

Biographical Sketch for Daniel Buscombe

Professional Preparation

University of Plymouth	Nearshore Oceanography	Ph.D.	2004 - 2008
Lancaster University	Physical Geography	B.Sc.	2000 - 2003

Appointments and Teaching Experience

U.S Geological Survey	Research Geologist	2012 - Present
University of Plymouth	NERC Postdoctoral Research Fellow	2009 - 2012
UC Santa Cruz	Postdoctoral Research Fellow	2008 - 2009
University of Plymouth	Teaching & Research Assistant	2004 - 2008
Field Studies Council	Assistant Tutor	2003 - 2004

Selected Related Publications

- D. Buscombe**, P. Grams, & M. Kaplinski. *Characterizing riverbed sediment using high-frequency acoustics 2: Scattering signatures of Colorado River bed sediment in Marble and Grand Canyons*. *Journal of Geophysical Research* 119:doi:10.1002/2014JF003191, 2014.
- D. Buscombe**. *Transferable Wavelet Method for Grain Size-Distribution from Images of Sediment Surfaces and Thin Sections, and Other Natural Granular Patterns*. *Sedimentology* 60: 1709–1732, 2013.
- J. Lacy, D. Rubin, & **D. Buscombe**. *Currents, Drag and Sediment Transport Induced by a Tsunami*. *Journal of Geophysical Research* 117:C09028, 2012.
- M. Austin & **D. Buscombe**. *Morphological Change and Sediment Dynamics of the Beach Step on a Macrotidal Gravel Beach*. *Marine Geology* 249:167–183, 2008.
- D. Buscombe** & G. Masselink. *Concepts in gravel beach dynamics*. *Earth Science Reviews* 79:33–52, 2006.

Other Significant Publications

- D. Buscombe**, D. Rubin, J. Lacy, C. Storlazzi, G. Hatcher, H. Chezar, R. Wyland, & C. Sherwood. *Autonomous bed-sediment imaging-systems for revealing temporal variability of grain size*. *Limnology and Oceanography: Methods* 12:390–406, 2014
- J. Williams, **D. Buscombe**, G. Masselink, I. Turner, & C. Swinkels. *Barrier Dynamics Experiment (BARDEX): Aims, Design and Procedures*. *Coastal Engineering* 63:3–12, 2012.
- D. Buscombe** & D. Conley. *Effective Shear Stress of Graded Sediment*. *Water Resources Research* 48:W05506, 2012.
- D. Buscombe**, D. Rubin, & J. Warrick *Universal Approximation of Grain Size from Images of Non-Cohesive Sediment*. *Journal of Geophysical Research* 115:F02015, 2010.
- G. Masselink, **D. Buscombe**, M. Austin, T. O’Hare, & P. Russell *Sediment Trend Models Fail to Reproduce Small Scale Sediment Transport Patterns on an Intertidal Beach*. *Sedimentology* 55:667–687, 2008.

Synergistic Activities

Open Source Contributions: I'm leading several open-source community software development initiatives for processing data from sidescan sonar, multibeam sonar, photogrammetry, holographic imagery, sediment imagery, point clouds, and many more (<https://github.com/dbuscombe-usgs>), motivated by a passion for transparency and reproducibility in data analysis and research, using open-source tools.

Academic-Industry Partnership: I'm part of the steering committee of an informal group of multibeam sonar users (from industry, academia, and other agencies) in shallow water environments (<https://sites.google.com/site/mbesinriverssummitworkshop/>).

Science Communication: I have convened two sessions at Fall AGU Conferences: 1) in 2007, on Linking sediment supply, bed-sediment particle size, sediment transport and bed morphology in fluvial, marine, and Aeolian settings, and 2) in 2013: on Fluvial sediment budgets: can we do better?. I convened the Young Coastal Scientists and Engineers Conference, at Plymouth University in 2007. I also convened the Quaternary Research Associations 4th International Postgraduate Symposium, at Plymouth University in 2005.

Teaching & Mentoring: I'm involved in casual teaching at NAU, and I'm currently training and advising two PhD and three Masters students in my research program. In 2016, I conceived, organized and ran a 3 day-long Software Carpentry workshop for 30 of my colleagues at the U.S. Geological Survey, teaching computing skills for scientists.

Scientific Review: Frequent ad hoc reviewer for 12 journals, and 2 science research councils..

Selected Collaborators

Paul Grams, *U.S. Geological Survey*

David Rubin, *University of California Santa Cruz*

Daniel Conley, *University of Plymouth*

Alex Nimmo-Smith, *University of Plymouth*

Jessie Lacy, *U.S. Geological Survey*

Emlyn Davies, *SINTEF, Norway*

Martin Austin, *Bangor University*

Jon Warrick, *U.S. Geological Survey*

David Topping, *U.S. Geological Survey*

Joe Wheaton, *Utah State University*

Jack Puleo, *University of Delaware*

Sean Smith, *University of Maine*

Gerd Masselink, *University of Plymouth*

Brandon McElroy, *University of Wyoming*

Graduate Advisors

Gerd Masselink *University of Plymouth* (2004-2008)

Mark Davidson *University of Plymouth* (2004-2008)