

Jacob A. Morgan

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EXPERIENCE

- **University of Washington** Seattle, Washington
Postdoctoral Research Associate April 2018 - Present
- **Colorado State University** Fort Collins, Colorado
Graduate Research Assistant August 2013 - February 2018
- **Olsson Associates** Olathe, Kansas
Geotechnical Technician September 2011 - June 2013

EDUCATION

- **Colorado State University** Fort Collins, Colorado
PhD in Civil Engineering (Hydraulic Engineering, Stream Restoration & River Mechanics) 2018
- **University of Missouri–Kansas City** Kansas City, Missouri
MS in Civil Engineering (Environmental Water & River Mechanics) 2013
- **Tennessee Technological University** Cookeville, Tennessee
BS in Civil Engineering (Environmental & Water Resources Engineering) 2011

PUBLICATIONS

- **Peer-reviewed:**
 - **Morgan, J.A.**, D.J. Brogan, and P.A. Nelson, 2017, Application of Structure-from-Motion photogrammetry in laboratory flumes, *Geomorphology* **276**: 125-143, doi: 10.1016/j.geomorph.2016.10.021.
 - Nelson, P.A., A.K. Brew, and **J.A. Morgan**, 2015, Morphodynamic response of a variable-width channel to changes in sediment supply, *Water Resources Research* **51**(7): 5717-5734, doi: 10.1002/2014WR016806.
- **Conference proceedings:**
 - **Morgan, J.A.** and P.A. Nelson, 2016, Hydro- and morphodynamics of riffle-pool sequences in the middle Elwha River, Washington, USA, in Constantinescu, Garcia, and Hanes (eds.), *River Flow 2016*, Taylor & Francis Group, London: 1212-1217, doi: 10.1201/9781315644479-191.
 - Brew, A.K., **J.A. Morgan**, and P.A. Nelson, 2015, Bankfull width controls on riffle-pool morphology under conditions of increased sediment supply: Field observations during the Elwha River dam removal project, *SEDHYD 2015: 10th Federal Interagency Sedimentation Conference and 5th Federal Interagency Hydrologic Modeling Conference*, Reno, Nev., 19-23 Apr.
- **Theses:**
 - **Morgan, J.A.**, 2013, Bed degradation of the lower Missouri River, MS Thesis, University of Missouri–Kansas City, 172 p., url: <http://hdl.handle.net/10355/35492>.
 - **Morgan, J.A.**, 2018, The effects of sediment supply, width variations, and unsteady flow on riffle-pool dynamics, PhD Dissertation, Colorado State University, 189 p.
- **Abstracts:**
 - **Morgan, J.A.**, P.A. Nelson, and D.J. Brogan, 2017, Hydro-geomorphology of the middle Elwha River, Washington, following dam removal, presented at *2017 AGU Fall Meeting*, New Orleans, Louis., 11-15 Dec.
 - Nelson, P.A. and **J.A. Morgan**, 2017, Flow, sediment supply, and channel width controls on gravel bedform dynamics, poster presented at *2017 AGU Fall Meeting*, New Orleans, Louis., 11-15 Dec.
 - Brogan, D.J., P.A. Nelson, L.H. MacDonald, and **J.A. Morgan**, 2017, Geomorphic complexity of sequential fire and floods in mountain watersheds, presented at *2017 AGU Fall Meeting*, New Orleans, Louis., 11-15 Dec.

- **Morgan, J.A.** and P.A. Nelson, 2017, Two-dimensional modeling of variable-width gravel bed morphodynamics, poster presented at *CSDMS Annual Meeting: Modeling Coupled Earth and Human Systems - The Dynamic Duo*, University of Colorado, Boulder, Colo., 23-25 May.
- Brogan, D.J., P.A. Nelson, L.H. MacDonald, and **J.A. Morgan**, 2017, How disturbing: The complications of sequential fire and floods in mountain catchments, presented at *AGU Hydrology Days 2017*, Colorado State University, Fort Collins, Colo., 20-22 Mar.
- **Morgan, J.A.**, P.A. Nelson, and D.J. Brogan, 2017, Morphological changes in the middle Elwha River, Washington following dam removal, presented at *AGU Hydrology Days 2017*, University, Fort Collins, Colo., 20-22 Mar.
- Schoelkopf, A., **J.A. Morgan**, and P.A. Nelson, 2017, Bedload sheet characteristics under steady versus unsteady flow, presented at *AGU Hydrology Days 2017*, Fort Collins, Colo., 20-22 Mar.
- **Morgan, J.A.** and P.A. Nelson, 2016, Numerical and physical experiments on the effect of variations in channel width on gravel-bed river morphodynamics, poster presented at *2016 AGU Fall Meeting*, San Francisco, Calif., 12-16 Dec.
- **Morgan, J.A.** and P.A. Nelson, 2016, Numerical simulations on the effect of variations in channel width on the morphodynamics of gravel-bed rivers, presented at *2016 GSA Annual Meeting*, Denver, Colo., 25-28 Sept.
- **Morgan, J.A.** and P.A. Nelson, 2016, Morphodynamics of riffle-pool sequences in the middle Elwha River, Washington, presented at *AGU Hydrology Days 2016*, Colorado State University, Fort Collins, Colo., 21-23 Mar.
- **Morgan, J.A.** and P.A. Nelson, 2015, Numerical experiments on sediment pulse dynamics, presented at *2015 AGU Fall Meeting*, San Francisco, Calif., 14-18 Dec.
- **Morgan, J.A.** and P.A. Nelson, 2015, Geomorphic changes in riffle-pool sequences of the middle Elwha River, poster presented at *2015 Elwha River Science Symposium*, NatureBridge, Port Angeles, Wash., 18-20 Nov.
- Nelson, P.A. and **J.A. Morgan**, 2015, Numerical experiments on the effects of channel width, unsteady flow, and sediment supply on gravel-bed river morphodynamics, poster presented at *Gravel Bed Rivers 8*, Kyoto, Japan, 14-18 Sept.
- **Morgan, J.A.** and P.A. Nelson, 2015, Numerical experiments on the effects of channel width, unsteady flow, and sediment supply on gravel-bed river morphodynamics, presented at *AGU Hydrology Days 2015*, Colorado State University, Fort Collins, Colo., 23-25 Mar.
- Brew, A.K., **J.A. Morgan**, and P.A. Nelson, 2014, Analysis of variations in channel width and sediment supply on riffle-pool dynamics, before and after dam removal, presented at *AGU Hydrology Days 2014*, Colorado State University, Fort Collins, Colo., 24-26 Mar.

● **Manuscripts in review:**

- **Morgan, J.A.** and P.A. Nelson, One-dimensional modeling of sediment pulse dynamics, submitted to *Water Resources Research*.

● **Manuscripts in revision:**

- Nelson, P.A. and **J.A. Morgan**, Flow, sediment supply, and channel width controls on gravel bedform dynamics, submitted to *Geomorphology*.

● **Manuscripts in preparation:**

- **Morgan, J.A.** and P.A. Nelson, Physical experiments on gravel-bed, variable-width morphodynamics, to be submitted to *Journal of Geophysical Research: Earth Surface*.
- **Morgan, J.A.** and P.A. Nelson, Numerical modeling of variable-width, gravel-bed morphodynamics, to be submitted to *Journal of Geophysical Research: Earth Surface*.
- **Morgan, J.A.**, P.A. Nelson, and D.J. Brogan, Hydro-geomorphology of the middle Elwha River, Washington, USA, following dam removal, to be submitted to *Earth Surface Processes and Landforms*.
- Brogan, D.J., P.A. Nelson, L.H. MacDonald, and **J.A. Morgan**, Geomorphic complexity of sequential fire and floods in mountain catchments, to be submitted to *Geomorphology*.

TECHNICAL SKILLS

- **Programming:** Proficient with: Matlab, Fortran90, Python. Basic ability with: L^AT_EX, HTML/CSS, Visual Basic
- **Hydro-morphodynamic models:** iRIC (Nays2DH, FaSTMECH), Delft3D, HEC-RAS.
- **Topographic surveying:** RTK-GPS (Topcon GR-5/Tesla), Structure-from-Motion (Agisoft PhotoScan, VisualSFM), terrestrial lidar (Leica ScanStation HDS3600, Faro Focus3DS), total station, automatic level.
- **Laboratory instruments:** Massa mPulse sensors, Seatek Ultrasonic ranging system, Nortek Vectrino Profiler.
- **Miscellaneous software:** ArcGIS, QGIS, CloudCompare, gnuplot, Minitab.

CERTIFICATIONS

- **National Council of Examiners for Engineering and Surveying (NCEES)**
Engineering Intern, Licence 29181, Tennessee State Board of Architectural and Engineering Examiners May 2011

AFFILIATIONS

- **American Geophysical Union:** Earth and Planetary Surface Processes Focus Group
- **American Society of Civil Engineers:** Environmental and Water Resources Institute
- **Geological Society of America:** Quaternary Geology and Geomorphology Division

SERVICE

- Article reviewer for *Geomorphology*

REFERENCES

Available upon request.