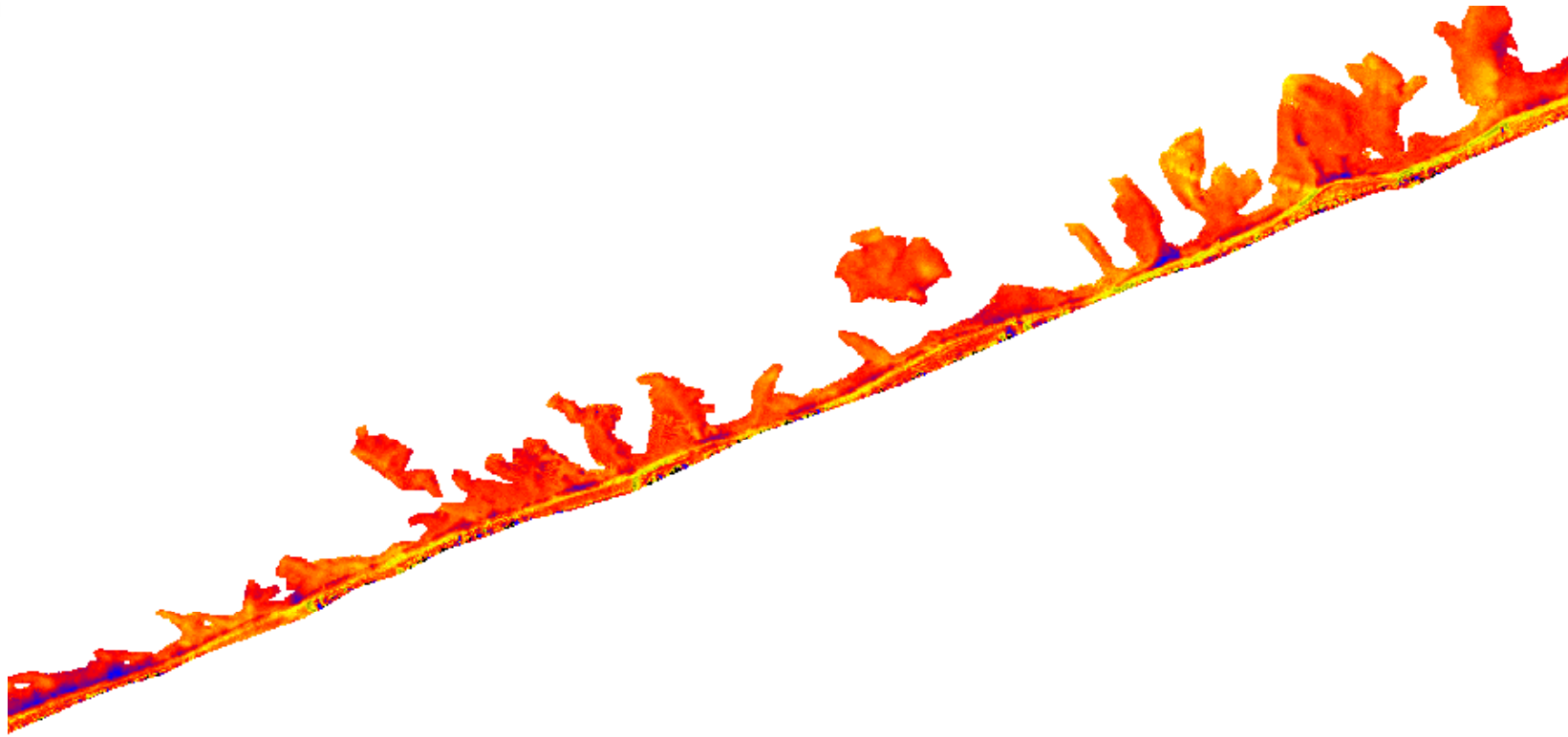


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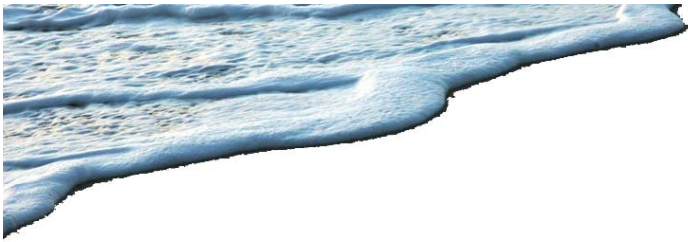


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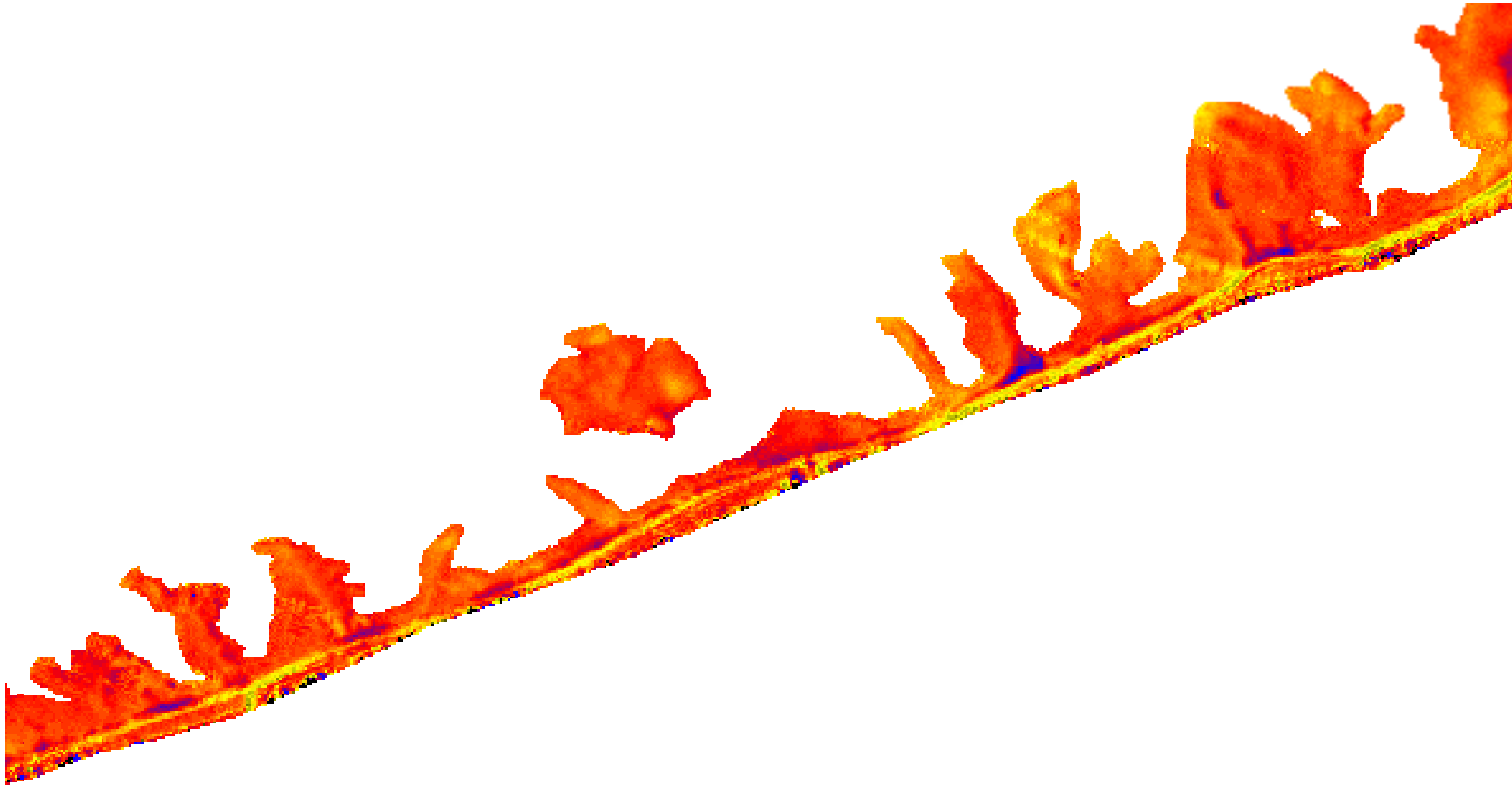


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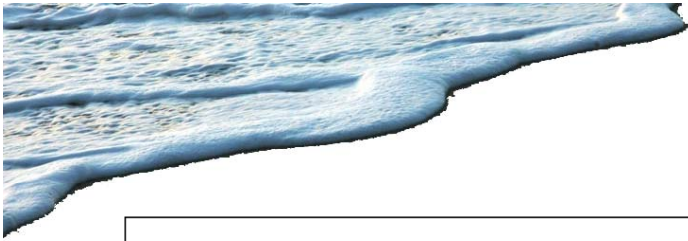


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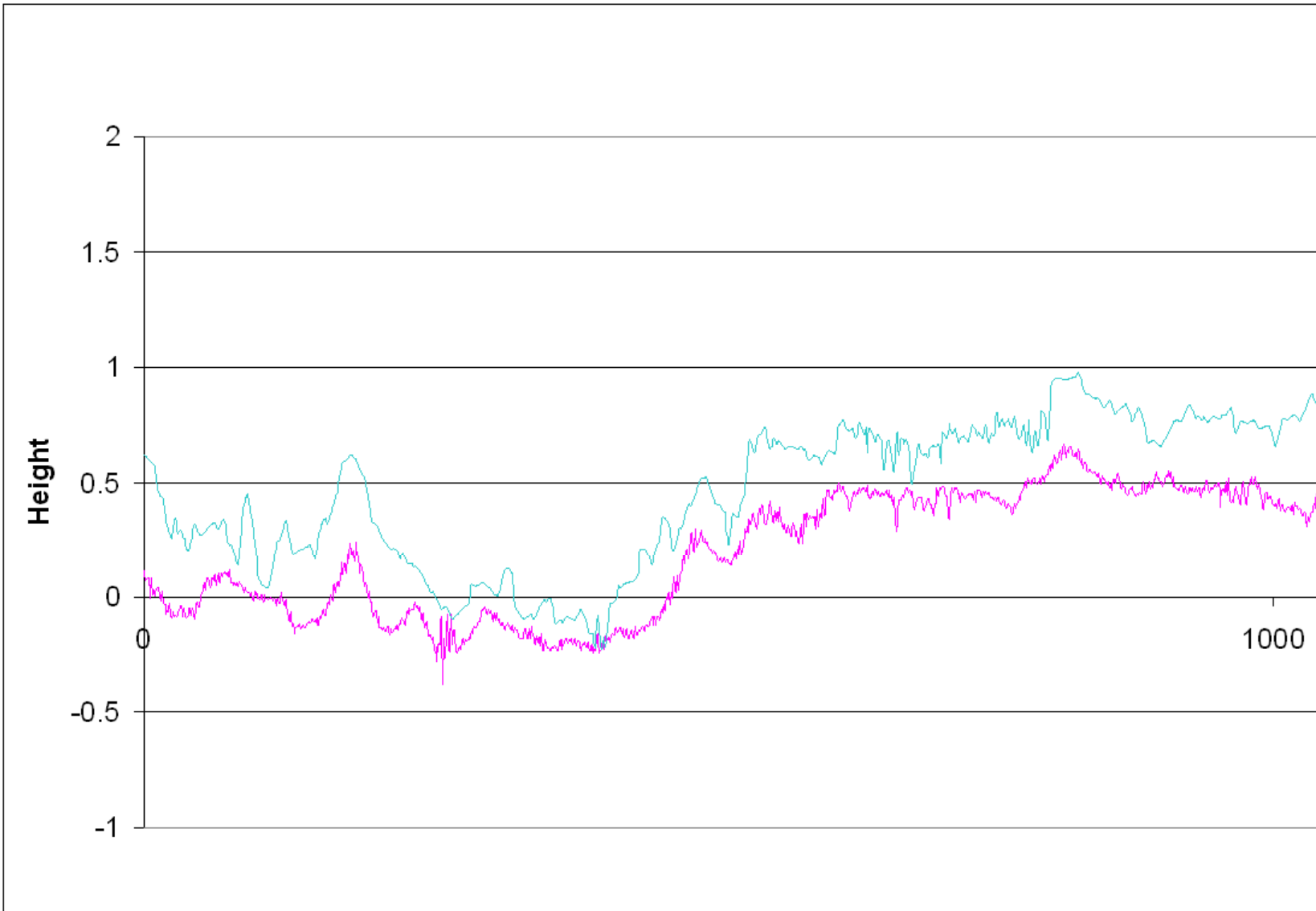


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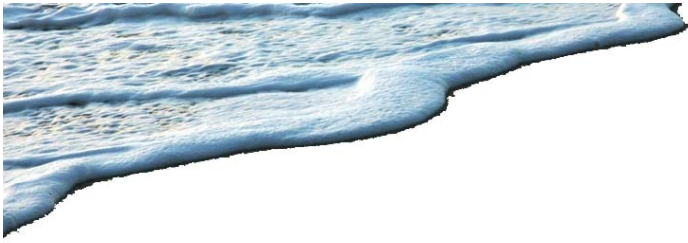
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S E C N Z E R E T T I D

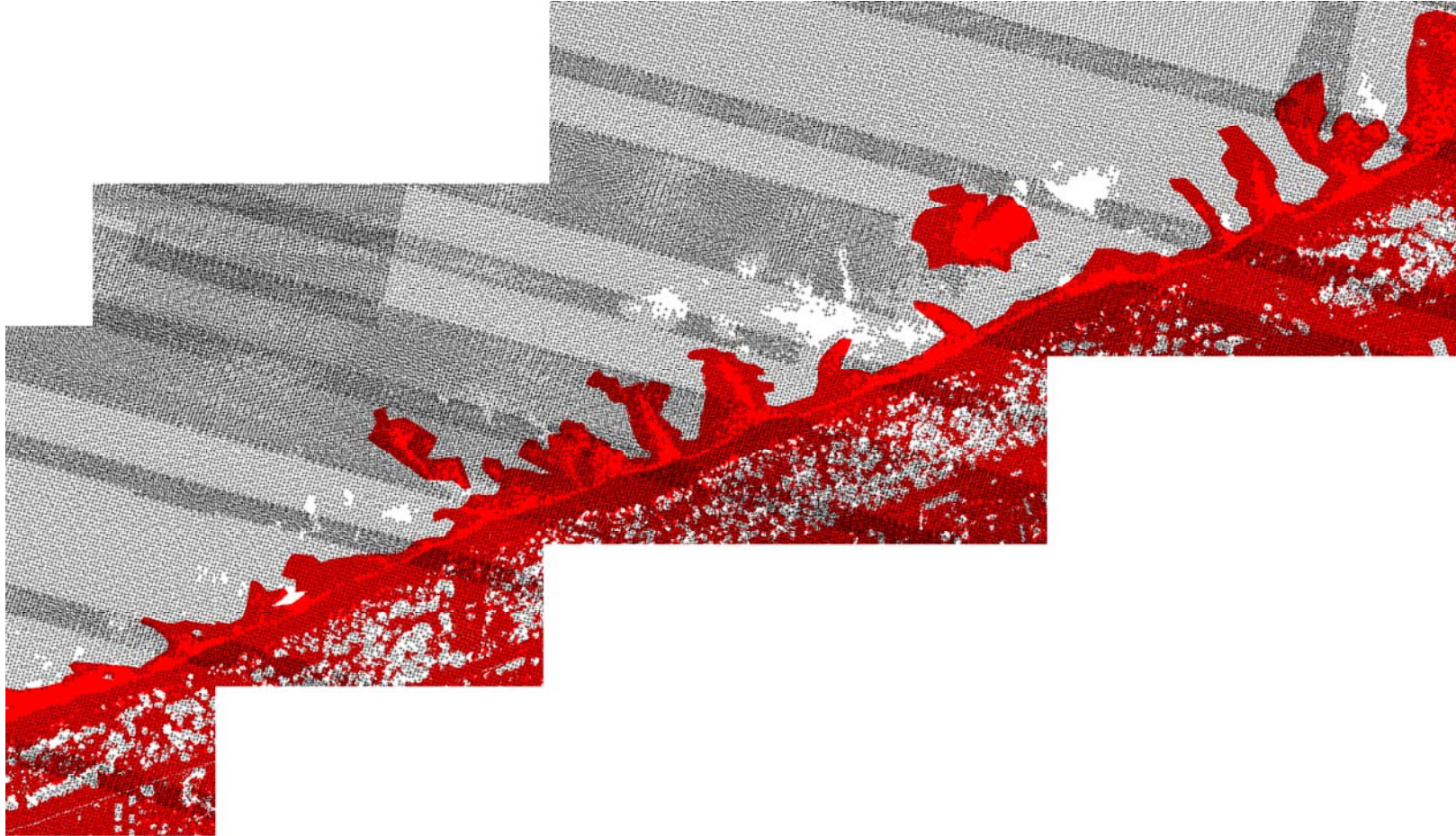
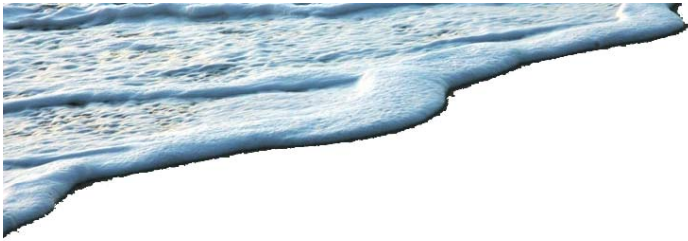


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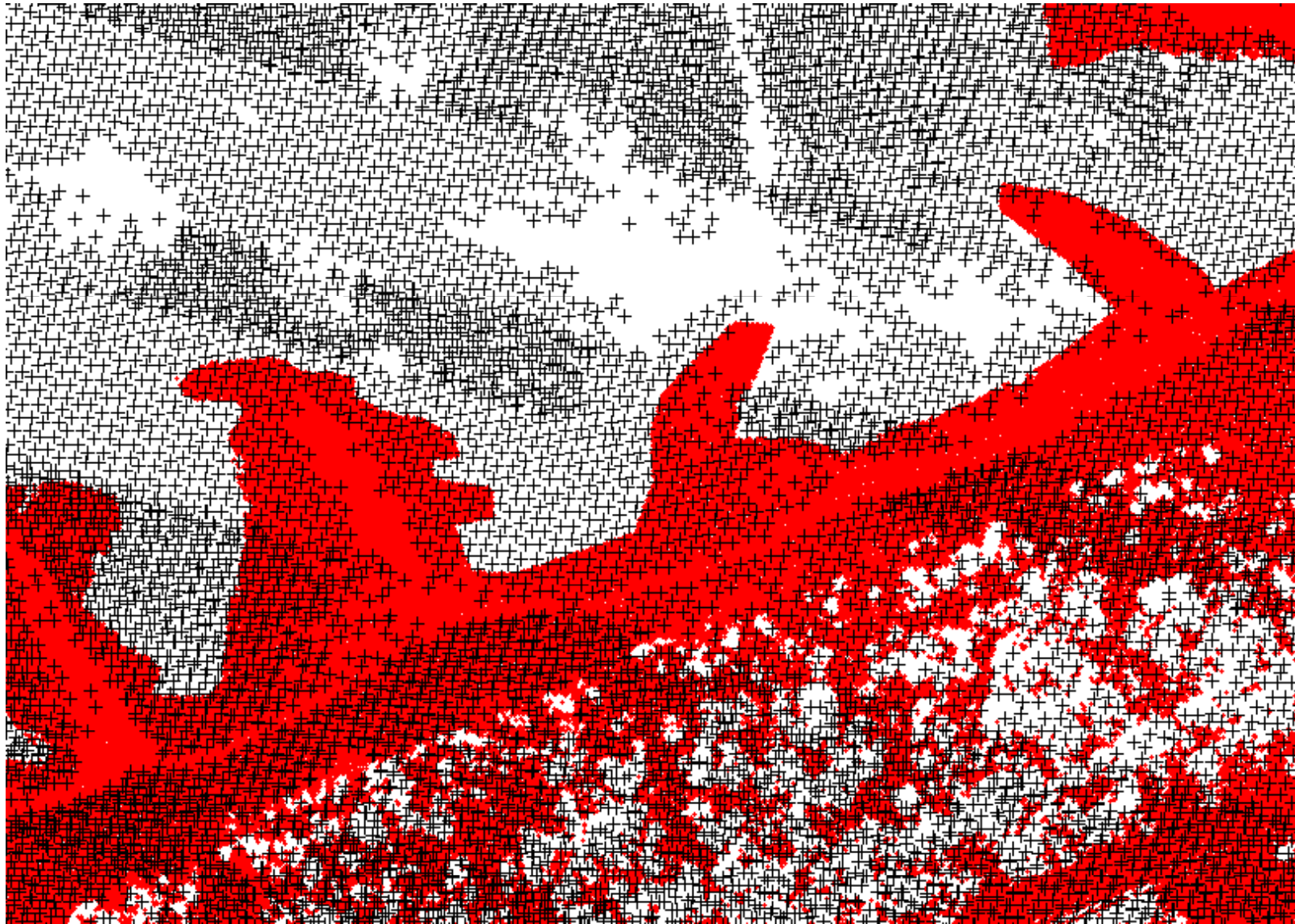
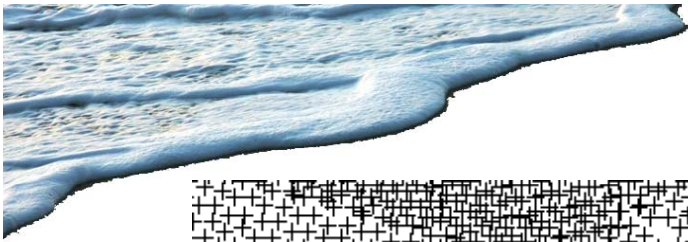
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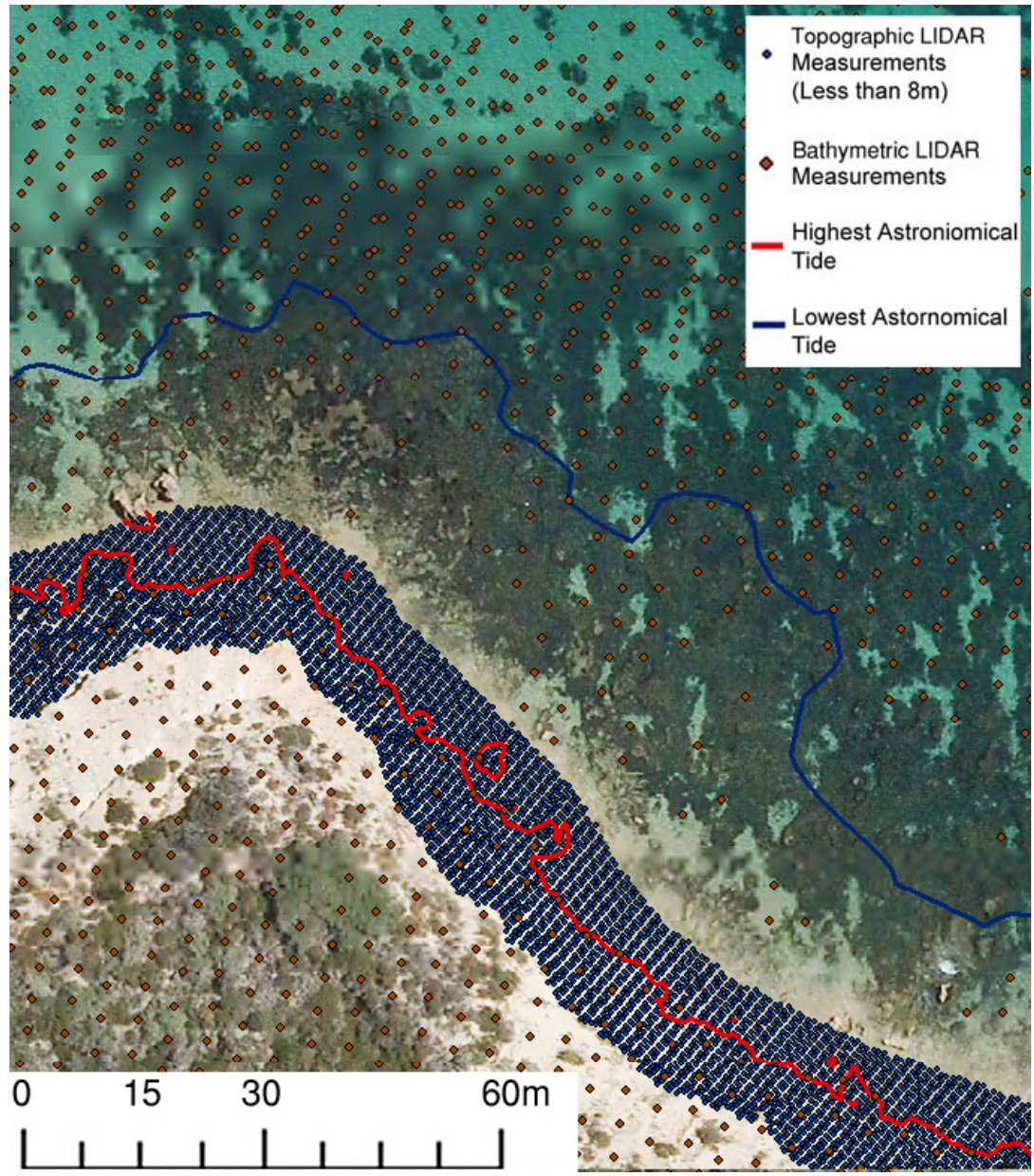
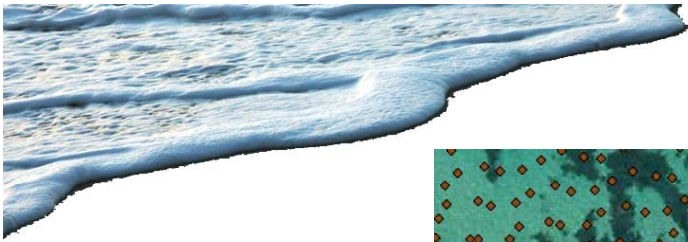


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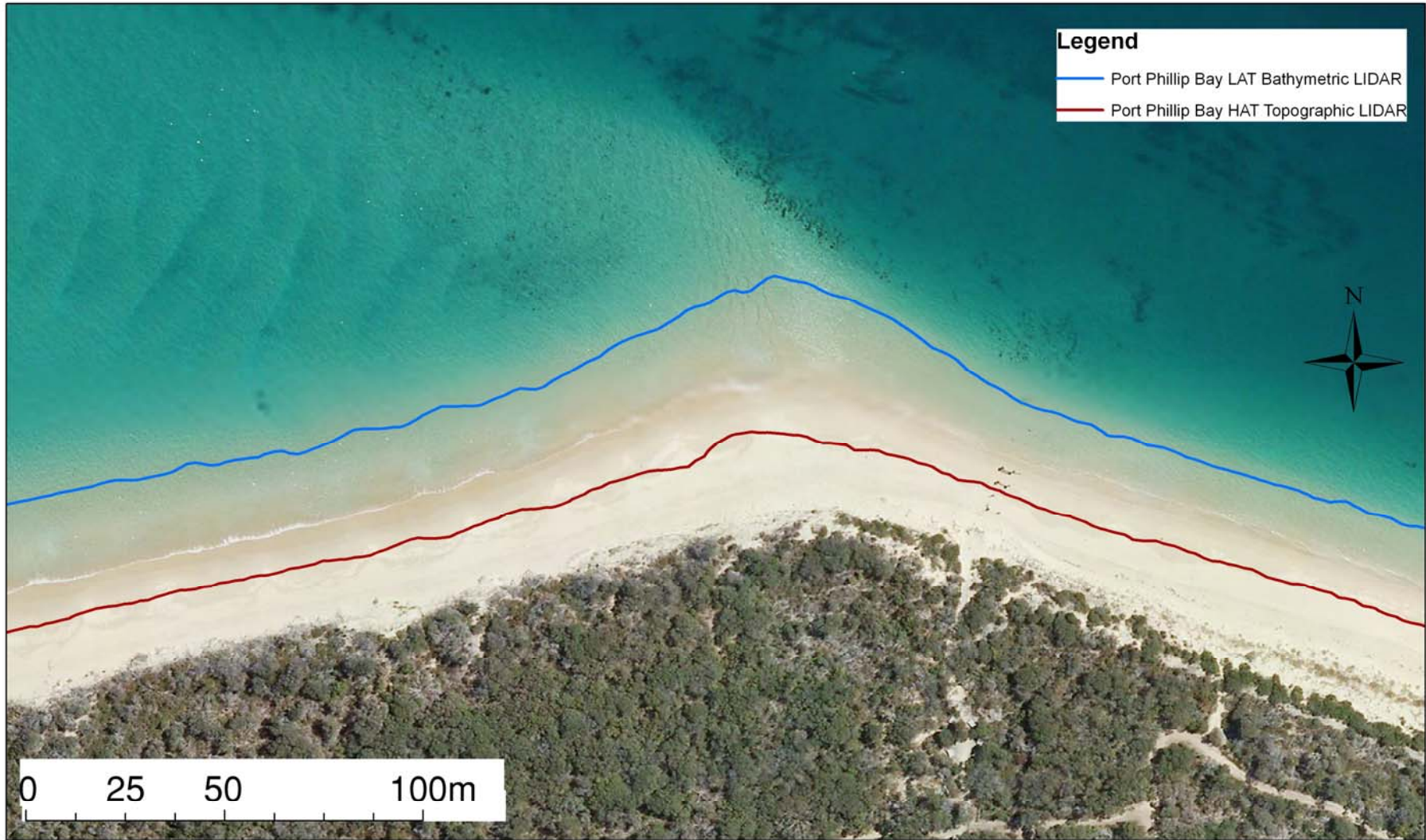
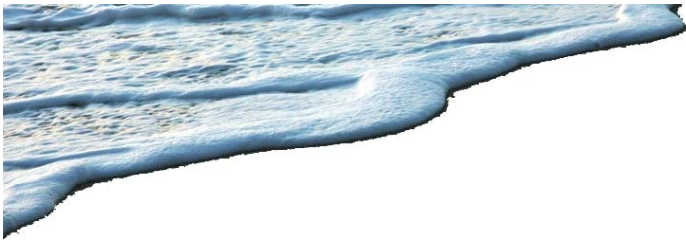




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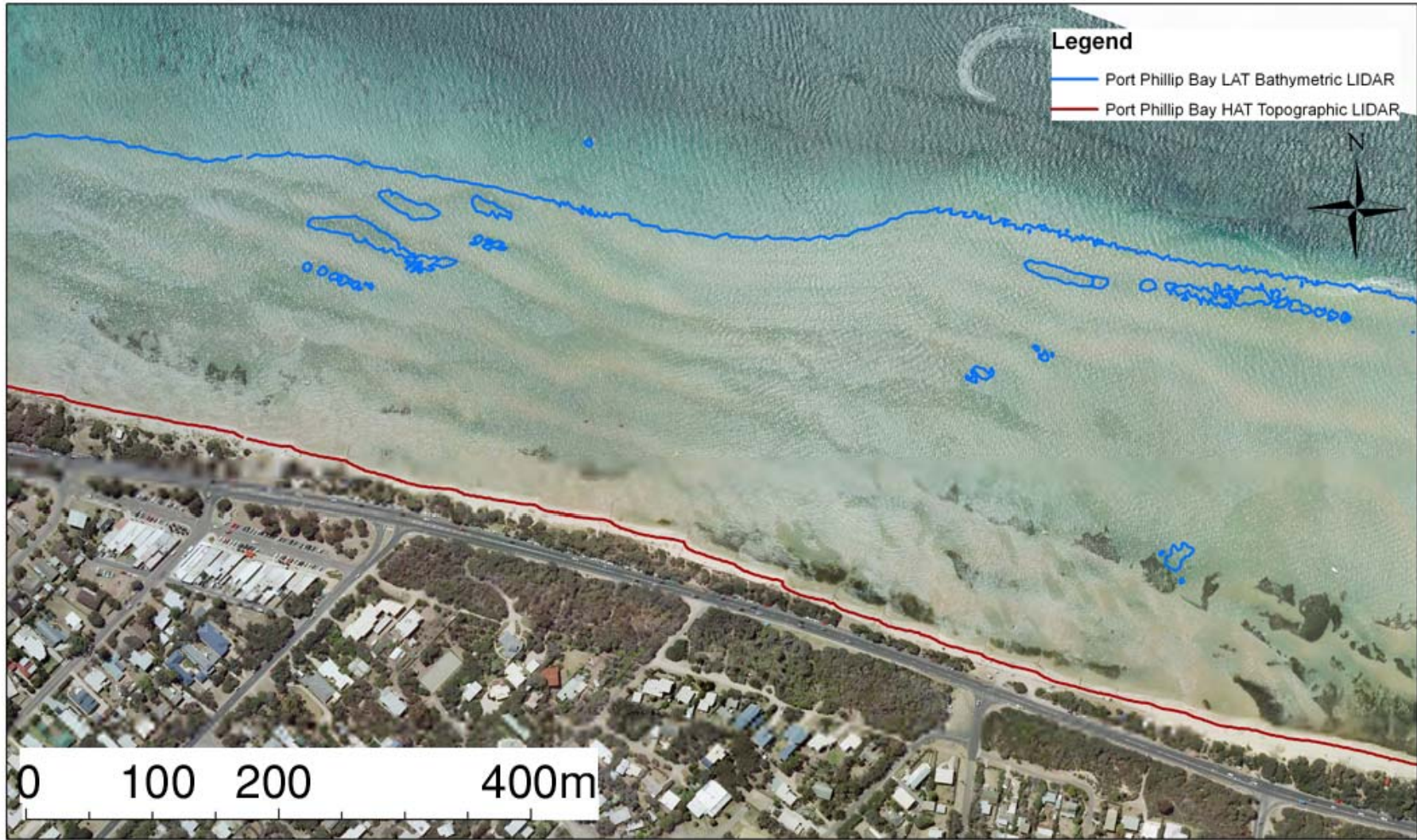
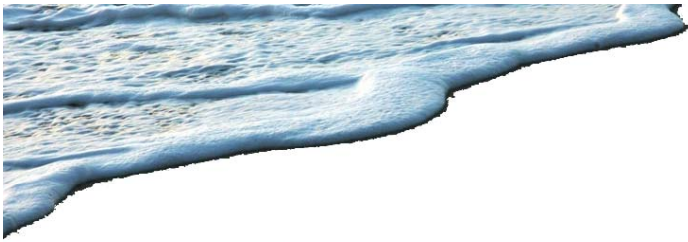


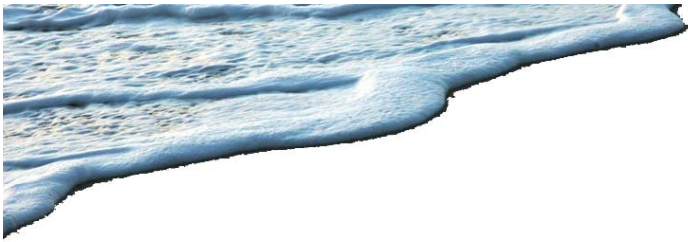
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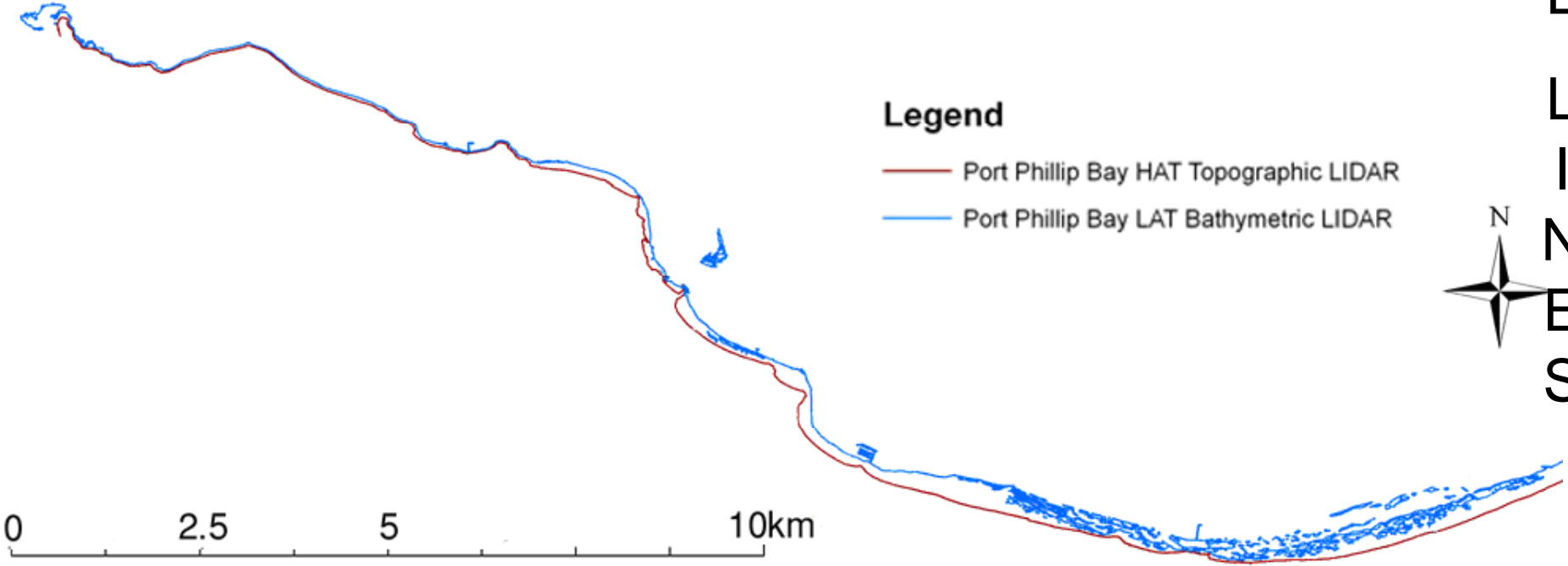


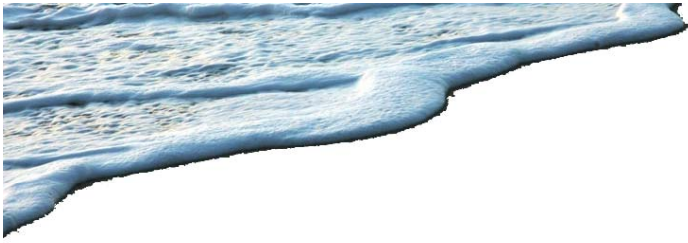
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Legend

- Port Phillip Bay HAT Topographic LIDAR
- Port Phillip Bay LAT Bathymetric LIDAR





Summary

- Topographic LIDAR provides a means for accurately delineating the line of HAT. Likewise,
- Bathymetric LIDAR provides an accurate means for delineating the line of LAT
- Hydrodynamic tide model is preferred as a means to define tidal datums.
- Interpolation between tide gauges can be used in locations with a sufficiently dense tide a gauge network.
- Differences between the topographic and bathymetric LIDAR datasets need to be overcome if a seamless, integrated LIDAR DEM is to be used to derive the littoral zone boundaries.