

# ALAN KASPRAK

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## **CURRENT POSITION**

### **Postdoctoral Research Geologist**

**November 2015 - present**

U.S. Geological Survey  
Mendenhall Research Fellowship Program

*and*

National Center for Earth Surface Dynamics  
University of Minnesota  
Synthesis Postdoctoral Program

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## **EDUCATIONAL BACKGROUND**

### **Doctor of Philosophy in Watershed Sciences**

**October 2015**

#### **Emphasis in Geomorphology and Earth Surface Processes**

Utah State University – Logan, Utah

Ph.D. Dissertation: *Linking Form and Process in Braided Rivers Using Physical and Numerical Models*

### **Master of Science in Earth Sciences**

**June 2010**

Dartmouth College – Hanover, New Hampshire

M.S. Thesis: *Stream Channel and Riparian Response to Land-Use in Northern New England*

### **Bachelor of Science in Geology and Geophysics**

**May 2008**

Boston College – Chestnut Hill, Massachusetts

B.S. Thesis: *Measuring Sedimentation Rates and Land-Use Change in a Dam-Influenced Lake Delta: Narraguagus River, Maine*

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## **SCHOLARLY CONTRIBUTIONS**

Also see [Google Scholar profile](#)

### **PEER-REVIEWED PUBLICATIONS**

**Kasprak A**, Caster J, Bangen S, Sankey J. 2017. Geomorphic Process from Topographic Form: Automating the Interpretation of Repeat Survey Data in River Valleys. *Earth Surface Processes and Landforms*. DOI: [10.1002/esp.4143](https://doi.org/10.1002/esp.4143).

**Kasprak A**, Hough-Snee N, Beechie T, Bouwes N, Brierley GJ, Camp R, Fryirs KA, Imaki H, Jensen ML, O'Brien G, Rosgen DL, Wheaton JM. 2016. The blurred line between form and process: a comparison of stream channel classification frameworks. *PLoS ONE*. DOI: [10.1371/journal.pone.0150293](https://doi.org/10.1371/journal.pone.0150293).

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## PEER-REVIEWED PUBLICATIONS – CONTINUED

Hough-Snee N, **Kasprak A**, Rossi RK, Bouwes N, Roper BB, Wheaton JM. 2015. Hydrogeomorphic and biotic drivers of instream wood differ across sub-basins of the Columbia River Basin, USA. *River Research and Applications*. DOI: [10.1002/rra.2968](https://doi.org/10.1002/rra.2968).

**Kasprak A**, Wheaton JM, Ashmore PE, Hensleigh JW, Peirce SA. 2015. The relationship between particle travel distance and channel morphology: results from physical models of braided rivers. *Journal of Geophysical Research: Earth Surface* 120: 55-74. DOI: [10.1002/2014JF003310](https://doi.org/10.1002/2014JF003310).

Hough-Snee N, **Kasprak A**, Roper BB, Meredith CS. 2014. Direct and indirect drivers of instream wood in the interior Pacific Northwest, USA: decoupling climate, vegetation, disturbance, and geomorphic setting. *Riparian Ecology and Conservation* 2: 14-34. DOI: [10.2478/remc-2014-0002](https://doi.org/10.2478/remc-2014-0002).

Wheaton JM, Brasington J, Darby SE, **Kasprak A**, Sear D, Vericat D. 2013. Morphodynamic signatures of braiding mechanisms as expressed through change in sediment storage in a gravel-bed river. *Journal of Geophysical Research: Earth Surface* 118: 1-21. DOI: [10.1002/jgrf.20060](https://doi.org/10.1002/jgrf.20060).

**Kasprak A**, Magilligan FJ, Nislow KH, Renshaw CE, Snyder NP, Dade WB. 2013. Differentiating the relative importance of land cover change and geomorphic processes on fine sediment sequestration in a logged watershed. *Geomorphology* 185: 67-77. DOI: [10.1016/j.geomorph.2012.12.005](https://doi.org/10.1016/j.geomorph.2012.12.005).

**Kasprak A**, Magilligan FJ, Nislow KH, Snyder NP. 2012. A lidar-derived evaluation of watershed-scale large woody debris sources and recruitment mechanisms: coastal Maine, USA. *River Research and Applications* 28: 1462-1476. DOI: [10.1002/rra.1532](https://doi.org/10.1002/rra.1532).

## PEER-REVIEWED PUBLICATIONS IN PREPARATION

**Kasprak A**, Hafen K, Brasington J, Wheaton JM. In Preparation. Coming to grips with model imperfection: morphodynamic models as exploratory tools for understanding braided river dynamics. *Journal of Geophysical Research: Earth Surface*. DOI: [10.6084/m9.figshare.1598208](https://doi.org/10.6084/m9.figshare.1598208).

**Kasprak A**, Hafen K, Wheaton JM. In Preparation. The sensitivity of braided river morphodynamics to variations in sediment source. *Geology*. DOI: [10.6084/m9.figshare.1598216](https://doi.org/10.6084/m9.figshare.1598216).

## SCIENTIFIC REPORTS

**Kasprak A**, Wheaton JM. 2012. Development of a rapid geomorphic assessment procedure for streams in the John Day River Watershed, Oregon. Prepared for EcoLogical Research, Providence, UT. 126 p.

## THESES AND DISSERTATIONS

**Kasprak A**. 2015. Linking form and process in braided rivers using physical and numerical models. Ph.D. Dissertation. Utah State University, Logan UT. <http://digitalcommons.usu.edu/etd/4513>.

**Kasprak A**. 2010. Stream channel and riparian response to land-use in northern New England watersheds. M.S. Thesis. Dartmouth College, Hanover NH.

**Kasprak A**. 2008. Measuring Sedimentation Rates and Land-Use Change in a Dam-Influenced Lake Delta: Narraguagus River, Maine. B.S. Thesis. Boston College, Chestnut Hill MA.

## ALAN KASPRAK

### MEETING ABSTRACTS – PRIMARY AUTHOR ONLY

**Kasprak A**, Buscombe D, Caster J, Grams PE, Sankey JB. 2016. The Individual and Additive Effects of Vegetation Encroachment and Hydrologic Alteration on Sediment Connectivity in Grand Canyon. *EOS, Transactions, American Geophysical Union*. San Francisco, CA – December 12-16, 2016.

**Kasprak A**, Brasington J, Hafen K, Wheaton JM. 2015. An efficient and imperfect model for gravel-bed braided river morphodynamics: numerical simulations as exploratory tools. *EOS, Transactions, American Geophysical Union*. San Francisco, CA - December 14-18, 2015.

**Kasprak A**, Hafen K, Wheaton JM. 2015. A simplified morphodynamic model for gravel-bed rivers. 10th Federal Interagency Sedimentation Conference. Reno, NV - April 19-23, 2015. *Awarded Best Student Technical Paper*.

**Kasprak A**, Wheaton JM, Ashmore P, Peirce S. 2013. The sensitivity of sediment path-lengths to channel morphology: results from physical models of braided rivers. Braided Rivers Workshop. Die, France - June 23-27, 2014.

**Kasprak A**, Wheaton JM, Bouwes N, Weber NP, Trahan NC, Jordan CE. 2012. Toward a rapid synthesis of field and desktop data for classifying streams in the Pacific Northwest: guiding the sampling and management of salmonid habitat. *EOS, Transactions, American Geophysical Union*. San Francisco, CA - December 3-7, 2012.

**Kasprak A**, Wheaton JM. 2011. Morphodynamic modeling of gravel-bed rivers: a step-length based approach. *EOS, Transactions, American Geophysical Union*. San Francisco, CA - December 5-9, 2011.

**Kasprak A**, Wheaton JM. 2011. Modeling gravel bed river morphodynamics using a step-length-based approach. Community Surface Dynamics Modeling System 2011 Meeting: Impact of Time and Process Scales. Boulder, CO - October 28-30, 2011.

**Kasprak A**, Wheaton JM. 2011. A new step-length-based morphodynamic model of gravel-bed river evolution. *Abstracts with Programs*. Geological Society of America. Minneapolis, MN - October 8-12, 2011.

**Kasprak A**, Magilligan FJ, Nislow KH, Snyder NP. 2010. A lidar-derived evaluation of watershed-scale large woody debris sources and recruitment mechanisms: coastal Maine, USA. *EOS, Transactions, American Geophysical Union*. San Francisco, CA - December 13- 17, 2010.

**Kasprak A**, Magilligan FJ, Nislow KH, Snyder NP. 2009. Evaluating the impacts of land-use change on stream morphology in coastal Maine. *EOS, Transactions, American Geophysical Union*. San Francisco, CA - December 14-18, 2009.

**Kasprak A**, Magilligan FJ, Nislow KH, Snyder NP. 2009. A rapid, lidar-based delineation of watershed-scale large woody debris sources. *Abstracts with Programs*. Geological Society of America. Portland, OR - December 18-21, 2009.

**Kasprak A**, Arcone SA, Dade WB, Finnegan DC, Magilligan FJ, Renshaw CE. 2008. Using ground penetrating radar to estimate sediment accumulation in a reservoir: Ball Mountain Dam, West River, Vermont. *EOS, Transactions, American Geophysical Union*. San Francisco, CA - December 15-19, 2008.

# ALAN KASPRAK

## EXTRAMURAL RESEARCH FUNDING

NASA/Northern Arizona University	
Space Grant Undergraduate Research Funding (2016)	
Co-authored with T.T. Sankey	Grant Recipient (\$2,200)
National Center for Earth Surface Dynamics	
Synthesis Postdoctoral Fellowship (2016 & 2017)	Fellowship Recipient (\$100,000)
United States Geological Survey	
Mendenhall Postdoctoral Research Fellowship (2015)	Fellowship Recipient (\$115,000)
Utah State University	
Doctoral Dissertation Completion Award (2015)	Grant Recipient (\$20,000)
National Science Foundation	
Research Grant (2012) – ‘Sensitivity of Braided River Morphodynamics to Sediment Supply’	
Co-authored with PI J.M. Wheaton	Grant Recipient (\$271,000)
Geological Society of America (2009)	
Graduate Student Research Grant	Grant Recipient (\$2,500)
Dartmouth College (2009)	
Graduate Student Research Grant	Grant Recipient (\$1,000)

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## TEACHING BACKGROUND

### INSTRUCTOR

<i>National Center for Earth Surface Dynamics</i>	
Summer Institute for Earth Surface Dynamics	2016 & 2017
<i>Intermountain Center for River Restoration and Rehabilitation</i>	
Geomorphic Change Detection: Restoration Monitoring	2011 & 2014
<i>Utah State University Watershed Sciences Graduate Induction Course</i>	
An Introduction to Stream and Landscape Classification	2013 & 2014

### GRADUATE STUDENT INSTRUCTOR

<i>Utah State University – Watershed Sciences Department</i>	
Watershed Sciences Graduate Induction Course	2012
<i>Intermountain Center for River Restoration and Rehabilitation</i>	
Geomorphology and Sediment Transport in Channel Design	2011
<i>Dartmouth College Department of Earth Sciences</i>	
Introduction to Earth Science	2008 & 2010
Off-Campus Program (Western U.S. Geology)	2009
Oceanography	2009
Earth’s Past, Present, and Future Climate	2009

# ALAN KASPRAK

## STUDENTS SUPERVISED OR MENTORED

*Northern Arizona University*

Nathaniel Bransky, B.S. in Environmental Science – 2016 to Present

*Utah State University*

Konrad Hafen, B.S. in Watershed Sciences – 2014

*Dartmouth College*

Rohan Chaudhary, A.B. in Environmental Earth Sciences, Biology – 2012

Brynne Weeks, A.B. in Engineering – 2012

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## INVITED LECTURES AND SEMINARS

*National Center for Earth Surface Dynamics*

Connecting Life and Landscape Using Ecohydraulic Models 2016

*USGS Grand Canyon Monitoring and Research Center*

Linking Sediment Transport and Channel Morphology in Braided Rivers 2015

*Utah State University, Fluvial Hydraulics and Ecohydraulics Seminar*

An Introduction to Two-Dimensional Ecohydraulic Modeling 2014

*Leeds University*

A Simplified Approach to Modeling Braided River Morphodynamics 2013

*Utah State University, EcoLunch Seminar*

Life, Landscape, and the Dynamic Nature of Physical Habitat 2012

*Dartmouth College Off-Campus Program*

Ephemeral Stream Morphology in Death Valley (Field Lecture and Exercise) 2009

Sediment Supply Alteration in Grand Canyon (Field Lecture and Exercise) 2009

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## SERVICE AND OUTREACH ACTIVITIES

### CONFERENCE SYMPOSIA CONVENED

Morphodynamics of fluvial, aeolian, hillslope, and coastal environments characterized using high-resolution topography and bathymetry. 2015. *With* Paul E. Grams and Joel B. Sankey, U.S. Geological Survey, and Devin M. Lea, University of Oregon. *EOS, Transactions, American Geophysical Union*. San Francisco, CA - December 14-18, 2015.

Using predictive models to inform river management and restoration. 2013. *With* Gregory Pasternack, UC Davis. *EOS, Transactions, American Geophysical Union*. San Francisco, CA - December 9-13, 2013.

### MEDIA COVERAGE

- Utah Public Radio (2016): [Classification Systems for Rivers More Complementary than Expected](#)
- Utah State Today and phys.org (2016): [USU Scholars Forge Unprecedented Common Ground in River Classification](#)
- Utah State Today (2013): [USU Scientists' Work Highlighted in American Geophysical Union Journal](#)

## ALAN KASPRAK

### OUTREACH

- [Grand Canyon Youth](#) (2016): Instructor on [Partners-in-Science](#) Grand Canyon river trip; led students ages 15-19 in structure-from-motion topographic surveys along Colorado River.
- Scientists in the Classroom: served as pen-pal mentor to middle school students introducing them to careers in Earth Science.

### AD-HOC REVIEWER

- *River Research and Applications*
- *Hydrological Processes*
- *Journal of Geophysical Research: Earth Surface*
- *Progress in Physical Geography*
- *Ecology*

### PANELIST/COMMITTEE MEMBER

- Faculty Search Committee (2013): Utah State University Department of Watershed Sciences
  - EarthCube Modeling Workshop for the Geosciences (2013): National Science Foundation, Boulder, Colorado.
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