

# Andrew Dale Ashton

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## Current Position

Woods Hole Oceanographic Institution, Woods Hole, Massachusetts 2005 – Present  
USGS Postdoctoral Scholar  
Geology and Geophysics Department  
Research focus: Coastal Processes and Sediment Transport

USGS Woods Hole Field Center, Woods Hole, Massachusetts  
Postdoctoral Scholar (through Woods Hole Oceanographic Institution fellowship)

## Education

Duke University; Durham, North Carolina 1999 - 2005  
Ph.D. – Division of Earth & Ocean Sciences,  
Nicholas School of the Environment & Earth Sciences  
Concentration in Nearshore Processes and Geomorphology  
Certificate in Nonlinear and Complex Systems

Cornell University; Ithaca, New York 1991 - 1995  
Bachelor of Science  
School of Civil and Environmental Engineering

- Concentration: Water Quality, Hydraulics, and Hydrology.
- 3.5 GPA; Class Rank 13/80.

## Refereed Publications

**Ashton A.**, Murray A. B., & Arnoult, O., 2001. Formation of coastline features by large-scale instabilities induced by high-angle waves. *Nature*, 414, pp. 296-300.

Valvo, L.M., Murray, A.B., and **Ashton, A.D.**, *in press*. How Does Underlying Geology Affect Coastline Change? An Initial Modeling Investigation. *Journal of Geophysical Research - Earth surface*, in press.

**Ashton, A.D.**, and A. B. Murray, *submitted*. High-angle-wave instability and emergent shoreline shapes, Part I: Modeling of sandwaves, flying spits, and capes, *Journal of Geophysical Research-Earth Surface*, in revision.

**Ashton, A.D.**, and A. B. Murray, *submitted*. High-angle-wave instability and emergent shoreline shapes Part II: Wave climate analysis and comparisons to nature, *Journal of Geophysical Research-Earth Surface*, in revision.

## **Andrew Dale Ashton**

### **Conference Proceedings Contributions**

- Ashton, A.D.**, and Murray, A.B., 2005. Delta simulations using a one-line model coupled with overwash. Coastal Dynamics '05, Barcelona, Spain.
- Ashton, A.D.**, Murray, A.B. and Ruessink, B.G., 2003. Initial tests of a possible explanation for alongshore sandwaves on the Dutch coast, 3rd IAHR Symposium on River, Coastal and Estuarine Morphodynamics. International Association of Hydraulic Researchers, Barcelona, Spain
- Ashton, A.**, List, J.H., Murray, A.B. and Farris, A.S., 2003. Links between erosional hotspots and alongshore sediment transport, Proceedings of the International Conference on Coastal Sediments 2003, Clearwater Beach, Florida.
- Murray, A.B. & **Ashton, A.**, 2004. Extending a 1-line modeling approach to explore emergent coastline behaviors, Proceedings of the 29th International Conference on Coastal Engineering, Lisbon, Portugal.
- Murray, A.B. & **Ashton, A.**, 2003. Sandy-coastline evolution as an example of pattern formation involving emergent structures and interactions, Proceedings of the International Conference on Coastal Sediments 2003, Clearwater Beach, Florida.
- Murray, A.B., **Ashton, A.**, & Arnoult, O., 2001. Large-scale morphodynamic consequences of an instability in alongshore transport. Proceedings of the International Association for Hydraulic Research Symposium on River, Coastal, and Estuarine Morphodynamics, Obhiro, Japan, Sept 10-14.
- Murray, A.B., **Ashton, A.**, & Arnoult, O., 2001. An instability in shoreline shape, and connections with eolian morphodynamics. Proceedings of the 2<sup>nd</sup> International Conference on Dune Formation and Migration, Nouachott, Mauritania, February, 2001.

### **Conference Presentations**

- Ashton, A.** Murray, B., 2005, & Giosan, L.. Wave-Dominated Delta Evolution: New Insights From One-Line Numerical Simulations. American Geophysical Union Fall Meeting (EOS Transactions 86(52), H51D-0400).
- Ashton, A.** Murray, B., 2004. Alongshore coastline instability: wave climate analysis and comparisons to nature. American Geophysical Union Fall Meeting (EOS Transactions 85(45), H41C-0317).
- Ashton, A.** & Murray, A.B, 2004. Self-organized behavior of modeled shoreline shapes. Dynamics Days 2004: 23<sup>rd</sup> Annual Conference on Nonlinear Dynamics and Complex Systems. Chapel Hill, NC. (contributed talk)
- Ashton, A.**, List, J.H., Murray, A.B., & Farris, A.S., 2002. Are There Connections Between Erosional Hot Spots and Alongshore Sediment Transport Along the North Carolina Outer Banks? American Geophysical Union Fall Meeting, Eos Trans. AGU, 83(47), Fall Meet. Suppl., Abstract OS52F-09.
- Ashton, A.**, Murray, B., 2001. Responses of simulated and natural shorelines to high-angle waves: Perturbation growth and long-range interactions. American Geophysical Union Fall Meeting (EOS Transactions 82, p. F623).
- Ashton, A.**, Murray, A.B., & McNinch, J., 2000. Modeling large scale coastal morphodynamics. American Geophysical Union Fall Meeting (EOS Trans. AGU 81(48), p. F681). Also presented at Dynamics Days 2001, Chapel Hill, NC.

## **Andrew Dale Ashton**

### **Teaching Experience**

#### EOS 123 – Introduction to Hydrology: Spring 2005, Duke University

- Instructor for upper-level undergraduate course
- Independently developed new curriculum, selected textbook, and developed lectures, weekly problem sets, exams, and group research projects

#### EOS 41-The Dynamic Earth: Summer 2003, Summer 2001, Duke University

- Full-credit, six-week semester course in introductory Physical Geology for majors and non-majors
- Developed and taught course, including lectures and tests.

#### Teaching assistant

- Courses: Introductory Physical Geology, Introduction to Coastal Processes, Geomorphology, Biogeochemistry
- Field trips: Mojave Desert, Death Valley, Hawaii, and many trips to eastern beaches along Virginia, North Carolina, South Carolina, and Georgia coasts.

### **Professional Experience**

#### David J. Newton Associates; Portland, Oregon

1997 – 1999

- Civil Engineer focusing on hydrology and hydrodynamics
- Design and assessment of gravel mining sites to reduce impact to riverine environment, flooding, property owners, and endangered species (salmon)
- Hydraulic and hydrologic design of water systems, including dams, culverts, storm drainage systems, water supply systems and pumps, and stormwater retention ponds.

#### Dewberry & Davis; Fairfax, VA

1996 - 1997

- Civil Engineer working on technical evaluation contract with Federal Emergency Management Agency (FEMA), for the National Flood Insurance Program (NFIP).
- Performed engineering review for map revisions, analyzing hydrologic and hydraulic computer modeling as well as compliance with NFIP regulations.