

JUSTIN ANDREW JOHNSON

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Senior Scientist
Institute on the Environment
University of Minnesota
St. Paul, MN 55108

Research Interests: Environmental and natural resource economics, development economics

EDUCATION

Ph.D.	Department of Applied Economics, University of Minnesota	2009-2014
B.A.	St. Olaf College	2001-2005

POSITIONS

Senior Scientist	The Natural Capital Project, Institute on the Environment, University of Minnesota	2016-present
Research Scientist	The Natural Capital Project, Institute on the Environment, University of Minnesota	2015-2016
Post-doctoral Research Fellow	The Natural Capital Project, Institute on the Environment, University of Minnesota	2014-2015
Visiting lecturer	St. Olaf College	2012-2013

PEER-REVIEWED PUBLICATIONS

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- Johnson, J. A.**, Runge, C. F., Senauer, B., & Polasky, S. (2016). Global Food Demand and Carbon-Preserving Cropland Expansion under Varying Levels of Intensification. *Land Economics*, 92(4), 579-592.
- Carlson, K., Gerber, J., Mueller, N., Herrero, M., MacDonald, G., Brauman, K., Havlik, P., O'Connell, C., **Johnson, J.A.**, Saatchi, S., West, P. (2016, in press). Greenhouse gas emissions intensity of global croplands. *Nature Climate Change*.
- Vogl, A. L., Dennedy-Frank, P. J., Wolny, S., **Johnson, J. A.**, Hamel, P., Narain, U., & Vaidya, A. (2016). Managing forest ecosystem services for hydropower production. *Environmental Science & Policy*, 61, 221-229.
- Polasky, S., Bryant, B., Hawthorne, P., **Johnson, J. A.**, Keeler, B., & Pennington, D. (2015). Inclusive wealth as a metric of sustainable development. *Annual Review of Environment and Resources*, 40, 445-466.
- Chaplin-Kramer, R., Sharp, R.P., Mandle, L., Sim, S., **Johnson, J. A.**, Butnar, I., i Canals, L.M., Eichelberger, B.A., Ramler, I., Mueller, C. and McLachlan, N. (2015). Spatial patterns of agricultural expansion determine impacts on biodiversity and carbon storage. *Proceedings of the National Academy of Sciences*, 112(24), 7402-7407.
- Johnson, J. A.**, Runge, C. F., Senauer, B., Foley, J., & Polasky, S. (2014). Global agriculture and carbon trade-offs. *Proceedings of the National Academy of Sciences*, 111(34), 12342-12347.
- Runge, C. F., & **Johnson, J. A.** (2014). *Are we in this together? Risk bearing and collective action*. *Journal of Natural Resources Policy Research*, 6(1), 71-76.
- Runge, C. F., Sheehan, J. J., Senauer, B., Foley, J., Gerber, J., **Johnson, J. A.**, ... & Runge, C. P. (2012). Assessing the comparative productivity advantage of bioenergy feedstocks at different latitudes. *Environmental Research Letters*, 7(4), 045906.
- Runge, C. F., **Johnson, J. A.**, & Runge, C. P. (2011). Better milk than cola: soft drink taxes and substitution effects. *Choices*, 26(3), 3.

TEACHING EXPERIENCE

Instructor	<i>Institute on the Environment, University of Minnesota</i> . Created and taught a short-course, "Python Programming and Big-Data for Sustainability Science." In process of proposing a semester-long version for the next academic year.	2016
Guest lecturer	<i>Applied Economics, University of Minnesota</i> . Lectured in several classes for professors C.F. Runge and S. Polasky, including for Ph.D. level "Welfare Economics" and master's level "Conservation Economics."	2015-present
Visiting lecturer	<i>St. Olaf College</i> . Successfully proposed and taught a new course, "Economics of Climate Change." Developed unique curriculum, including online materials and	2012-2013

participatory “climate negotiations.” Taught “Principles of Economics.” See justinandrewjohnson.com/teaching for details and student evaluations.

Teaching assistant *Applied Economics, University of Minnesota.* Developed class material and lectured weekly for “Managerial Economics” and “Principles of Microeconomics.” 2012-2013

RESEARCH FUNDING AND GRANT SUBMISSIONS

- “Environmental Health and Human Health of Peri-Urban Systems.” Co-PI on grant to Wellcome Trust. Results pending.
- “Strength and Attribution of Edge Effects in Forest Carbon Storage Detected Through Integration of Remote-Sensing and Social Data Synthesis.” Results pending. Currently in finalist-round of submissions.
- “Spatial concentration of global crop production and risks to global food security.” Co-PI on submission to the National Science Foundation. In resubmission process.
- “Assessing the Business Case for Supporting Commodity Standards,” (2015). Co-PI on successful \$50,000 research support grant.
- “Efficiency of U.S. Land-Use Patterns in Providing Ecosystem Services,” (2015). Co-PI on USDA NIFA grant. Initial submission rejected with requested revisions. Currently revising for the next funding cycle.
- “Targeting agricultural innovation and ecosystem service management in the Northern Volta,” (2014). Co-lead of the “Future Scenario Analysis” work package in the proposal. \$1.9 million USD.
- “Incorporating ecosystem services into the sustainable development goals,” (2014). \$80,000 USD funding from Science for Nature and People (SNAP).

WORKING PAPERS AND PAPERS IN PREPARATION

- Johnson, J.A., Wood, S., Jones, S., ... and DeClerck, F. (2016, in prep). Mapping Ecosystem Services to Human Well-being: decision support tools to assess ecosystem and agriculture tradeoffs in data-scarce locations.
- Johnson, J. A., (2016, in prep). *Food for Nature Payments: Global cost-efficiency optimization of payments for ecosystem services.*
- Johnson, J. A., (2016, in prep). *Spatial interactions on rival public goods: agent-based, microeconomic simulation of fuelwood gathering in Tanzania.*
- Johnson, J. A., Derric Pennington and Bill Smith, (2016, in prep). *Global estimates of agricultural profitability and conservation opportunity cost.*
- Wood, S., Jones, S., Johnson, J.A., .. and DeClerck, F. (2016, submitted). Mapping and operationalizing the contribution of ecosystem service to the Sustainable Development Goals.
- Smith, B., Pennington, D. and Johnson, J. A. (2016, in prep). *Assessing BONSUCRO Commodity Standards for Sugarcane in Brazil.*
- Runge, C.F., Polasky, S., Coggins, J., and Justin, J. A. (2016, in review). *Retrospect and Prospect: rational behavior with variable time preference.*
- Sonter, L., Johnson, J. A., Nicholson, C., Richardson, L., Watson, K., and Ricketts, T. (2016, in prep). Multi-site interactions: understanding and managing offsite impacts of land use change on the supply and use of ecosystem services.

SELECTED REPORTS AND PROFESSIONAL PUBLICATIONS

- Jones, S., Wood, S., Johnson, J. A. and Fabrice DeClerck, (2015). Making Ecosystems Count in the Sustainable Development Goals. *Biodiversity, CGIAR, Rome.*
- Johnson, J. A. Resilience profiles for GRP target regions, (2015). *Conservation International working paper, submitted to Rockefeller Foundation.*
- Johnson, J. A., Sood, A. and Giordano, M. (2012). Modeling Food Demand with Changing Income Elasticity and Trade Barriers. *International Water Management Institute (IWMI), Sri Lanka. Staff paper, used in updates to WATERSIM model.*
- Johnson, J. A., (2011). Estimating the Impact of Climate Change in Borneo. *World Wildlife Fund, U.S. and Indonesia, staff paper. Washington, D.C.*
- Runge, C. F. and Johnson, J. A., (2010). Rivers of Gold: Where Does Corn Flow and Does it Make Sense. Conference paper, presented at *Corn Belts: Iowa and International Agriculture, Grinnell College.*

SELECTED CONFERENCE & SEMINAR PRESENTATIONS

- Johnson, J. A., (2016). Mapping Ecosystem Services to Human Well-being: A new tool that works in data-sparse environments. *Ecosystem Services Partnership Annual Conference.*
- Johnson, J. A., (2015). Incorporating Ecosystem Services into Regional Economic Models. *Invited presentation for CGIAR working group in Rome.*

- Johnson, J. A. and Runge, C. F. (2014). Geospatial Optimization of Global Food and Carbon Tradeoffs – Implications for International Relations. *Invited presentation at The Woodrow Wilson International Center for Scholars.*
- Johnson, J. A. and Runge, C. F. (2014). Geospatial Optimization of Global Food and Carbon Tradeoffs – Policy Implications. *Invited presentation at University of Minnesota Law School faculty seminar.*
- Johnson, J. A. (2014). Global Food and Carbon Tradeoffs. *Invited presentation at St. Olaf College.*
- Johnson, J. A. (2013). Estimating the Ecosystem Service Value of Non-Timber Forest Products in Jambi, Indonesia. *Presentation at World Wildlife Fund, Washington, D.C.*
- Johnson, J. A. (2013). Solving Spatial Dependence and Identifying Ecosystem Service Beneficiaries: Introducing the Non-Timber Forest Product Ecosystem Service Model. *Webinar presentation for the Natural Capital Project and partners. Stanford, Palo Alto.*
- Johnson, J. A. (2013). Geographic Optimization and InVEST: Understanding Global Tradeoffs between Crop Cultivation and Ecosystem Services. *Presentation at Natural Capital Project Annual Meeting. Stanford, Palo Alto.*
- Johnson, J. A. and Rogers, M. (2013). Hedonic Valuation of Ecosystem Service Values using Tanzanian Household Survey Data. *Poster presentation at InVEST Annual Users' Meeting. Stanford, Palo Alto.*
- Johnson, J. A. (2012). How Changing Food Consumption Patterns Might Affect Global Water Demand: Estimation and Incorporation of Non-Parametric Engle Curves into the WATERSIM Modeling Framework. *Seminar presentation at the International Water Management Institute (IWMI), Sri Lanka.*
- Johnson, J. A. (2012). Using InVEST to Calibrate Dynamic General Equilibrium Models. *Presentation at Natural Capital Project Annual Meeting. Stanford, Palo Alto.*
- Johnson, J. A. (2005). Econometric Analysis of U.S. Soldier and Iraqi Civilian Casualties. *Awarded second place in the Minnesota Economics Association senior thesis competition, 2005.*

RESEARCH EXPERIENCE

Research Assistant	Prof. Stephen Polasky, University of Minnesota	2013-2014
Research Intern	International Water Management, Sri Lanka	2012
Research Intern	World Wildlife Fund, Washington D.C.	2011
Research Assistant	Prof. C. Ford Runge, University of Minnesota	2010-2012
Fulbright Scholar	Tsinghua University, Beijing	2005-2006

HONORS AND AWARDS

- University of Minnesota Graduate School Fellowship. Three years full funding plus stipend.
- University of Minnesota Department of Applied Economics. Two years full funding plus stipend.
- Fulbright Scholar at Tsinghua University, Beijing
- Center for International Food and Agricultural Policy (CIFAP) Travel Grant to Sri Lanka
- St. Olaf Regents Scholar

NON-ACADEMIC PROFESSIONAL EXPERIENCE

Idealspeech Web Design, LLC	Co-owner, founder, lead programmer. See idealspeech.org for details.	2006-present
Minnesota AIDS Project	Web Communications Coordinator	2006-2009

BOARD SERVICE AND VOLUNTEER WORK

Natural Capital Project	Many volunteer roles, including software designer	2010-present
Applied Economics Graduate Students Club	Technology Coordinator	2011-2012
M Flats Condominium Association	Owners Board	2010-2012
Children's Art Initiative	Board of Advisers	2006-2007
Young Non-Profit Professional Network	Board of Directors	2006-2009