



## Sam O'Neill

**Nationality:** New Zealand

**Profession:** Oceanographer

**Contact Details:** Ph: +64 210 252 7756 E: [s.oneill@ecoast.co.nz](mailto:s.oneill@ecoast.co.nz)

### PRESENT POSITION:

- Oceanographer, eCoast Ltd.

### SPECIALISATION:

- Physical oceanography, atmosphere-ocean energy fluxes, coastal geomorphology, surf zone dynamics, hydrodynamic numerical modelling, hydrographic data collection, coastal monitoring and hazard evaluation.

### YEARS OF EXPERIENCE:

- Consulting since 2014.

### KEY QUALIFICATIONS:

- MSc in Physical Oceanography, University of Melbourne, Australia.
- BSc in Earth and Ocean Sciences, University of Waikato, New Zealand.

### PERSONAL STATEMENT:

Sam O'Neill's passion for the ocean and coastal environment, together with his broad academic background in earth and marine sciences has led to an innate understanding of the physical dynamics of the ocean. With interests in atmosphere-ocean interaction, coastal geomorphology, surf zone dynamics and numerical modelling, Sam maintains an active involvement in both offshore and nearshore oceanography.

In a collaboration with the Bureau of Meteorology, Sam completed his Master's degree at the University of Melbourne, Australia's top ranked university. His research focussed on wind, wave and current driven dynamics at the ocean surface with particular emphasis placed on the Victorian mesoscale coastal-water surface drift structure and the greater Southern Ocean circulation regime. Through the application of both observational and theoretical methods, Sam has gained a thorough understanding of oceanographic data acquisition/analysis and numerical modelling techniques.

### WORK HISTORY

- October 2014 – Present: Oceanographer, eCoast Marine Consulting and Research, Raglan, New Zealand.
- January 2014 – March 2014: Research Assistant and Quality Control Officer, Bond University, Gold Coast, Australia. Supported by Surf Life Saving Australia (SLSA), multiple beach morphological assessments and resulting surf characteristics were accurately and reliably measured enabling surf carnival directors to manage races based on sound quantitative information, both prior to and during events.

## SPECIALISED SKILLS/TRAINING AND OTHER BACKGROUND

- Numerical modelling: Delft3D, SWAN, Clawpack, ComMIT, DualSPHysics.
- Processing: UNIX, Matlab, Python, MS-Dos, GMT, Surfer, RStudio, GIMP, GraphicsMagick, CloudCompare.
- GIS: QGIS, Image rectification, Google Earth Pro (KML).
- Experienced with the calibration, deployment and data management of a range of oceanographic instrumentation and software including: ADCP, CTD, HOBO.
- Comfortable with research vessel operations including mooring changes, winch driven collection of water and sediment samples, and general deployment and retrieval of oceanographic equipment.

## NATIONAL AND INTERNATIONAL CONFERENCES ATTENDED

- New Zealand Coastal Society (ENZ) Conference. Gisborne, New Zealand, November 2018.
- New Zealand Coastal Society (IPENZ) Conference. Tauranga, New Zealand, November 2017.
- New Zealand Coastal Society (IPENZ) Conference. Raglan, New Zealand, November 2014.
- Australian Meteorological and Oceanographic Society (AMOS) Conference. Melbourne, Australia February 2013.

## THESIS

- O'Neill, S. M. G. (2013). *Modelling the Southern Ocean Surface Drift Field in the Australian Region*. Unpublished Master of Science Thesis, University of Melbourne, Melbourne, Australia.

## PUBLICATIONS SUMMARY

### FULL LENGTH CONFERENCE PAPERS AND BOOK CHAPTERS

#### 2015

Borrero, J.C., LeVeque, R.J., S. Dougal Greer, **Sam O'Neill** and Brisa N. Davis (2015) Observations and Modelling of Tsunami Currents at the Port of Tauranga, New Zealand, Proceedings of Coasts and Ports Conference, Auckland, New Zealand, September 2015.

### RESEARCH (Incomplete) – Note, many consulting projects incorporate components of research.

#### 2016-2018

Mead, S. T., E Atkin, R. Macintosh, **S. O'Neill** and N. Ducharneux. 2016-2018. *Development of an Inland Surfing Facility – Numerical and Physical Modelling*. Funded by Surf Generation and Callaghan Innovation.

## ABSTRACTS

#### 2018

**O'Neill, S.**, Greer, D., Mead, S. 2018. 3D Hydrodynamic Numerical Modelling of the Wairoa River Wastewater Treatment Plant Outfall. New Zealand Coastal Society (NZCS) Conference. Gisborne, New Zealand, November 2018.

#### 2017

**O'Neill, S.** McIntosh, R., Borrero, J.C., and Mead, S.T., Hydrodynamic Flood Modelling at Ruawai, Dargaville-Wairoa and Awanui, Northland NZ. New Zealand Coastal Society (IPENZ) Conference, Tauranga, New Zealand, 15-17 November 2017.

McIntosh, R., Mead, S. T., D. Greer and **S. O'Neill**, 2017. Upgrading the Goodman Fielder Poultry Processing Facility in the Rewa River catchment, Fiji and subsequent impacts on downstream water quality. New Zealand Coastal Society (IPENZ) Conference, Tauranga, New Zealand, 15-17 November 2017.

## CONSULTING AND TECHNICAL REPORTS (Incomplete)

### 2019

Greer, D., **O'Neill**, S., 2019, Port Spencer Sediment Transport Modelling Investigation, Prepared for Free Eyre, August 2019

Greer, D., McIntosh, R., **O'Neill**, S., 2019, Long Term Hydrodynamic Modelling of Mozambique, Prepared for Deakin University, August 2019

Greer, D., McIntosh, R., **O'Neill**, S., E. Atkin, 2019. Phu Cong Soc Trang Offshore Wind Farm Project: Metocean Data Overview. Prepared for Mainstream Renewable Power and the Phu Cuong Group. Spencer gulf

Greer, D., **O'Neill**, S., Borrero, J., (2019), Dynamics of Nearshore Plastic Pollution Part I: Literature and Data Review, Prepared for The Ocean Cleanup

Borrero, J. and **O'Neill**, S. (2018) Probabilistic Tsunami Inundation Assessment for the Far Eastern Bay of Plenty, Report in preparation for Bay of Plenty Regional Council. July 2019

Borrero, J. C., S. T., **Mead**, S. **O'Neill**, E. Atkin, and J. Davies-Campbell, 2019. *Lelepa Island, Vanuatu: An Assessment of the Coastal Oceanographic Environment*. Prepared for Downers, May 2019.

Mead, S. T., J. Davies-Campbell and S. **O'Neill**, 2019. *Review of Resource Consent Application for a Proposed Retaining Wall at 27 Beach Road, Paekakariki*. Prepared for Kapiti Coast District Council, April 2019.

Mead, S. T., J. Davies-Campbell and **O'Neill**, S., 2019. *Seahorse Beach Investments – 1 First Avenue, Tauranga – Coastal Engineering Design*. Prepared for Stratum Engineers Ltd, February 2019

Mead, S. T., J. Davies-Campbell and **O'Neill**, S., 2019. *East Coast Port Feasibility Study*. Prepared for Pentarch Forestry, January 2019.

### 2018

Greer, D., **O'Neill**, S., Borrero, J., 2018, Dynamics of Nearshore Plastic Pollution Part I: Literature and Data Review, Prepared for The Ocean Clean Up

Mead S. T., E. Atkin, and **S. O'Neill**, 2018. *Preliminary Coastal Processes Assessment for Malolo Island Resort*. Prepared for Freesoul Real Estate, February 2018.

Mead, S. T., 2018. *Tender document package for Coastal Protection* Mead S. T., E. Atkin, D. Greer and S. O'Neill, 2018. *Coastal Processes Assessment for Malolo Island Resort*. Prepared for Freesoul Real Estate, April 2018.

Mead, S. T., and S. O'Neill, 2018. *Coastal Assessment for Bau Landing Jetty Repairs*. Prepared for RPA Group (Fiji) Ltd, June 2018.

Mead, S. T., T. Haggitt, W. Mead and S. O'Neill, 2018. *Assessment of effects of Wairoa District Council's intertidal sewage discharge on benthic sediment characteristics and ecology – Wairoa Estuary*. Prepared for Wairoa District Council, June 2018.

Mead, S. T., and S. O'Neill, 2018. *Nawi Island Marina Entrance Channel Investigations – Sediment Depth Probing, High-Resolution Bathymetry Survey and Video Survey*. Prepared for Nawi Island Ltd, July 2018.

Greer, D., McIntosh, R., **O'Neill**, S., 2018, Long Term Hydrodynamic Modelling of Sulawesi, Prepared for Deakin University, March 2018

### 2017

Mead, S. T., and **S. O'Neill**, 2017. *Vomo Island Coastal Erosion Investigation*. Prepared for Vomo Island Fiji, December 2017.

Mead, S. T., and **S. O'Neill**, 2017. *Coastal Processes Assessment for 10 Scott Road Subdivision, Hobsonville*. Prepared for CPMC, December 2017.

- Mead S. T., E. Atkin, and **S. O'Neill**, 2017. Preliminary Coastal Processes Assessment for Malolo Island Resort. **O'Neill, S.** McIntosh, R., Borrero, J.C., and Mead, S.T., Hydrodynamic Modelling of Northlands CFHZ's. Prepared for Northland Regional Council, October 2017.
- McIntosh, R, Mead, S. T., D. Greer and **S. O'Neill**, 2017. Hydrological Assessment for Goodman Fielder's Proposed Poultry Processing WWT Plant in Coloisuva. Prepared for Goodman Fielder, September 2017.
- Atkin, E., Mead, S. T. and **S. O'Neill**, 2017. *RTK Bathymetry Survey of the Lower Wairoa River*. Prepared for BBO, September 2017.
- Atkin, E., Mead, S. T., D. Greer and **S. O'Neill**, 2017. *Denis Island (Seychelles) Coastal Management Options*. Prepared for Denis Private Island Ltd, August 2017.
- Mead, S. T., and **S. O'Neill**, 2017. Whakatane Offshore Dredging Disposal Investigation. Prepared for Harrison Greirson, May 2017.
- Mead, S. T., E Atkin, R. Macintosh, **S. O'Neill** and N. Ducharneau. 2017. SurfGen Physical Modelling Progress Summary: 8 April 2017. Report prepared for Surf Generation.
- Mead, S. T., and **S. O'Neill**, 2017. Whakatane Offshore Dredging Disposal Investigations. Prepared for Harrison and Grierson, April 2017.
- Mead, S. T., E. Atkin, R. Macintosh, **S. O'Neill** and N. Ducharneau, 2017. Surf Gen Modelling Progress.
- Mead, S. T., and **S. O'Neill**, 2017. Naisoso Island: Marina Reclamation Survey, Terminal Groyne Design and Stabilizing of a Hotel Vessel. Prepared for RelCorp, March 2017.
- 2016**
- Borrero, J. C., E. Atkin, D. Greer, **S. O'Neill** and Mead, S. T. Coastal Processes Study: North East Point, Mahé Island, Seychelles Mahé Island, Seychelles. Prepared for the UNDP, November 2016.
- Mead, S. T., and **S. O'Neill**, 2016. Aqualink Cable Burial: Cable Stability Assessment – Titahi Bay to Whanganui. Prepared for Vodafone NZ, October 2016.
- Mead, S. T., and **S. O'Neill**, 2016. Aqualink Cable Burial: Cable Stability Assessment – Wellington to Christchurch. Prepared for Vodafone NZ, October 2016.
- Mead, S. T., **S. O'Neill** and E. Atkin, 2016. Seabed Stability, Bedforms and Seabed Penetration off the New Zealand Coastline. Prepared for Vodafone NZ, September 2016.
- Mead, S. T., and **S. O'Neill**, 2016. Aqualink Cable Burial: Monitoring Summary and Updated Fishing Activity Assessment. Prepared for Vodafone NZ, September 2016.
- Mead, S. T., E. Atkin and **S. O'Neill**, 2016. Coastal Processes and Design Studies for the First Landing Marina Development. Prepared for Barstock Developments, September 2016.
- Mead, S. T., and **S. O'Neill**, 2016. Coastal Processes Assessment for Scott Point Subdivision, Hobsonville. Prepared for Chester Consultants, August 2016.
- Mead, S. T., and **S. O'Neill**, 2016. Review of Coastal Processes and Revetment Options at Raumatī Beach. Prepared for Kapiti Coast District Council, August 2016.
- Mead, S. T., and **S. O'Neill**, 2016. Wailoaloa Beach Remediation. Prepared for Wailoaloa Developments Ltd, August 2016.
- Atkin, E., Mead, S. T., J. C. Borrero, D. J. Phillips and **S. O'Neill**, 2016. Development of the Castlecliff Coastal Management Strategy. Prepared for Whanganui District Council, July 2016.
- Mead, S. T., and **S. O'Neill**, 2016. Coastal Processes Assessment for Island Bay. Prepared for Urban Solutions, July 2016.
- Atkin, E., Mead, S. T., and **S. O'Neill**, 2016. Denis Island Coastal Processes Assessment. Report for Denis Private Island Ltd, June 2016.
- Mead, S. T., and **S. O'Neill**, 2016. Review of Coastal Processes and Revetment Options at Raumatī Beach. Prepared for Kapiti Coast District Council, April 2016.
- Mead, S. T., and **S. O'Neill**, 2016. Coastal Hazard Assessment at Namuka Bay. Prepared for Lyndhurst Fiji Ltd, March 2016.

Greer D., Atkin, E., Mead, S. T., T. Haggitt and **S. O'Neill**, 2016. Hydrodynamic Modelling and Residence Times of the Waikato West Coast: Fieldwork and Data Collection. Report prepared for Waikato Regional Council, January 2016.

**2015**

Mead, S. T., and **S. O'Neill**, 2015. Review of Coastal Processes Assessments at Paekakariki Beach. Prepared for Kapiti Coast District Council, December 2015.

Mead, S. T., and **S. O'Neill**, 2015. Coastal Hazard Assessment for Port Underwood Farm Subdivision. Prepared for Underwood Farm Ltd, December 2015.