

Daniel J. Nowacki

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Employment

Research Oceanographer 3/2015–present

U.S. Geological Survey — Coastal & Marine Geology Program, Santa Cruz, CA

3/2015–7/2018 in Woods Hole, MA

3/2015–3/2017 as Mendenhall Postdoctoral Research Fellow

Measuring and numerical modeling of sediment-transport and coastal-change processes in estuarine (salt marshes, lagoons) and beach environments; assessment of coastal-change hazards; wave-vegetation interaction; collection, analysis, quality control, and publishing of diverse observational time-series data; execution of field operations in diverse and challenging environments; authoring of journal articles, reports, and presentations at scientific conferences

Graduate Research Assistant 12/2009–2/2015

University of Washington — School of Oceanography, Seattle, WA

Field-based sediment transport studies of the tidal Mekong and Amazon rivers; observational and numerical investigations of tidal-flat sediment transport on the U.S. West coast; authoring of journal articles

Graduate Research Assistant 6/2008–11/2009

University of Washington — Dept. of Civil & Environmental Engineering, Seattle, WA

Research on sediment dynamics of the tidal Columbia River plume; dynamics of turbulent sediment removal; shelf impacts of anthropogenic influence and coastal engineering

Hydrologist 7/2004–5/2008

U.S. Geological Survey — National Research Program, Reston, VA

7/2004–9/2006 as contractor; 10/2006–5/2008 as Federal employee

Surface-water and hyporheic-flow investigations in the Florida Everglades and sandy streams; maintenance of long-term Everglades water-quality and flow-velocity monitoring station; authoring of technical reports and co-authorship of journal articles

Education

Doctor of Philosophy 2015

University of Washington — School of Oceanography

Thesis title: Sediment dynamics in tidal systems spanning a range of fluvial influence

Adviser: Andrea Ogston

Master of Science in Engineering (Civil) 2010

University of Washington — Department of Civil & Environmental Engineering

Thesis title: Sediment removal from the Columbia River plume using a control volume formulation

Adviser: Alexander Horner-Devine

Bachelor of Science in Computer Engineering 2004

Syracuse University — College of Engineering & Computer Science

Summa cum laude; GPA 3.91/4.00 · Physics Minor

Skills, Training, &c.

- Hydrodynamic/wave/sediment transport model (SWAN, SWASH, Delft3D, ROMS, COAWST) configuration, execution, and analysis in parallel-computing environments

- Expert computational skills including time-series analysis, rapid interfacing with novel data sources, data QA/QC and archival in netCDF, shell scripting, Linux/UNIX system administration
- Software tools and languages including scientific Python stack, MATLAB, Perl, FORTRAN, GIS. GitHub repository: <https://github.com/dnowacki-usgs>
- Varied and extensive field-based scientific research experience on four continents
Ship/field time: 60+ days tidal Amazon River, Brazil; 25+ days Mekong River estuary, Vietnam; 20+ days Chincoteague Bay, MD/VA; 20+ days Grand Bay, AL/MS; 20+ days Jamaica Bay & Great South Bay, NY; 40+ days Waipaoa shelf, New Zealand; 7 days Sego Sandstone, Book Cliffs, UT; 20+ days Willapa tidal flats, WA; 14 days Washington/Oregon shelf; 50+ days Florida Everglades
- Instrumentation design and integration
- Small boat operation experience in support of scientific research; U.S. DOI MOCC certified
- U.S. Government B-3 aviation training; OSHA forklift operator training
- Written and conversational spoken Spanish

Teaching

Graduate Teaching Assistant OCEAN 410: Marine Geology & Geophysics OCEAN 201: Introduction to Oceanography Lab University of Washington — School of Oceanography	2012, 2013
Guest Lecturer Friday Harbor Labs Marine Sedimentary Processes Research Apprenticeship University of Washington — School of Oceanography	2012, 2013

Grants, Activities, Awards, and Scholarships

USGS Mendenhall Research Fellowship Two-year Federal postdoctoral appointment with the USGS Coastal & Marine Geology Program	2015
Pan-American Advanced Studies Institute Short course: “Toward a Sustained Operational River-to-Shelf Observation & Prediction System for the Amazon” Universidade Federal Fluminense, Niteroi, Brazil	2013
School of Oceanography Innovation Grant Development of an underwater imaging system	2013
National Defense Science & Engineering Graduate (NDSEG) fellowship Three-year tuition and salary award for study leading to a Ph.D	2010–2013
Engineers Without Borders USA, University of Washington chapter Active graduate-student member; served on two assessment and implementation trips to Andean Bolivia in 2009 and 2011	2008–2011
USGS/DOI STAR Award U.S. Geological Survey	2007
Institute of Electrical and Electronics Engineers (IEEE) Best Senior Design Project Implementation Award Syracuse University	2004

Peer-Reviewed Publications

- Fricke, A.T., Nittrouer, C.A., Ogston, A.S., **Nowacki, D.J.**, Asp N.E., Souza Filho, P.W.M., 2018, Morphology and dynamics of the intertidal floodplain along the Amazon tidal river, *Earth Surface Processes and Landforms*, doi:10.1002/esp.4545.
- Nowacki, D.J.**, Ganju, N.K., 2018, Storm impacts on hydrodynamics and suspended-sediment fluxes in a microtidal back-barrier estuary, *Marine Geology* 404, doi:10.1016/j.margeo.2018.06.016.
- Ogston, A.S., Allison, M.A., McLachlan, R.L., **Nowacki, D.J.**, Stephens, J.D., 2017, How tidal processes impact the transfer of sediment from source to sink: Mekong River collaborative studies, *Oceanography* 30, doi:10.5670/oceanog.2017.311.
- Fricke, A.T., Nittrouer, C.A., Ogston, A.S., **Nowacki, D.J.**, Asp N.E., Souza Filho, P.W.M., da Silva, M.S., 2017, River tributaries as sediment sinks: Processes operating where the Tapajós and Xingu rivers meet the Amazon tidal river, *Sedimentology*, doi:10.1111/sed.12372.
- Nowacki, D.J.**, Beudin, A., Ganju, N.K., 2017, Spectral wave dissipation by submerged aquatic vegetation in a back-barrier estuary, *Limnology & Oceanography*, doi:10.1002/lno.10456.
- Ganju, N.K., Suttles, S.E., Beudin, A., **Nowacki, D.J.**, Miselis, J.L., Andrews, B.D., 2016, Quantification of storm-induced bathymetric change in a back-barrier estuary, *Estuaries and Coasts*, doi:10.1007/s12237-016-0138-5.
- Nowacki, D.J.**, Ogston, A.S., Nittrouer, C.A., Fricke, A.T., Van, P.D.T., 2015, Sediment dynamics in the lower Mekong River: transition from tidal river to estuary, *Journal of Geophysical Research: Oceans*, doi:10.1002/2015JC010754.
- Nowacki, D.J.**, Ogston, A.S., 2013, Water and sediment transport of channel-flat systems in a mesotidal mudflat: Willapa Bay, Washington, *Continental Shelf Research*, doi:10.1016/j.csr.2012.07.019.
- Nowacki, D.J.**, Horner-Devine, A.R., Nash, J.D., Jay, D.A., 2012, Rapid sediment removal from the Columbia River Plume, *Continental Shelf Research* 35, doi:10.1016/j.csr.2011.11.013.
- Harvey, J.W., Noe, G.B., Larsen, L.G., **Nowacki, D.J.**, McPhillips, L.E., 2011, Field flume reveals aquatic vegetation's role in sediment and particulate phosphorus transport in a shallow aquatic ecosystem, *Geomorphology* 126, doi:10.1016/j.geomorph.2010.03.028.
- Harvey, J.W., Schaffranek, R.W., Noe, G.B., Larsen, L.G., **Nowacki, D.J.**, O'Connor, B.L., 2009, Hydroecological factors governing surface water flow on a low-gradient floodplain, *Water Resources Research* 45, doi:10.1029/2008wr007129.

Publications Under Review or in Preparation

- Nowacki, D.J.**, Ogston, A.S., Nittrouer, C.A., Fricke, A.T., Asp, N.E., Souza Filho, P.W.M., Seasonal, tidal, and geomorphic controls on sediment import to Amazon River tidal floodplains, in revision at *Earth Surface Processes and Landforms*.
- Nowacki, D.J.** et al., Varying timescales of salt-marsh vulnerability metrics, to be submitted to *Geophysical Research Letters*.
- Nowacki, D.J.** et al., Sediment fluxes in a massively eroding salt-marsh complex, to be submitted to *Estuaries and Coasts*.

Technical Reports & Data Releases

- Nowacki, D.J.**, Suttles, S.E., Ganju, N.K., Montgomery, E.T. and Martini, M.A., 2018, Oceanographic and water quality measurements collected in Grand Bay, Alabama/Mississippi, August 2016–January 2017: *U.S. Geological Survey data release* doi:10.5066/P9UG9JYQ.
- Suttles, S.E., Ganju, N.K., Brosnahan, S.M., Montgomery, E.T., Dickhudt, P.J., Beudin, A., **Nowacki, D.J.**, and Martini, M.A., 2017, Summary of oceanographic and water-quality measurements in Chincoteague Bay, Maryland and Virginia, 2014–15, *U.S. Geological Survey Open-File Report* 2017-1032.
- Schaffranek, R.W., Stewart, M.A., and **Nowacki, D.J.**, 2007, Surface-Water Exchange through Culverts along State Road 9336 within Everglades National Park, 2004-2005, *U.S. Geological*

Survey Data Series 358.

Presentations (As First Author Only)

- Nowacki, D.J.**, Ganju, N.K., Contrasting Sediment Dynamics in Two Degrading Salt-Marsh Complexes: Grand Bay, AL/MS and Jamaica Bay, NY, 2018 Ocean Sciences Meeting, 11–16 February 2018, Portland, OR.
- Nowacki, D.J.**, Ganju, N.K., Suttles, S.E., Hydrodynamics and sediment transport in a rapidly eroding salt-marsh complex, Coastal and Estuarine Research Federation 24th Biennial Conference, 5–9 November 2017, Providence, RI.
- Nowacki, D.J.**, Beudin, A., Ganju, N.K., Response of suspended-sediment fluxes to storms in a back-barrier estuary, Chincoteague Bay, MD/VA, USA, 2016 Ocean Sciences Meeting, 21–26 February 2016, New Orleans, LA.
- Nowacki, D.J.**, Ganju, N.K., A field and numerical study of wave attenuation by submerged vegetation in Chincoteague Bay, Coastal and Estuarine Research Federation 23rd Biennial Conference, 8–12 November 2015, Portland, OR.
- Nowacki, D.J.**, Ogston, A.S., Nittrouer, C.A., Fricke, A.T., Souza-Filho, P.W.M., Asp, N.E., Tidal-channel flow and sediment transport in environments influenced by the tidal Amazon River, Brazil, 2014 Ocean Sciences Meeting, 23–28 February 2014, Honolulu, HI.
- Nowacki, D.J.**, Ogston, A.S., Nittrouer, C.A., Fricke, A.T., Souza-Filho, P.W.M., Asp, N.E., Dynamics of sediment transport in large tropical tidal rivers via observations in the Mekong and Amazon, AGU Fall Meeting, 9–13 December 2013, San Francisco, CA.
- Nowacki, D.J.**, Ogston, A.S., Nittrouer, C.A., Souza-Filho, P.W.M., Silva, M.S., Silveira, O.F., Fricke, A.T., The Amazon tidal river as a missing link in the transport of water and sediment to the ocean, University of Washington Water Symposium, 18 April 2012, Seattle, WA.
- Nowacki, D.J.**, Ogston, A.S., Nittrouer, C.A., Souza-Filho, P.W.M., Silva, M.S., Silveira, O.F., Fricke, A.T., Water and sediment transport in the Amazon tidal river and its tributaries, Ocean Sciences Meeting, 20–24 February 2012, Salt Lake City, UT.
- Nowacki, D.J.**, Ogston, A.S., 2011, Multiple scales of controls on sediment transport in intertidal flats: tidal stage, storms, and seasons, AGU Chapman Conference on Source to Sink Systems Around the World and Through Time, 24–27 January 2011, Oxnard, CA.
- Nowacki, D.J.**, Ogston, A.S., 2010, Water-surface elevation controls on sediment-transport dynamics in channel-flat environments of intertidal flats, AGU Fall Meeting, 15–17 December 2010, San Francisco, CA.
- Nowacki, D.J.**, Ogston, A.S., Nittrouer, C.A., 2010, Water-surface elevation controls on sediment-transport dynamics in channel-flat environments of intertidal flats, AGU Ocean Sciences Meeting, 22–26 February 2010, Portland, OR.
- Nowacki, D.J.**, Horner-Devine, A.R., Nash, J.D., Jay, D.A., 2009, Turbulent Removal of Sediment from a Buoyant River Plume, Coastal and Estuarine Research Federation 20th Biennial Conference, 1–5 November 2009, Portland, OR.

Professional Memberships

American Geophysical Union

Professional References

Available upon request.