

PAUL C. WEST

University of Minnesota
Institute on the Environment
Global Landscapes Initiative
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Professional preparation

Ph.D. Limnology and Marine Science, University of Wisconsin-Madison, 2010
M.S. Landscape Architecture—Restoration Ecology, University of Wisconsin-Madison, 1996
B.S. Soil Science—Natural Resources, University of Wisconsin-Madison, 1994
B.S. Landscape Architecture—Natural Resources, University of Wisconsin-Madison, 1994
Certificate of Environmental Studies, University of Wisconsin-Madison, 1994
Graduated with Distinction

Professional experience

Co-Director & Lead Scientist, University of Minnesota (April 2014 – present)

- Co-direct the Global Landscapes Initiative within the Institute on the Environment
- Lead research direction for the initiative, which spans several disciplines related to global food security and the environment: increasing yields, crop management, climate change, water availability, water quality, diet, and biodiversity.
- Lead external collaborations with leading companies, organizations, foundations, media, museums, and universities.
- Mentor and supervise staff, postdoctoral fellows, visiting scholars, and students.
- Fundraising through grants and private donors to support the team.
- Named a “Highly Cited Researcher” by Web of Science in 2019, which it estimates “world’s most influential researchers of the past decade.” Only 169 were selected for the Ecology/Environment discipline.

Chief Collaboration Officer, University of Minnesota (January 2011 – March 2014)

- Developed and managed agricultural and environmental sustainability projects with leaders in industry, conservation groups, foundations, museums, media, and academia.
- Led management- and policy-relevant research to develop solutions for increasing food production while protecting our climate, water availability, water quality, and biodiversity.
- Mentored staff, postdoctoral fellows, and students.

Senior Scientist, The Nature Conservancy (September 2010 – January 2011)

- Led strategic planning for two landscape projects in Wisconsin, developing strategies and measurable outcomes for conserving terrestrial and freshwater biodiversity within areas used for forestry, farming, and residential development.

Research Assistant, University of Wisconsin-Madison (June – August 2010)

- Developed new methods for quantifying the tradeoffs among crop yields, water availability, excess nitrogen, and carbon storage.
- Data analysis and computer modeling with large global data sets.

Technical Advisor – River Basin Management, Global Freshwater Team, The Nature Conservancy (2007-April 2010)

- Led science collaboration with the Conservancy, IBM, and several university and agency partners to develop “Rivers for Tomorrow,” a web-based application to help resource managers assess the effects of land use change on crop production, water, soil erosion, carbon storage, and regional climate.

Associate Science Director, Great Rivers Center for Conservation and Learning, The Nature Conservancy (2005 - 2007).

- Coordinated and supported science efforts for the Upper Mississippi River, Upper Paraguay-Paraná River, and Upper Yangtze River basins.
- Led team of scientists and practitioners to propose organization-wide strategies for improving water quality in the world’s rivers, lakes, and wetlands.
- Supported Army Corps’ Science Panel for the Navigation and Ecosystem Sustainability Program, focusing on goals and objectives, ecosystem services, and an ecosystem “report card.”

Director of Conservation Science, The Nature Conservancy in Wisconsin (2001 – 2005)

- Directed science-related conservation and research within Wisconsin.
- Helped launch the Conservancy’s Upper Mississippi River program.
- Led conservation planning efforts for conserving freshwater ecosystems of the Upper Mississippi River basin.
- Represented the Conservancy on several state and federal agency conservation committees.
- Supported wetland and forest conservation in Perú and Mexico.

Stewardship Ecologist, The Nature Conservancy in Wisconsin (1996-2001)

- Led regional biodiversity assessments spanning the western Great Lakes states and provinces. Results incorporated into Wisconsin’s Land Legacy Report, annually targeting \$100+ million of public and private funds for acquisition and management of natural areas since 2002.
- Researched and monitored the effects of land management on species, communities, and ecosystems.

Natural areas management consultant (1997-1999)

- Wrote management plans, inventoried plant and animal species and assessed sites, land management, and applied for public funding on behalf of landowners.

Teaching Assistant, University of Wisconsin-Madison (1995 - 1996)

- *Vegetation Management Workshop* - taught ~50% of classes: prescribed fire training, herbicide safety, experimental design and analysis, monitoring techniques
- *Design and Management of Native Plant Communities*

Preserve Manager Assistant, The Nature Conservancy (1993 - 1995)

Research Assistant, UW-Madison, Dept. of Landscape Architecture (1995)

Project Assistant, UW-Madison, Dept. of Landscape Architecture (1994 - 1995)

Laboratory and Field Assistant, UW-Madison, Dept. of Soil Science (1990-1993)

Advising and mentoring

Graduate students: Lucy Nepstad

Post-doctoral fellows: Kimberley Carlson, Graham MacDonald, Leah Samberg, Lindsey Sloat

Visiting doctoral students: Andrea Santos Garcia (University of São Paulo, 2018)

Visiting scholars: Lijun Zuo (Chinese Academy of Sciences, 2014)

Staff scientists: Peder Engstrom, Deepak Ray

Popular media

“The Next Breadbasket” *National Geographic*. July 2014. Contributed data, text, and review for print and online graphics for yield gaps for crop production in Africa in a map called “Farming Africa”. Online article at: <http://www.nationalgeographic.com/foodfeatures/land-grab/>

“Feeding 9 Billion” *National Geographic*. May 2014. Contributed data, text, and review for print and online graphics for what we grow, where we grow it, and how we use it. Online article at: <http://www.nationalgeographic.com/foodfeatures/feeding-9-billion/>

“Feast of Famine” *National Geographic*. May 2013. Contributed data and text for print and online graphics for excess nitrogen on the world’s croplands. Interactive graphic: <http://ngm.nationalgeographic.com/2013/05/fertilized-world/nitrogen-flow-graphic>

Opinion pieces

West, PC. Mind the gaps: Reducing hunger by improving yields on small farms. *The Conversation*. January 23, 2017. <https://theconversation.com/mind-the-gaps-reducing-hunger-by-improving-yields-on-small-farms-67287>

West, PC. Alimentos e o desafio climático. *O Popular* (editorial in major Brazilian newspaper, translated by Laerte Guimarães Ferreira). August 20, 2016. <http://www.opopular.com.br/editorias/opiniaio/opini%C3%A3o-1.952961/alimentos-e-o-desafio-clim%C3%A1tico-1.1135456>

West, PC. 2015. Let’s Stop Treating Our Soil Like Dirt. *Enzia*. <http://ensia.com/voices/lets-stop-treating-our-soil-like-dirt/> July 20, 2015

Science Service

Advisory Committee, Carbon Management and Bio-resources Strategies for Scoping the Transition Toward Low Fossil Carbon (CambioScop), a five-year energy transition project as part of France’s Make our Planet Great Again initiative (2018-2023)

Advisory Committee, Pathways and Platforms for Reducing GHG Emissions from Agriculture. Packard Foundation (2015)

National Advisory Committee, Review of Public Policy Center at the University of Iowa (2014)

Science Advisory Panel, Climate and Land Use Alliance, synthesis of research on GHG emissions from agriculture and recommendations to major foundations for targeting funds. (2014)

River Alliance Invasive Species Advisory Group (2010-2011)

Co-chaired “Decision support systems for watershed management” workshop at the 8th Intecol International Wetlands Conference in Cuiabá, Brazil (July 2008)

Advisory Committee—Wisconsin Groundwater Advisory Committee (2004-2005)

Advisory Committee—Wisconsin Buffer Initiative (2004 – 2005)

Advisory Board—Wisconsin’s Citizen-based Monitoring Program (2004 – 2005)

Steering Committee—Wisconsin Comprehensive Wildlife Conservation Plan (2003 – 2005)

Chaired “Big River Conservation” session at Natural Areas Conference (2003)

Advisory Group—Wisconsin Department of Natural Resources Land Legacy Planning (2001-2002)

Stewardship Committee Chair—The Prairie Enthusiasts, Empire-Sauk Chapter (1993 – 2000)

Reviewer for technical journals, including: *Science*, *Nature*, *Nature Climate Change*, *Nature Communications*, *Nature Geoscience*, *Nature Sustainability*, *Nature Scientific Reports*, *Proceedings of the National Academy of Sciences*, *Biological Conservation*, *BioScience*, *Climatic Change*, *Diversity and Distributions*, *Diversity*, *Earth’s Future*, *Ecological Applications*, *Ecology and Society*, *Energy and*

Emission Control Technologies, Environmental Management, Environmental Science and Technology, Environmental Modeling and Software, Environmental Research Letters, F1000Research, Frontiers in Ecology and the Environment, Geophysical Research Letters, Global Change Biology, Global Environmental Change, Global Food Security, Journal for Cleaner Production, Journal of Forest Science, Journal of Geophysical Research – Biogeosciences, Journal of the Royal Society Interface, Land, PeerJ, PLOS ONE, Science of the Total Environment, Solutions, and Sustainability.

Peer-reviewed publications (advisees and mentees underlined)

West, Paul C. 2019. Redesigning Planning, Governance, and Policies to Achieve Multiple Sustainable Development Goals. *One Earth*. [invited preview article] 1: 303-304. doi: 10.1016/j.oneear.2019.11.002

Fitton N, P Alexander, N Arnell, B Bajzelj, K Calvin, J Doelman, JS Gerber, P Havlík, T Hasegawa, M Herrero, T Krisztin, H van Meijl, T Powell, R Sands, E Stehfast, PC West, P Smith. 2019. The vulnerabilities of agricultural land and food production to future water scarcity. *Global Environmental Change*. 58: 101944. doi: [10.1016/j.gloenvcha.2019.101944](https://doi.org/10.1016/j.gloenvcha.2019.101944)

Oakleaf JR, CM Kennedy, S Baruch-Mordo, JS Gerber, PC West, JA Johnson, and J Kiesecker. 2019. Mapping global development potential for renewable energy, fossil fuels, mining and agriculture sectors. *Scientific Data*. 6:101. doi: 10.1038/s41597-019-0084-8

Ray DK, PC West, M Clark, JS Gerber, AV Prishchepov, S Chatterjee. 2019. Climate change likely already affects global food production. *PLOS ONE*. 14: e0217148. doi: 10.1371/journal.pone.0217148

Garcia AS, VM de Faria Nasser Vilela, R Rizzo, PC West, JS Gerber, PM Engstrom, MV Ballester. 2019. Assessing land use/cover dynamics and exploring drivers in the Amazon's arc of deforestation through a hierarchical, multi-scale and -temporal classification approach. *Remote Sensing Applications: Society and Environment*. 15:100233 doi: 10.1016/J.RSASE.2019.05.002

Smith WK, JA Johnson, E Nelson, S Polasky, JC Milder, JS Gerber, PC West, S Siebert, KA Brauman, KM Carlson, M Arbuthnot, JP Rozza, DN Pennington. 2019. Voluntary sustainability standards could significantly improve the environmental performance of global agriculture. *Proceedings of the National Academy of Sciences*. www.pnas.org/cgi/doi/10.1073/pnas.1707812116

Nepstad LS, JS Gerber, J Hill, LC Dias, MH Costa, PC West. 2019. Pathways for recent Cerrado soybean expansion: extending the soy moratorium and implementing integrated crop livestock systems. *Environmental Research Letters*. <https://doi.org/10.1088/1748-9326/aafb85>

Thornton PK, A Whitbread, T Baedeker, J Cairns, L Claessens, W Baethgen, C Bunn, M Friedmann, KE Giller, M Herrero, M Howden, K Kilcline, V Nangia, J Ramirez-Villegas, S Kumar, PC West. 2018. A framework for priority-setting in climate smart agriculture research. *Agricultural Systems*, 167:161–175. <https://doi.org/10.1016/j.agsy.2018.09.009>

Iizumi T, Mizuki Kotoku, KWonsik, PC West, JS Gerber, ME Brown. 2018. Uncertainties of potentials and recent changes in global yields of major crops resulting from census- and satellite-based yield datasets at multiple resolutions. *PLoS-ONE*. PONE-D-18-03148R1

Zuo L, Z Zhang, KM Carlson, GK MacDonald, KA Brauman, Y Liu, W Zhang, H Zhang, W Wu, X Zhao, X Wang, B Liu, L Yi, Q Wen, F Liu, J Xu, S Hu, F Sun, JS Gerber, PC

and West. 2018. Progress towards sustainable intensification in China challenged by land-use change. *Nature Sustainability*, 1–10. <http://doi.org/10.1038/s41893-018-0076-2>

Sloat L, JS Gerber, L Samberg, L Ferreira, K Waha, M Herrero, PC West. 2018. Increasing importance of precipitation variability on global livestock grazing lands. *Nature Climate Change*. <https://doi.org/10.1038/s41558-018-0081-5>

O’Connell, CS, K Carlson, S Cuadra, K Feeley, JS Gerber, PC West, & S Polasky. 2018. Balancing tradeoffs: Reconciling multiple environmental goals when ecosystem services vary regionally. *Environmental Research Letters*. <http://doi.org/10.1088/1748-9326/aaafd8>

Jia, X, A Khandelwal, G Nayak, J Gerber, K Carlson, P West, V & Kumar. 2017. Incremental Dual-memory LSTM in Land Cover Prediction. In *Proceedings of the 23rd ACM SIGKDD International Conference on Knowledge Discovery and Data Mining - KDD '17* (pp. 867–876). New York, New York, USA: ACM Press. <http://doi.org/10.1145/3097983.3098112>

Jia, X, A Khandelwal, G Nayak, JS Gerber, K Carlson, PC West, & V Kumar, V. 2017. Predict Land Covers with Transition Modeling and Incremental Learning. In *Proceedings of the 2017 SIAM International Conference on Data Mining* (pp. 171–179). Society for Industrial and Applied Mathematics. <http://doi.org/doi:10.1137/1.9781611974973.20>

Herrero, M, PK Thornton, B Power, JR Bogard, R Remans, S Fritz, JS Gerber, G Nelson, L, K Waha, RA Watson, PC West, LH Samberg, J van de Steeg, E Stephenson, M van Wijk, P Havlík. 2017. Farming and the geography of nutrient production for human use: a transdisciplinary analysis. *Lancet Planet Health* 1:e33–42

Samberg, LS, JS Gerber, N Ramankutty, M Herrero, PC West. 2016. Subnational distribution of average farm size and smallholder contributions to global food production. *Environmental Research Letters*. 11:124010. doi: 10.1088/1748-9326/11/12/124010

*Listed in ERL’s “Highlights of 2016”

*Awarded “Highly Commended” in Editorial Board vote for “Best Article”

Carlson, KM, JS Gerber, ND Mueller, M Herrero, GK MacDonald, KA Brauman, P Havlík, CS O’Connell, JA Johnson, S Saatchi, PC West. 2016. Greenhouse gas emissions intensity of global croplands. *Nature Climate Change*. 7:63–68. doi: 10.1038/nclimate3158

Jia, X, A Khandelwal, JS Gerber, KM Carlson, PC West, V Kumar. 2016. Learning large-scale plantation mapping from imperfect annotators. in *IEEE International Conference on Big Data (Big Data)* (pp. 1192–1201). IEEE. <http://doi.org/10.1109/BigData.2016.7840723>

Gerber, JS, KM Carlson, I Garcia, P Havlík, M Herrero, M Launay, D Makowski, ND Mueller, CS O’Connell, P Smith, PC West. 2016. Spatially explicit estimates of N₂O emissions from croplands suggest climate mitigation opportunities from improved fertilizer management. *Global Change Biology*. 22:3383–3394 doi: 10.1111/gcb.13341

Wollenberg, E, M Richards, P Smith, P Havlík, M Obersteiner, FN Tubiello, M Herold, P Gerber, S Carter, A Reisinger, D van Vuuren, A Dickie, H Neufeldt, BO Sander, R Wassmann, R Simmer, JE Amonette, A Falcucci, M Herrero, C Opio, R Roman-Cuesta, E Stehfest, H Westhoek, I Ortiz-Monasterio, T Sapkota, MC Rufino, PK Thornton, L Verchot, PC West, J-F Soussana, T Baedeker, M Sadler, S Vermeulen, BM Campbell. 2016. Reducing emissions from agriculture to meet the 2°C target. *Global Change Biology*. 22:3859–3864. doi: 10.1111/gcb.13340

Fry JP, DC Love, GK MacDonald, PC West, PM Engstrom, KE Nachman, RS Lawrence. 2016. Environmental health impacts of feeding crops to farmed fish. *Environment International*. 91:201-214. doi: <http://dx.doi.org/10.106/j.envint.2016.02.022>

Chaplin-Kramer R, I Ramler, R Sharp, NM Haddad, JS Gerber, PC West, L Mandle, P Engstrom, A Baccini, S Sim, C Mueller, H King. 2015. Degradation in carbon stocks near tropical forest edges. *Nature Communications*. 6:10158. doi: 10.1038/ncomms10158.

Smith P, MF Cotrufo, C Rumpel, K Paustian, PJ Kuikman, JA Elliott, R McDowell, RI Griffiths, S Asakawa, M Bustamante, JI House, J Sobocká, R Harper, G Pan, PC West, JS Gerber, JM Clark, T Adhya, RJ Scholes, and MC Scholes. 2015. Biogeochemical cycles and biodiversity as key drivers of ecosystem services provided by soils. *SOIL* 1:665-685. www.soil-journal.net/1/665/2015/

Oakleaf JR, CM Kennedy, S Baruch-Mordo, PC West, JS Gerber, L Jarvis, J Kiesecker. 2015. A world at risk: aggregating development trends to forecast global habitat conversion. *PLoS-ONE* Published: October 7, 2015 doi: 10.1371/journal.pone.0138334

Smith P, JI House, M Bustamante, J Sobocká, R Harper, G Pan, PC West, J Clark, T Adhya, C Rumpel, K Paustian, P Kuikman, MF Cotrufo, JA Elliott, R McDowell, RI Griffiths, S Asakawa, A Bondeau, AK Jain, J Meersmans, and TAM Pugh. Global change pressures on soils from land use and management. 2015. *Global Change Biology*. doi: 10.1111/gcb.13068

MacDonald, GK, KA Brauman, S Sun, ES Cassidy, JS Gerber, PC West. 2015. Rethinking agricultural trade relationships in an era of globalization. *BioScience*. 65:275-289. doi: 10.1093/biosci/biu225

**article featured on the cover*

Ray, DK, JS Gerber, GK MacDonald, PC West. 2015. The effect of climate variability on global crop yields. *Nature Communications* 6:5989. doi: 10.1038/ncomms6989

Mueller ND, PC West, JS Gerber, GK MacDonald, Stephen Polasky, JA Foley. 2014. A tradeoff frontier for global nitrogen use and cereal production. *Environmental Research Letters*. 9: 054002.

West PC, JS Gerber, ND Mueller, KA Brauman, KM Carlson, ES Cassidy, PM Engstrom, M Johnston, GK MacDonald, DK Ray, and S Siebert. 2014. Leverage points for improving global food security and the environment. *Science*. 345:325-328.

<http://dx.doi.org/10.1126/science.1246067>

**Altmetric score of 419, placing it in the 99th %tile of all articles published in Science and 99th %tile of all articles tracked (over ~6.6 million)*

Cassidy ES, PC West, JS Gerber, JA Foley. 2013. Redefining agricultural yields: from tonnes to people nourished per hectare. *Environmental Research Letters* 8:034015.

**Featured in ERL's 10th Anniversary Collection*

**Awarded "paper of the year" by the journal's editorial board*

**Awarded "video abstract of the month" by the journal's editorial board*

Ray DK, ND Mueller, PC West, JA Foley. 2013. Yield trends are insufficient to double global crop production by 2050. *Public Library of Science - ONE*. doi: 10.1371/journal.pone.006642

Ray DK, N Ramankutty, ND Mueller, PC West, JA Foley. 2012. Recent patterns of crop yield growth, stagnation, and collapse. *Nature Communications*. 3:1293 doi: 10.1038/ncomms2296

Biggs R, M Schlüter, D Biggs, EL Bohensky, S BurnSilver, G Cundill, V Dakos, T Daw, L Evans, K Kotschy, A Leitch, C Meek, A Quinlan, C Raudsepp-Hearne, M Robards, ML Schoon, L Schultz, PC West. 2012. Toward principles for enhancing the resilience of ecosystem services. *Annual Review of Environment and Resources* 37:421-448.

Foley, JA, N Ramankutty, KA Brauman, ES Cassidy, J Gerber, M Johnston, ND Mueller, C O'Connell, DK Ray, PC West, C Balzer, EM Bennett, SR Carpenter, J Hill, C Monfreda, S Polasky, JR Rockstrom, J Sheehan, S Siebert, D Tilman, DPM Zaks. 2011. Solutions for a cultivated planet. *Nature*. 478: 337-342.

**article featured on the cover*

Bagley J, AR Desai, PC West, and JA Foley. 2011. Modeling the Global Biophysical Influence of Land Cover on the Soil-Vegetation-Boundary Layer System. *Earth Interactions*. 15: 1-32. doi: 10.1175/2011EI394.1.

West PC, GT Narisma, CC Barford, CJ Kucharik, JA Foley. 2011. An alternative approach for quantifying climate regulation by ecosystems. *Frontiers in Ecology and the Environment*. 9: 126-133.

West PC, HK Gibbs, C Monfreda, J Wagner, C Barford, SR Carpenter, and JA Foley. 2011. Reply to S Vermeulen and E Wollenberg: Distinguishing food security and crop yields. *Proceedings of the National Academy of Sciences*. 108: E31-E31.

West, Paul C. 2010. *Quantifying the Effects of Land Use Change on Ecosystem Services*. Ph.D. Dissertation, University of Wisconsin-Madison.

West PC, HK Gibbs, C Monfreda, J Wagner, C Barford, SR Carpenter, and JA Foley. 2010. Trading carbon for food: global comparison of carbon stocks vs. crop yields on agricultural land. *Proceedings of the National Academy of Sciences*. 107: 19645-19648. doi: 10.1073/pnas.1011078107.

Biggs R, MW Diebel, D Gilroy, AM Kamarainen, MS Kornis, ND Preston, JE Schmitz, CK Uejio, MC Van de Bogert, BC Wiedel, PC West, DPM Zaks, SR Carpenter. 2010. Preparing for the future: teaching scenario planning at the graduate level. *Frontiers in Ecology and the Environment*. 8: 267-273 doi: 10.1890/080075.

Eckman B, PC West, C Barford, G Raber. 2010. Intuitive simulation, querying, and visualization for river basin policy and management. *IBM Journal of Research and Development* 53(3), Paper 7, 1-18. 0018-8646/09

Reuter M, K Lubinski, P West, D Blodgett, M Khoury. 2005. The Nature Conservancy's approach to conserving and rehabilitating biological diversity in the Upper Mississippi River System. *Arch. Hydrobiol. Suppl.*155/1-4. 549-560.

Peer reviewed reports and book chapters

Hails, RS, R Chaplin-Kramer, E Bennett, G Daily, K Brauman, BE Robinson, PC West. 2019. "Determining the value of ecosystem services in agriculture." In *Agricultural Resilience*. [eds: SM Gardner, SJ Ramsden, RS Halis]. Cambridge University Press, p. 60.

Kotschy K, R Biggs, T Draw, C Folke, PC West. 2015. "Principle 1: Maintain Diversity and Resilience" in *Principles for Building Resilience: Sustaining ecosystem services in social-ecological systems* (R Biggs, M Schluter, ML Schoon, eds.). Cambridge University Press.

Dickie, A, C Streck, S Roe, M Zurek, F Haupt, A Dolginow, J Amonette, M Elliott, MG Borgeson, E Hafkenschiel, C Parker, L Stanley, P West. 2014. *Strategies for Mitigating Climate Change in Agriculture: Recommendations for Philanthropy – Executive Summary*. Climate Focus and California Environmental Associates, prepared with the support of the Climate and Land Use Alliance. Report and supplementary materials available at: www.agriculturalmitigation.org

West PC, R Biggs, BA McKenney, and C Monfreda. 2013. "Feeding the World and Protecting Biodiversity" in *Encyclopedia of Biodiversity 2nd Edition* (SA Levin editor). Waltham, MA: Academic Press. 3: 426-434.

Ranganathan J, K Bennett, C Raudsepp-Hearne, N Lucas, F Irwin, M Zurek, N Ash, and P West (editors). 2008. *Ecosystem Services: A guide for decision makers*. World Resources Institute. 96 pg.

Reports (P. West was team leader and lead author on all mentioned)

The Nature Conservancy. 2004. Restoring the Upper Mississippi River and its network of tributaries. Unpublished report. http://conserveonline.org/library/UMR_Plan.pdf/view.html

The Nature Conservancy and Nature Conservancy of Canada. 2002. The Superior Mixed Forest ecoregion: a conservation plan. Unpublished report. http://conserveonline.org/library/SMF_Ecoregional_Plan.pdf

The Nature Conservancy. 2001. The Prairie-Forest Border ecoregion: a conservation plan. Unpublished report. http://conserveonline.org/library/PrairieForestBorder_FINALREPORT_wExhibits.pdf

*Presentations (lead presenter only. * = invited)*

*West, PC. 2019. Sustainably feeding 10 billion people on a warming planet. Bioeconomy and its trade-offs towards meeting the Sustainable Development Goals and the Paris Agreement. Toulouse, France. November 19, 2019.

West P, JS Gerber, A Santos Garcia, LL Sloat, DK Ray, P Engstrom, S Stiffman, G Hyman, JR Manguera, M Castro Schmitz, G Truitt Nakata, Irene Farrow. 2019. Mapping and targeting efforts to restore degraded lands for agriculture in Latin America. Global Land Project Open Science Meeting. Bern, Switzerland. April 26, 2019.

* Elias, P, G Truitt Nakata, PC West, J Seale. 2018. Panel discussion: Promoting soil health to ensure global food and nutrition security. Moderated by R Thurow. FAO Liaison Office for North America, Washington, DC. November 28, 2018.

*West, PC. 2018. Sustainably feeding a growing population on a warming planet. Montana Institute on Ecosystems Distinguished Visiting Lecture Series. Montana State University. Bozeman, MT. September 26, 2018. [distinguished visiting lecture series]

- *West, PC. 2018. Sustainably feeding a growing population. Chinese Academy of Sciences. Beijing, China. August 21, 2018.
- *West, PC. 2018. Sustainable Food Production in a Changing Climate: Causes and Effects. Webinar lecture to climate change and agriculture class, University of Galway. Galway, Ireland. March 28, 2018.
- *West, PC. 2017. Panelist for Institute for Food Technologies' "How Supply Chain Innovation Can Contribute to Sustainability" virtual meeting. December 14, 2017
- *West, PC and P Engstrom. 2017. Using geodata to improve global food security and the environment. Esri Education Summit. Redlands, CA. November 9, 2017.
- *West, PC. 2017. Assessing climate-related risks: changes in the mean and variability. Climate Change and Food Security science meeting. Galway, Ireland. April 25, 2017.
- *West, PC. 2017. Sustainable food production in a changing climate. Agriculture and Climate Change. Sitges, Spain. March 26-28, 2017. [opening keynote]
- West, PC, JS Gerber. 2016. Attributing forest loss to specific commodities. Global Land Project. Beijing, China. October 24-27, 2016.
- *West, Paul C. 2016. How we grow and what we eat: food's critical role in limiting climate change. Festival Internacional de Cinema e Vídeo Ambiental. Cidade de Goiás, Goiás, Brazil. August 20, 2016. [keynote]
- *West, Paul C. 2016. Challenges and leverage points for sustainably increasing global food security. University of Queensland, Australia. May 26, 2016.
- *West, Paul C. 2016. Sustainable food production in data-limited areas: insights from global analyses. AAAS Annual Meeting. Washington, DC. February 12, 2016.
- *West, Paul C. 2016. Food systems and climate change: understanding how yield gaps, management practices, land use planning, climate, and diet affect food availability, and greenhouse gas emissions. World Bank. Washington, DC. February 11, 2016.
- *West, Paul C. 2015. Sustainably increasing global food security: challenges, opportunities, and successes. Expogestión Orinoquía. Villavicencio, Colombia. September 10, 2015. (*keynote speaker*)
- *West, Paul C. 2015. Sustainably feeding 9+ billion with a changing climate. Federal University of Lavras, Brazil. XIX Congresso Brasileiro de Agrometeorologia: O desafio do uso sustentável dos biomas brasileiros. Lavras, Brazil. August 27, 2015.
- *West, Paul C. Kimberly Carlson, James S. Gerber, Nathaniel D. Mueller, Christine O'Connell, Petr Havlik, Mario Herrero, and Sassan Saatchi. Greenhouse Gas Emissions from Global Agriculture. Ecological Society of America 100th anniversary conference. Baltimore, Maryland. August 14, 2015.
- * West, Paul C. 2015. Sustainably Feeding 9+ Billion: Trends, Risks, and Solutions. University of Aberdeen, Scotland. May 19, 2015.

- * West, Paul C. 2014. Solving the dilemma: producing more food with limited resources. Foro Global Agroalimentario 2014. Mazatlan, Mexico. October 23-24, 2014. (*keynote speaker*)
- *West, Paul C. 2014. Biodiversity and Life Cycle Analysis: moving forward with limited data. United Nations Environment Program, Life Cycle Analysis Working Group. October 7, 2014.
- *West, Paul C. 2014. Global Land Use, Food Security, and Resilience. Global Land Use and Food Security: Issues and Evidence. Kings College, Cambridge, UK. September 20-21, 2014.
- *West, Paul C. 2014. A data-driven approach for creating a sustainable food system. Google[x]. Google[x] headquarters, Mountain View, CA. August 5, 2014.
- *West, Paul C. 2014. Treading Sustainably: Food Security, Land Use and the Future of Agriculture. Panelist with Eric Lambin, Arlin Wasserman, and Martin Smith. Cooking for Solutions conference, Sustainable Food Institute and the Monterrey Bay Aquarium. Monterrey, CA. May 14-15.
- West, Paul C., James S. Gerber, Peder Engstrom, Deepak K. Ray, Jonathan A. Foley. 2014. The changing climate envelope: migrating, shrinking, and expanding conditions for growing crops under future climate scenarios. Global Land Project Open Science Meeting. Berlin, Germany. March 19-21.
- West, Paul C., James S. Gerber, Nathaniel D. Mueller, Kate A. Brauman, Emily S. Cassidy, Matt Johnston, Deepak R. Ray, Jonathan A. Foley. 2012. Targeting Solutions to Improve Crop Production and the Environment. American Geophysical Union, Fall Meeting. San Francisco, CA. December 3-7.
- * West, Paul C. 2012. Global trends in agriculture and opportunities to boost production while improving the environment. AgReturn Venture Capital Conference. Chicago, IL. November 13-14.
- * West, Paul C. 2011. Meeting future food needs while sustaining the planet. North Central chapter of the National Agri Marketing Association. Minneapolis, MN.
- *West, Paul C. 2011. Solutions for a cultivated planet. Food, Sustainability & Globalization conference for educators. Milwaukee, WI.
- *West, Paul C. 2010. Trading carbon for food: the carbon costs of clearing natural ecosystems for new croplands. Wisconsin Space Grant Consortium Annual Meeting. Sheboygan, WI. August 19-20.
- *West, Paul C. 2009. Panelist in “Data for All” session at the 5th World Water Forum. Istanbul, Turkey. March 16-21.
- * West, Paul C. 2008. Managing basins to meet multiple social goals: a new tool for quantifying the effects of land use change on ecosystem services. 8th Intecol International Wetlands Conference. Cuiabá, Mato Grosso, Brazil. July 21-25.

* Paul West, Carol Barford, Chris Kucharik, Holly Gibbs, Chad Monfreda, and Jon Foley. 2007. Distribution of ecosystem services in large river basins: applications to conservation planning. Society for Conservation Biology Annual Meeting. Port Elizabeth, South Africa. July 1-5.

* Paul West, Carol Barford, Chris Kucharik, Holly Gibbs, Chad Monfreda, and Jon Foley. 2006. Distribution of ecosystem services in large river basins. June 25-28. International Conference on Rivers and Civilization: Multidisciplinary Perspectives on Major River Basins. LaCrosse, WI.

* West, Paul C. 2004. Adaptive management and the Upper Mississippi River. Midwest Area River Coalition (MARC2000) Annual Meeting. St. Louis, MO. November 4-5.

* West, Paul. 2004. Recommendations for developing a state-wide citizen-based monitoring program. Citizen-based Monitoring Conference. Panelist. Madison, WI. August 20-21.

Mary Khoury, Paul West, Michael Reuter, Ken Lubinski, Catherine McCalvin, Douglas Blodgett, David Braun, Blane Heumann, David DeGeus, and Larry Clemens. 2004. Designing conservation strategies for the Upper Mississippi River: what is a reserve and does the reserve design apply? Society for Conservation Biology Annual Meeting. New York, NY. July 30 – August 2.

West, Paul C., Mary Khoury, David Braun, Michael Reuter, Ken Lubinski, Catherine McCalvin. 2004. Freshwater biodiversity conservation in an agricultural river basin: strategies for the Upper Mississippi River. American Fisheries Society annual conference. Madison, WI.

* West, Paul C. 2003. Designing conservation strategies to implement regional biodiversity assessments: examples from the Upper Mississippi River basin. Midwest Region Natural Heritage Conference. LaCrosse, WI. March 28-31.

Michael Reuter, David Braun, Mary Khoury, Ken Lubinski, and Paul West. 2003. The Nature Conservancy's Upper Mississippi River Ecological Restoration Project. Lowland River Rehabilitation Conference. Wageningen, Netherlands. September 29-October 3.

* West, Paul C. 2003. Ecoregion biodiversity assessment and implementation: examples from the Upper Midwest. Natural Areas Conference. Madison, WI.

Stackpole, Sarah M., John A. Harrington, and Paul C. West. 2003. Effects of burning and thinning on groundlayer vegetation in a dry-mesic and dry oak forest in southern Wisconsin. Natural Areas Conference. Madison, WI.

Braun, David, Larry Clemens, and Paul West. 2003. Challenges to conserving native freshwater biodiversity in agricultural watersheds. AWRA Spring Specialty Conference: Agricultural hydrology and water quality. Kansas City, MO.

*West, Paul C. 2002. Conservation planning and action for conserving Wisconsin's aquatic biodiversity. Waters of Wisconsin Conference. Madison, WI. October 21-22.

West, Paul C. 2002. Short-comings of ecoregions as planning units. The Nature Conservancy's All Science Conference. Albuquerque, NM.

West, Paul C. and Shannon Horn (presenter). 2000. The Upper Mississippi River Ecosystem: An Action Plan. Natural Areas Conference.

*West, Paul C. 1998. Monitoring Biodiversity panelist. Natural Areas Management Planning Conference. Carroll College. Waukesha, WI.

*West, Paul C. 1997. The Significance of the Kettle Moraine and the Nature Conservancy's Lulu Lake. Wisconsin Academy of Sciences, Arts, and Letters: Kettle Moraine Symposium. Whitewater, WI.

West, Paul C. and John A. Harrington. 1996. Comparison of short-term impacts of spring, early-summer, and late-summer fires on a Wisconsin prairie. Natural Areas and North American Prairie Conference. Geneva, IL.

Posters (lead presenter only)

West, PC, JS Gerber, P Engstrom, NK Ray, JA Foley. 2013. The changing climate envelope: migrating, shrinking, and expanding conditions for growing crops under future climate scenarios. American Geophysical Union, Fall meeting. San Francisco, CA. December 2014.

West, PC, ND Mueller, JS Gerber, and JA Foley. 2011. Opportunities to decrease excess nitrogen while maintaining current crop yields. American Geophysical Union, Fall meeting. San Francisco, CA. December 2011.

West, PC and J Wagner. 2003. Assessing ecological integrity of northern hardwoods. Sustainable Forest Roundtable in Partnership with the Upper Mississippi River Forest Partnership. LaCrosse, WI. March 23-24.

West, PC and J Welsh. 1997. A comparison of fire, thinning and fire/thinning in oak woodlands. Fourth Midwest Oak Savanna and Woodlands Conference. Madison, WI.

Honors

- 2019 "Highly Cited Researcher" by Web of Science in 2019, which it estimates "world's most influential researchers of the past decade." Only 169 were selected for the Ecology/Environment discipline.
- 2018 Honor Award, Analysis and Planning, American Society of Landscape Architects. For the project "Iowa Blood Run Cultural Landscape Master Plan." I served as an ecologist on the team that developed the master plan.
- 2017 Merit Award, Analysis and Planning, Wisconsin ASLA. Ecologist on the team that developed the master plan for Blood Run National Historic Landmark, Iowa and South Dakota.
- 2009 Dr. Laurel Salton Clark Memorial Graduate Fellowship, NASA and Wisconsin Space Grant Consortium
- 2009 Sponsored University Research Award, IBM
- 1996 Outstanding Community Service Award - UW-Madison Dept. of Landscape Architecture
Graduated with Distinction
Dean's Honor List every semester at UW-Madison
Gamma Sigma Delta, Honor Society of Agriculture
- 1989 UW-Madison Alumni of Northern Illinois Scholarship

Major grants & fundraising

- \$150,000 *Improving the broader effectiveness of zero-deforestation commitments and commodity standards*, Meridian Institute, Principal Investigator, awarded June 2019
- \$192,000 *Action Landscapes for Advancing The Nature Conservancy's Healthy Agricultural Systems Strategy in Latin America*, The Nature Conservancy, Principal Investigator, awarded October 2017 / March 2018
- 250,000€ *Delivering Food Security on Limited Land (DEVIL)*, co-Principal Investigator (US portion of the research team), Belmont Forum & Joint Programming Initiative on Agriculture, Food Security and Climate Change (FACCE-JPI), awarded March 2015
- \$900,000 *Managing for Risk and Sustainability in the Global Food System*, Gordon & Betty Moore Foundation, co-PI, awarded December 2014
- \$110,000 *Assessment and Indicators for Bioclimatic regulation in Latin America*, Inter-Americas Development Bank, Principal Investigator, awarded December 2014
- \$184,625 *Assessing sustainable agriculture/forestry standards*, Luc Hoffman Institute, co-PI, awarded August 2014
- \$2,200,000 *Global Landscapes Initiative*, Gordon & Betty Moore Foundation, Principal Investigator, awarded September 2011
- \$1,250,000 Unrestricted funds from major companies and their foundations, awarded 2011-2017