



# SAND TRACING STUDY – SWANSEA CHANNEL



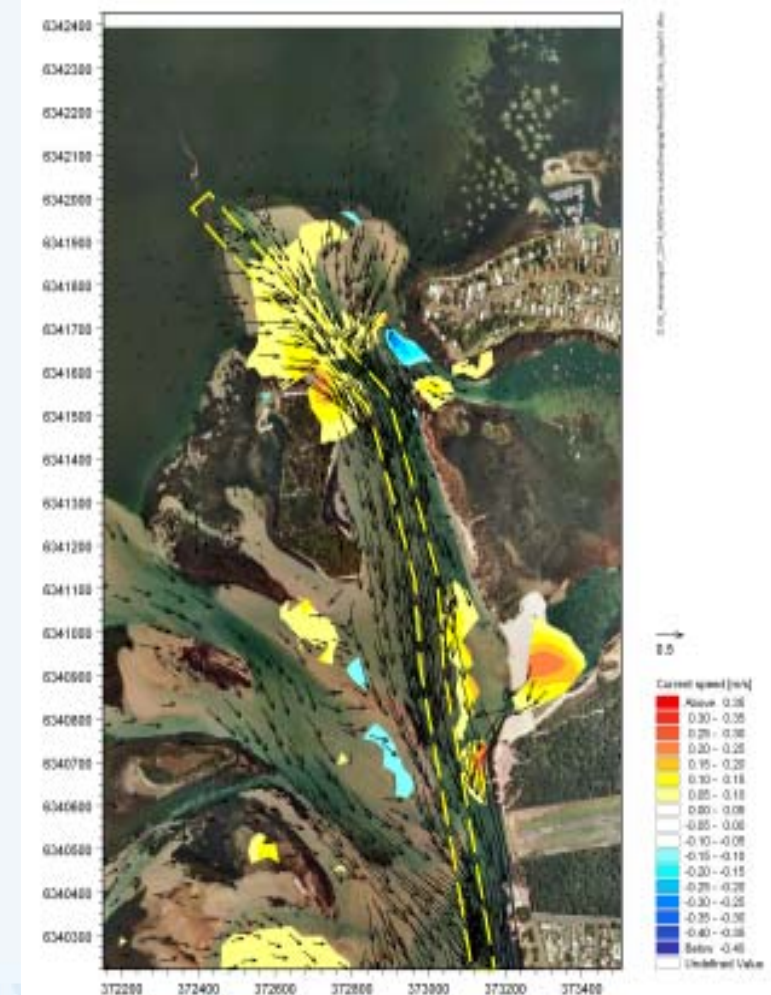
## SAND TRACING STUDY

Key objective: improve understanding of sediment transport processes

- identify the critical pathways
- assess suitability of possible placement locations for dredged sand

Update the existing hydrodynamic model

High level recommendations for future dredging





## SAND TRACING STUDY

### Sand tracing particles

- fluorescent throughout, not coated
- Specific Gravity 2.65
- grain size: 125-500 $\mu$ m  
(fine to medium sized sand)

Act and behave like real sand grains

Provide unequivocal and tangible data  
on actual sediment transport





## SAND TRACING STUDY

Sand tracing particle structure

- Homogeneous blend
- Mostly comprises barium sulphate
- Non toxic and inert
- Do not absorb contaminants

Environmentally benign

*Barium sulphate used in medical practice  
as “barium meal”*

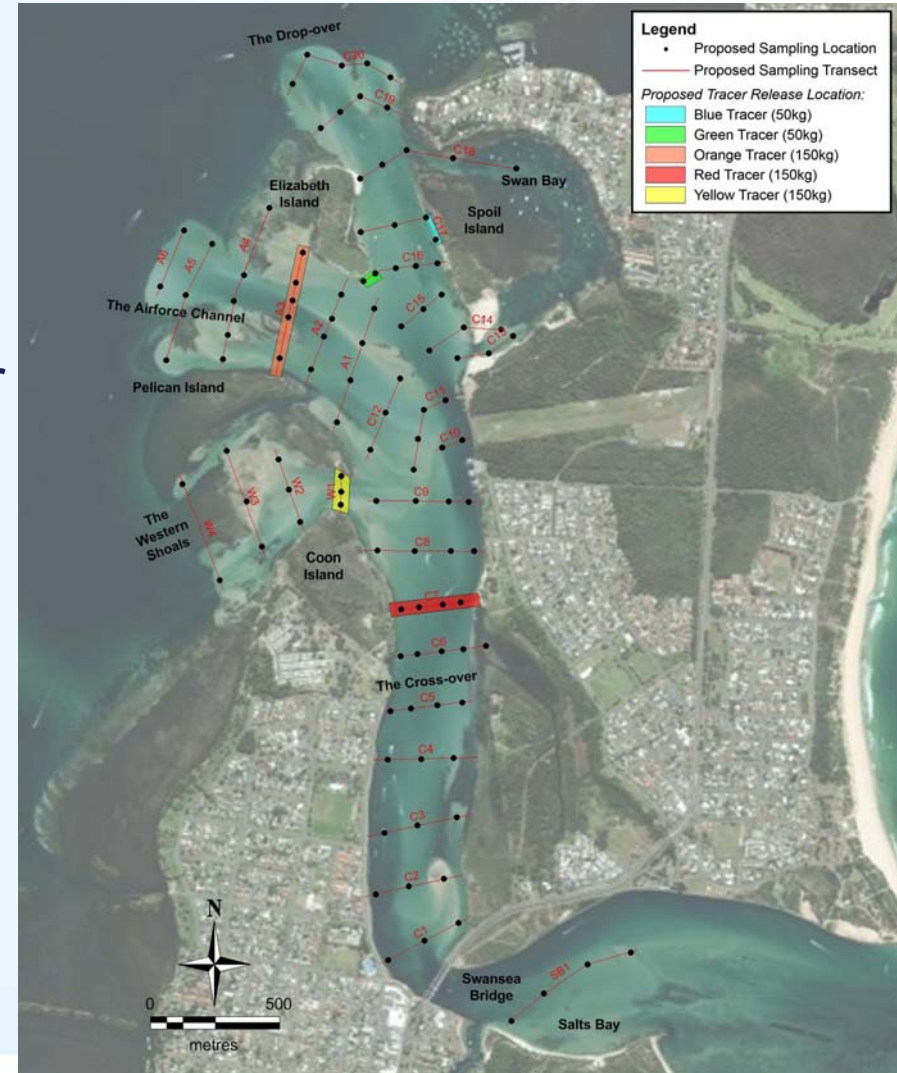




# SAND TRACING STUDY

## Key Activities

- Tracer Deployment – 6/11/15
- Sampling Exercise 1 – December 2015
- Sampling Exercise 2 – February 2016
- ADCP Transects – January 2016
- Reporting (interim and final)





## SAND TRACING STUDY

Study Outcomes	Future Opportunities
<p>Identify critical sediment transport pathways – conceptual model</p> <p>Update hydrodynamics model</p> <p>High level recommendations for future dredging</p>	<p>Optimise dredging program</p> <ul style="list-style-type: none"><li>• Hydrographic survey analysis</li><li>• Identify alternative dredging design concepts</li><li>• Validate numerical model with tracer results</li><li>• Run model for alternative designs</li><li>• Recommendations for maintenance dredging designs, frequency, cost</li></ul>