

Weston Buckley Anderson

The International Research Institute for Climate and Society
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ACADEMIC APPOINTMENTS

Columbia University, New York, NY

Sep 2018 – Sep 2020

Postdoctoral Research Fellow,

The International Research Institute for Climate and Society

EDUCATION

Columbia University, New York, NY

PhD, Earth and Environmental Science

Jul 2014 - Jul 2018

- NSF Graduate Research Fellowship Program
- Columbia University Dean's Fellow

Johns Hopkins University, Baltimore, MD

B.S./M.S.E. Environmental Engineering, Systems Analysis

May 2012

- General Honors, Departmental Honors, Wolman Award for Interdisciplinary Study
- Dean's Master's Fellowship

PROFESSIONAL EXPERIENCE

Sr. Research Assistant

2013 - 2014

International Food Policy Research Institute

Research: Water resource management and food security analyses

Advisors: Dr Liangzhi You and Dr. Ephraim Nkonya

Risk Analyst

2012 - 2013

Risk Management Solutions

Description: Model-based natural catastrophe risk assessment

Research Assistant

2011 - 2012

The Hydroclimate Research Group, Johns Hopkins University

Research: Characterized the 2010-11 East Africa drought using remote sensing products

Advisor: Dr Ben Zaitchik

PUBLICATIONS

* denotes joint first co-authorship

Journal publications submitted or in preparation

Jong, B.T, Ting, M., Seager, R., and Anderson, W.B. ENSO teleconnections and impacts on US summertime temperature during multi-year La Niña life-cycle (in review)

Anderson, W.B.*, and Lesk, C*: Trends in concurrent heat and drought over global croplands (submitted)

Peer reviewed journal publications:

Anderson, W.B.^{*}, and Bren d'Amour^{*}: International trade and the stability of food supplies in the Global South, (accepted, Environmental Research Letters)

Anderson, W.B., Han, E., Baethgen, W., Goddard, L., Muñoz, Á.G., and Robertson, A.: The Madden-Julian Oscillation affects maize yields throughout the tropics and subtropics (accepted, Geophysical Research Letters)

Cai, W, ...Anderson, W.B....et al. (2020): Impact of El Niño-Southern Oscillation on South America in a warming climate (accepted, Nature Reviews Earth & Environment)

Anderson, W.B., Muñoz, Á.G., Goddard, L., Baethgen, W., and Chourio, X. (2020): Madden-Julian Oscillation (MJO) teleconnections to crop growing seasons. *Climate Dynamics*. 1-17, <https://doi.org/10.1007/s00382-019-05109-0>

Anderson, W.B., Seager, R., Baethgen, W., Cane, M., and You, L. (2019): Synchronous crop failures and climate-forced yield variability. *Science Advances*, 5 (7), eaaw1976.

Anderson, W.B., Seager, R., Baethgen, W., and Cane, M (2018) : Trans-Pacific ENSO teleconnections pose a correlated risk to agriculture. *Agriculture and Forest Meteorology*, 262: 298-309, doi:10.1016/j.agrformet.2018.07.023

Xie, H, Perez, N, Anderson W.B., Ringler, C. and You, L. (2018): Impact of irrigation development strategies in Sub-Saharan African dryland on food security and import dependency in the region. *Water International*

Anderson, W.B., Seager, R., Baethgen, W., and Cane, M, (2017): Crop production variability in North and South America forced by life-cycles of the El Niño Southern Oscillation. *Agriculture and Forest Meteorology*, 239, 151-165

Anderson, W.B., Seager, R., Baethgen, W., and Cane, M, (2016): Life-cycles of agriculturally relevant ENSO teleconnections in North and South America. *Int. J. Climatol*, doi:10.1002/joc.4916

Anderson, W.B., You, L., Wood, S., Wood-Sichra, U., Wu, W (2015): An analysis of methodological and spatial differences in global cropping systems models and maps. *Glob. Ecol. and Biogeog.* doi: 10.1111/geb.12243

Li, Z., Liu, X., Anderson, W.B., Yang, P., Wu, W., Tang, H. and You, L. (2015): Chinese Rice Production Area Adaptations to Climate Changes, 1949–2010. *Environmental Science & Technology*, doi: 10.1021/es505624x

Anderson, W.B., Guikema S., Zaitchik, B. and Pan, W. (2014): Methods for estimating population density in data-limited areas: evaluating regression and tree-based models in Peru. *PLoS ONE* 9(7): e100037. doi:10.1371/journal.pone.0100037

Nkonya, E. and Anderson, W.B. (2014): Exploiting provisions of land economic productivity without degrading its natural capital, *J. Arid Environ.*, doi:10.1016/j.jaridenv.2014.05.012.

Anderson, W.B., Zaitchik, B.F., Hain, C.R., Anderson, M.C., Yilmaz, M.T., Mecikalski, J., and Schultz, L. (2012) Towards an integrated soil moisture drought monitor for East Africa, *Hydrol. Earth Syst. Sci.*, 16, 2893-2913, doi:10.5194/hess-16-2893-2012.

Book Chapters:

Walker, T., Ward, C., Torquebiau, R., Xie, H., Anderson, W.B., Perez, N., Ringler, C., You, L., Cenacchi, N., Hash, T. and Rattunde, F., (2016) Agriculture: More Water and Better Farming for

Improved Food Security. In “Confronting Drought in Africa's Drylands: Opportunities for Enhancing Resilience”, pp.115-136. doi:10.1596/978-1-4648-0817-3_ch7

Nkonya, E., Anderson, W.B., Kato, E., Koo, J., Mirzabaev, A., von Braun, J., & Meyer, S. (2016). Global cost of land degradation. In *Economics of Land Degradation and Improvement—A Global Assessment for Sustainable Development* (pp. 117-165). Springer International Publishing.

Nkonya, E., Srinivasan, R., Anderson, W.B., and Kato, E. (2016). Economics of land degradation and improvement in Bhutan. In *Economics of Land Degradation and Improvement—A Global Assessment for Sustainable Development* (pp. 327-383). Springer International Publishing.

Anderson, W.B., and Johnson, T. (2016) Evaluating Global Land Degradation Using Ground-Based Measurements and Remote Sensing. In *Economics of Land Degradation and Improvement—A Global Assessment for Sustainable Development* (pp. 327-383). Springer International Publishing.

Other Publications:

Nielsen, T., Schünemann, F., McNulty, E., Zeller, M., Nkonya, E., Kato, E., Meyer, S., Anderson, W.B., Zhu, T., Queface, A., and Mapemba, L., (2015): The Food-Energy-Water Security Nexus: Definitions, Policies, and Methods in an Application to Malawi and Mozambique. IFPRI Discussion Paper 1480. doi: 10.2139/ssrn.2740663

Nkonya, E., Srinivasan, R., Anderson, W.B., and Kato, E. (2014). Assessing the economic benefits of sustainable land management practices in Bhutan. IFPRI Discussion Paper 01361. doi:10.2139/ssrn.2483995

Xie, H., You, L., Anderson, W.B., Ringler, C., Cenacchi, N., Perez, N. (2013) Agricultural water management for drylands in Africa south of the Sahara. International Food Policy Research Institute. Methodology report for the World Bank

Posters and Presentations:

Anderson, W.B., Seager, R., Baethgen, W., Cane, M., and You, L. Climate-forced crop yield variability and synchronous crop failures. AGU Fall Meeting. Washington DC, Dec 10-18, 2018 (oral pres.)

Anderson, W.B., Seager, R., Baethgen, W., and Cane, M.: How relevant is ENSO to global crop production? IV International Conference on El Niño Southern Oscillation: ENSO in a warmer Climate. October 18, Guayaquil, Ecuador (oral pres.)

Anderson, W.B., Seager, R., Baethgen, W., and Cane, M.: Trans-Pacific ENSO teleconnections pose a correlated risk to global agriculture. The American Meteorological Society annual meeting. Jan 7-11, 2018. Austin, TX (oral pres.)

Anderson, W.B., Seager, R., Baethgen, W., and Cane, M.: The El Niño Southern Oscillation and sustainable intensification. *The Global Land Program Open Science Meeting*. Oct. 24-27, 2016. Beijing, CHN (oral pres.) *[Awarded outstanding presentation]

Anderson, W.B., Seager, R., Baethgen, W., and Cane, M.: Life cycles of agriculturally-relevant ENSO teleconnections in North and South America. *American Geophysical Union Fall Meeting*. Dec. 14-18, 2015. San Francisco, CA (oral pres.)

Anderson, W.B. “An analysis of methodological and spatial differences in global cropping systems models and maps”. Chinese Academy of Agricultural Sciences, May 23rd, 2014. Beijing, China. (oral pres.)

Anderson, W.B. “Assessing the benefits of sustainable land management practices in Bhutan:

Land cover changes and hydrological analyses". IFPRI / World Bank hosted Workshop, March 18, 2014. Thimphu, Bhutan. (oral pres.)

Anderson, W.B., You, L., Wood, S., Wood-Sichra, U., Wu, W. "A Comparative Analysis of Global Cropping Systems Models and Maps," *American Geophysical Union Fall Meeting*. Dec. 9-13, 2013. San Francisco, CA (poster pres.)

Anderson, W.B., C. Hain, B. Zaitchik, M. Anderson, C. Alo and M. Yilmaz. "Towards an Integrated Soil Moisture Drought Monitor for East Africa," *American Geophysical Union Fall Meeting*. Dec. 5-9, 2011. San Francisco, CA (poster pres.)

PROFESSIONAL SERVICE

Reviewer: Hydrology and Earth System Sciences, Earth System Dynamics, Journal of Applied Meteorology and Climatology, International Journal of Climatology, PLoS ONE, International Journal of Biometeorology, Environmental Monitoring and Assessment

Graduate Student Committee 2016 -2018
Department of Earth and Environmental Sciences

Graduate Student Advisory Council Representative, 2015 - 2016
Columbia Graduate School of Arts and Sciences

Workshop Organizer, Thimphu, Bhutan 2014
"Assessing the economic benefits of sustainable land management practices in Bhutan"
50+ participants, including the Honorable Minister of Agriculture and Forests

Panel Organizer, Hoboken, NJ 2013
"Climate change, extreme weather and RMS model methodology"
Broadcast live to over 100 employees participating in the session across the US and Europe

GRANTS AND AWARDS

Earth Frontiers, Earth Institute (PI; \$100,000) 2020-2022

Earth Institute Postdoctoral Research Fellowship (\$140,000) 2018 - 2020

NSF Graduate Research Fellowship (\$98,000) 2014 - 2018

Columbia Graduate School of Arts and Sciences Dean's Fellow (\$168,000) 2014

JHU Whiting School of Engineering Dean's Master's Fellowship (\$23,000) 2012

JHU Wolman Award for Interdisciplinary Study 2011

Outstanding Student Presentation, GLP Open Science Meeting 2016

TEACHING EXPERIENCE

Teaching Assistant - Columbia University
Regional Climate Dynamics: Dr. Andrew Robertson and Dr. Pietro Ceccato 2016, 2018
Dynamics of Climate: Dr. Ron Miller 2017
Dynamics of Climate Variability and Change: Dr. Alessandra Giannini and Dr. Lisa Goddard 2017

PROGRAMMING AND MODELING LANGUAGES

• Python • MATLAB • R • ArcGIS • SQL

MEDIA COVERAGE

Bhutan Broadcasting Service coverage of our workshop on sustainable land management:
<https://www.dropbox.com/s/8andflllyhn0y463/Land%20Management.mov>

OUTREACH

<i>Volunteer</i> , New York Academy of Sciences after school program After school science curriculum focused on earth science and natural disasters <i>Article published by students in the class:</i> http://indykids.org/main/2015/12/stronger-storms-in-a-warming-world/	2015-16
<i>Volunteer</i> , BioBus. After school science programming for populations underrepresented in the sciences	2014-15
<i>Volunteer scientist</i> , Big Green Theater Project, An annual eco-play writing program for elementary school children	2014