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Education

University of California, Santa Barbara, Santa Barbara, CA
Ph.D. in Economics and Environmental Science, 2008

University of California, Santa Barbara, Santa Barbara, CA
M.A. in Economics, 2004

Indiana University, Bloomington, IN
B.A. with distinction in Mathematics, Geography, Environmental Studies; Minor in Economics, 2000

Employment

Conservation International, Berkeley, CA
Climate Economics Fellow, 2021-present

Earth Innovation Institute, San Francisco, CA
Chief Economist, 2018-2020

Center for Global Development, Washington, DC
Visiting Fellow, 2017-2018
Senior Fellow, 2016-2017
Research Fellow, 2013-2015

Conservation International, Arlington, VA
Climate and Forest Economist, 2010-2013
Post-doctoral Fellow, Economics of Climate Change and Biodiversity, 2008-2010
Economic Consultant, 2005-2008

Peace Corps, Gourcy, Burkina Faso
High School Math Teacher, 2000-2002

Other Professional Activity

University of California, Berkeley, CA. Visiting Fellow at Center for Effective Global Action, 2016-2018, 2019-present
Conservation Letters, a journal of the Society for Conservation Biology. Editorial Board, 2013-present
Carbon 180 (formerly Center for Carbon Removal), Oakland, CA. Advisory Board, 2016-2020
Columbia University, New York, NY. Lecturer (Adjunct Professor), Earth Institute, 2018
The Nature Conservancy, Washington, DC and San Francisco, CA. Economic Consultant, 2018
Green Climate Fund, Songdo, South Korea. Technical Advisor, 2017
Zhejiang University, Hangzhou, China. Visiting Fellow in College of Environmental and Natural Resources, 2016-2017
World Bank, Washington, DC. Technical Advisor to the Forest Carbon Partnership Facility, 2012-2013
Global Environment Facility, Washington, DC. Technical Advisor, 2013; Economic Consultant, 2007, 2009
Monterey Institute of International Studies, Monterey, CA. Adjunct Professor, 2012
Office of the President, Georgetown, Guyana. Special Advisor to the President for Carbon and Climate Change, 2009
Environmental Defense Center, Santa Barbara, CA. Economic Analyst, 2003-2006

Publications

Books

Seymour, F. and Busch, J. (2016) *Why Forests? Why Now? The Science, Economics, and Politics of Tropical Forests and Climate Change*. Center for Global Development, Washington, DC, 429 pp.

Peer-Reviewed Journal Articles

Roe, S., Streck, C., Beach, R., Busch, J., Chapman, M., Daioglou, V., Deppermann, A., Doelman, J., Emmet-Booth, J., Engelmann, J., Fricko, O., Frischman, C., Funk, J., Grassi, G., Griscom, B., Havlik, P., Hanssen, S., Humpenöder, F., Landholm, D., Lomax, G., Lehmann, J., Mesnildrey, L., Nabuurs, G.-J., Popp, A., Rivard, C., Sanderman, J., Sohngen, B., Smith, P., Stehfest, E., Woolf, D., Lawrence, D. (2021) Land-based measures to mitigate climate change: potential and feasibility by country. *Global Change Biology*, doi: 10.1111/gcb.15873

Busch, J., Ring, I., Akullo, M., Amarjargal, O., Borie, M., Cassola, R.S., Cruz-Trinidad, A., Droste, N. Haryanto, J.T., Kasymov, U., Kotenko, N.V., Lhkagvadorj, A., Lima De Paulo, F.L., May, P.H., Mukherjee, A., Mumbunan, S., Santos, R., Tacconi, L., Verde Selva, G., Verma, M., Wang, X., Yu, L., Zhou, K. (2021). “A global review of ecological fiscal transfers.” *Nature Sustainability*, 4:756-765.

Shah, P., Baylis, K., Busch, J., Engelmann, J. (2021). “What determines the effectiveness of national protected area systems?” *Environmental Research Letters*, doi.org/10.1088/1748-9326/ac05ed

Dobson, A.P., Pimm, S., Hannah, L., Kaufman, L., Ahumada, J.A., Ando, A.W., Bernstein, A., Busch, J., Daszak, P., Engelmann, J., Kinnaird, M., Li, B., Loch-Temzelides, T., Lovejoy, T., Nowak, K., Roehrdanz, P., Vale, M.M. (2020). “Ecology and economics for pandemic prevention.” *Science*, 369(6502):379-381.

Busch, J., Kapur, A., Mukherjee, A. (2020). “Did India’s ecological fiscal transfers incentivize state governments to increase their forestry budgets?” *Environmental Research Communications*, doi.org/10.1088/2515-7620/ab817c

Yang, B., Qin, S., Xu, W., Busch, J., Yang, X., Gu, X., Yang, Z., Wang, B., Dai, Q., Xu, Y. (2020). “Gap Analysis of Giant Panda Conservation as an Example for Planning China's National Park System” *Current Biology*, 30:1-5.

Griscom, B., Busch, J., Cook-Patton, S., Ellis, P., Funk, J., Leavitt, S., Lomax, G., Turner, W., Chapman, M., Engelmann, J., Gurwick, N., Landis, E., Lawrence, D., Malhi, Y., Schindler Murray, L., Navarrete, D., Roe, S., Scull, S., Smith, P., Streck, C., Walker, W., Worthington, T. (2020). “National mitigation potential from natural climate solutions in the tropics.” *Philosophical Transactions of the Royal Society B*, 375:20190126.

Busch, J., Amarjargal, O. (2020). “Authority of second-tier governments to reduce deforestation in 30 tropical countries.” *Frontiers in Forests and Global Change*, 3:1. doi: 10.3389/ffgc.2020.00001.

Bauhoff, S., Busch, J. (2020). Does deforestation increase malaria prevalence? Evidence from satellite data and health surveys. *World Development*, 127:104734.

Busch, J., Engelmann, J., Cook-Patton, S., Griscom, B., Kroeger, T., Possingham, H., Shyamsundar, P. (2019). “Low-cost opportunities for carbon dioxide removal through tropical reforestation” *Nature Climate Change*, 9:463-466.

Funk, J.M., Aguilar-Amuchastegui, N., Baldwin-Cantello, W., Busch, J., Chuvasov, E., Evans, T., Griffin, B., Harris, N., Napolitano Ferreira, M., Petersen, K., Phillips, O., Soares, M.G., van der Hoff, R.J.A. (2019). “Securing the climate benefits of stable forests.” *Climate Policy*. 7:845-860.

- Game, E.T., Tallis, H., Olander, L., Alexander, S.M., Busch, J., Cartwright, N., Kalies, E.L., Masuda, Y.J., Mupepele, A-C, Qiu, J., Rooney, A., Sills, E., Sutherland, W.J. (2018). "Cross-discipline evidence principles for sustainability policy." *Nature Sustainability*, 1:452-454.
- Busch, J. (2018). "Monitoring and evaluating the payment-for-performance premise of REDD+: the case of India's ecological fiscal transfers." *Ecosystem Health and Sustainability*. 4(7):169-175.
- Busch, J. and Engelmann, J. (2017). "Cost effectiveness of reducing emissions from tropical deforestation, 2016-2050." *Environmental Research Letters*. 13(1):015001.
- Busch, J. and Mukherjee, A. (2017). "Encouraging state governments to protect and restore forest using ecological fiscal transfers: India's tax revenue distribution reform." *Conservation Letters*. 11(2):e12416.
- Alisjahbana, A. and Busch, J. (2017). "Survey of recent developments: Forestry, fires, and climate change in Indonesia." *Bulletin of Indonesian Economic Studies*. 53(2):111-136.
- Busch, J. and Ferretti-Gallon, K. (2017) "What drives deforestation and what stops it? A meta-analysis" *Review of Environmental Economics and Policy*, 11(1):3-23.
- Goetz, S.J., Hansen, M., Houghton, R.A., Walker, W., Laporte, N., Busch, J. (2015) "Measurement and monitoring needs, capabilities and potential for addressing reduced emissions from deforestation and forest degradation under REDD+" *Environmental Research Letters* 10:123001.
- Pelletier, J., Busch, J., Potvin, C (2015) "Addressing uncertainty upstream or downstream of accounting for emissions reductions from deforestation and forest degradation" *Climatic Change*, 130(4):635-648.
- Busch, J., Ferretti-Gallon, K., Engelmann, J., Wright, T., Austin, K., Stolle, F., Turubanova, S., Potapov, P., Margono, B., Hansen, M., Baccini, A. (2015) "Reductions in emissions from deforestation from Indonesia's moratorium on new oil palm, timber, and logging concessions" *Proceedings of the National Academy of Sciences of the United States of America*. 112(5):1328-1333.
- Yang, B., Busch, J., Zhang, L., Ran, J., Gu, X., Zhang, W., Du, B., Xu, Y., Mittermeier, R.A. (2014) "China's collective forest tenure reform and the future of the giant panda." *Conservation Letters*. 8(4):251-261.
- Andersen, L., Busch, J., Curran, C., Ledezma, J.C., Mayorga, J., Ruiz, P. (2014) "Environmental and socio-economic consequences of forest carbon payments in Bolivia: Results of the OSIRIS-Bolivia model." *Latin American Journal of Economic Development* 22:7-48.
- Busch, J. (2013) "Supplementing REDD+ with biodiversity payments: The paradox of paying for multiple ecosystem services." *Land Economics* 89(4):655-675.
- Busch, J. and Grantham, H. (2013) "Parks vs. payments: reconciling divergent strategies for addressing biodiversity loss and climate change from tropical deforestation." *Environmental Research Letters* 8:034028.
- Yang, B., Busch, J., Zhang, L., Ran, J., Gu, X., Zhang, W., Du, B., Mittermeier, R. (2013) "Eco-compensation for giant panda habitat." *Science* 339:521. (letter)
- Busch, J., Ahumada, J., de Koning, F., Harvey, C.A., Hewson, J., Hole, D., Honzak, M., Panfil, S.N., Pidgeon, E., Portela, R., Steininger, M., Tabor, K., Turner, W.R. (2013) "Research spotlight: Designing nature-based mitigation to promote multiple benefits." *Carbon Management* 4(2):129-133.
- Busch, J., Lubowski, R., Godoy, F., Steininger, M., Yusuf, A., Austin, K., Hewson, J., Juhn, D., Farid, M. and Boltz, F. (2012). "Structuring economic incentives to reduce emissions from deforestation within Indonesia." *Proceedings of the National Academy of Sciences of the United States of America* 109(4):1062-1067.

- Busch, J., Dave, R., Hannah, L., Cameron, A., Rasolohery, A., Roehrdanz, P. and Schatz, G. (2012). “Climate change and the cost of conserving species in Madagascar.” *Conservation Biology* 24(3):408-419.
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- Cattaneo, A., Lubowski, R., Busch, J., Creed, A., Strassburg, B., Boltz, F. and Ashton, R. (2010). “On international equity in reducing emissions from deforestation.” *Environmental Science and Policy* 13(8):742-753.
- Busch, J., Strassburg, B., Cattaneo, A., Lubowski, R., Bruner, A., Rice, R., Creed, A., Ashton, R. and Boltz, F. (2009). “Comparing climate and cost impacts of reference levels for reducing emissions from deforestation.” *Environmental Research Letters* 4:044006.
- Busch, J. (2009). “Surfer and beachgoer responsiveness to coastal water quality warnings.” *Coastal Management* 37:529-549.
- Busch, J. and Cullen, R. (2009). “Effectiveness and cost-effectiveness of yellow-eyed penguin recovery.” *Ecological Economics* 68(3):762-776.
- Busch, J. (2008). “Gains from configuration: The transboundary protected area as a conservation tool.” *Ecological Economics* 67(3):394-404.
- da Fonseca, G.A.B., Rodriguez, C.M., Midgeley, G., Busch, J., Hannah, L. and Mittermeier, R.A. (2007). “No forest left behind.” *PLoS Biology* 5(8):1645-1646.

Working Papers and Policy Reports

- Ring, I., Busch, J. (2021). “Ecological Fiscal Transfers.” In: Haddad, B., Solomon, B. (Eds.) *Dictionary of Ecological Economics*.
- Busch, J. (2021) “India’s Ecological Fiscal Transfers as a Test Case of Performance-Based Payments.” In: Heine, D., Batmanian, G., Hayde, E. (Eds.) *Designing Fiscal Mechanisms for Sustainable Forests*. World Bank, Washington, DC. 330 pp. (box text)
- Vale, M.M., Marquet, P.A., Corcoran, D., Scaramuzza, C.A.M., Hannah, L., Busch, J., Maass, A., Roehrdanz, P.R., Velasco-Hernandez, J.X. (2021). *Could a future pandemic come from the Amazon? White Paper*. Conservation International, Arlington, VA.
- Busch, J., Kapur, A., Mukherjee, A. (2019) “Are Indian States Increasing Their Forestry Budgets as an Investment in Future Revenue from Ecological Fiscal Transfers?” *Earth Innovation Institute*, San Francisco, CA.
- Bauhoff, S., Busch, J. (2018) “Does Deforestation Increase Malaria Prevalence? Evidence from Satellite Data and Health Surveys.” *Working Paper #480*, Center for Global Development, Washington, DC.
- Busch, J., Engelmann, J., Lépiessier, A. (2016) “Technical Background Note for Why Forests? Why Now? Chapter 5 Cheaper, Cooler, Faster: Reducing Tropical Deforestation for a More Cost-Effective Global Response to Climate Change.” *Policy Paper #093*. Center for Global Development, Washington, DC.
- Birdsall, N., Kuczynski, P.P. et al. (2015) “Look to the Forests: How Performance Payments Can Slow Climate Change.” *Working group report*. 74 pp. Center for Global Development, Washington, DC. (working group member)
- Busch, J. and Engelmann, J. (2015) “The future of forests: emissions from tropical deforestation with and without a carbon price, 2016-2050.” *Working Paper #411*. Center for Global Development, Washington, DC.

- Goetz, S.J., Hansen, M., Houghton, R.A., Walker, W., Laporte, N., and Busch, J. (2014) “Measurement and Monitoring for REDD+: The Needs, Current Technological Capabilities and Future Potential” Working Paper #392. Center for Global Development, Washington, DC.
- Ferretti-Gallon, K. and Busch, J. (2014) “What drives deforestation and what stops it? A meta-analysis of spatially explicit econometric studies” Working Paper #361. Center for Global Development, Washington, DC.
- Murray, B., Busch, J., Woodward, R. T. and Jenkins, W. A. (2013) “Designing cap and trade to correct for non-additional offsets.” Duke Environmental Economics Working Paper EE 10-03 V2.
- “Non-Carbon Benefits.” (2012) FCPF Carbon Fund Discussion Paper. Forest Carbon Partnership Facility and World Bank Carbon Finance Unit, Washington, DC. (unnamed author)
- “Reference Levels and Additionality.” (2012) FCPF Carbon Fund Discussion Paper. Forest Carbon Partnership Facility and World Bank Carbon Finance Unit, Washington, DC. (unnamed author)
- Albán, M., Ulloa, R., Busch, J., Barrera, L., Vollberg, C., Suárez, L., de Koning, F. (2012) “National level evaluation of financing needs for the implementation of the Aichi Biodiversity Targets in Ecuador.” Ministry of Environment Ecuador, Conservation International Ecuador, Secretariat of the Convention on Biological Diversity. Quito, Ecuador. 35pp.
- Andersen, L., Busch, J., Curren, E., Ledezma, J.C., Mayorga, J. and Bellier, M. “Environmental and socio-economic consequences of forest carbon payments in Bolivia: Results of the OSIRIS-Bolivia model.” Development Research Working Paper Series 02/2012. Institute for Advanced Development Studies (INESAD), La Paz, Bolivia.
- Andersen, L., Busch, J., Curren, E., Ledezma, J.C., Mayorga, J., Junco, P.R. (2012) “Mecanismos de Reducción de Deforestación.” Sintesis: Boletín Informativo del Instituto de Estudios Avanzados en Desarrollo N° 1, June 2012. Institute for Advanced Development Studies (INESAD), La Paz, Bolivia.
- “Case studies of the difference in cost of implementing REDD+ activities with or without biodiversity safeguards in Indonesia and Madagascar.” In: Making biodiversity safeguards for REDD+ work in Practice: Developing operational guidelines and identifying capacity requirements. UNEP-WCMC, May 2011. (analytical contributor)
- Morris, D., Busch, J. and Boltz, F. (2011). “Geographically prioritizing appropriations for the sustainable landscapes program.” Issue Brief 11-01. Resources for the Future, Washington, DC. 7pp.
- Busch, J., Helmy, F., Lubowski, R., Farid, M., Boltz, F. (2011). Indonesia’s climate change commitment and the critical role of REDD+: Findings of the OSIRIS-Indonesia model. In: DNPI Green Review on REDD+. Indonesia National Council on Climate Change (DNPI), Jakarta, Indonesia, 199pp.
- Busch, J. (2010). “Supplementary biodiversity payments for REDD+.” In: The Little Biodiversity Finance Book. Global Canopy Programme, Oxford, UK. (box text)
- Busch, J., Helmy, F., Farid, M., Lubowski, R., Boltz, F., Sukadri, D. (2010). “Economic Incentive Policies for REDD+ in Indonesia: Findings from OSIRIS model. Policy Memo No 2/2010.” National Council on Climate Change (DNPI), Jakarta, Indonesia. 24pp.
- “Options for setting reference levels.” In: Angelsen, et al. (2009). Reducing Emissions from Deforestation and Degradation (REDD): An Options Assessment Report. Prepared for the Government of Norway. Meridian Institute, Washington, DC. 100 pp. (analytical contributor)

Suich, H., Busch, J., and Barbancho, N. (2006). "Economic impacts of transfrontier conservation areas: Baseline of tourism in the Kavango-Zambezi TFCA." Conservation International South Africa, Cape Town, South Africa, 69pp.

Policy Briefs and Public Comments

"Strong Support for CARB Endorsing the Updated California Tropical Forest Standard." Public comment to California Air Resources Board from Earth Innovation Institute. August 2019.

Busch, J., Nepstad, D. (2019) "Ten Ways for the Next American President to Lead on Climate and Forests." Earth Innovation Institute, San Francisco, CA. July 2019.

"Letter to Legislators on AB 572: California Deforestation-Free Procurement Act." Earth Innovation Institute. March 2019.

"Environmental Integrity in the California Tropical Forest Standard: Addressing Leakage, Additionality, and Permanence so that Credits Benefit the Climate." Earth Innovation Institute-Environmental Defense Fund-Conservation International. March 2019.

"Strong Support for CARB Endorsing the Draft California Tropical Forest Standard." Public comment to California Air Resources Board from Earth Innovation Institute. October 2018.

"Greenhouse Gas Reduction Fund Accounting Methods for Natural and Working Lands: Consistencies and Inconsistencies." Prepared for The Nature Conservancy, San Francisco, CA. April 2018.

"Strong Support for Accelerating Sector-Based Credits for Tropical Forest Protection." Public comment to California Air Resources Board. September 2016.

"Support for Sector-Based Crediting for Tropical Forests in California's Cap-and-Trade Program." Letter to Governor Edmund G. Brown, Jr. from the Center for Global Development's Working Group on Scaling Up Performance-Based Transfers for Reduced Tropical Deforestation. June 2016

"Support for ARB staff thinking on technical design elements of sectoral crediting for tropical forests." Public comment to California Air Resources Board on sectoral offset credits tropical forests in California's cap-and-trade program. April 2016

"Eight Reasons for California to Lead on Climate and Forests." Public comment to California Air Resources Board on sectoral offset credits tropical forests in California's cap-and-trade program. October 2015

"External Expert Review of Reference Level Proposal for Guyana's REDD+ Program." January 2014.

"Joint Comment on Forest Carbon Partnership Facility Readiness Fund FMT Note 2011-14, Component 3; Readiness Package Content and Assessment Approach: Reference Emissions Level/Reference Level." Conservation International/Environmental Defense Fund/The Nature Conservancy/Union of Concerned Scientists/World Wildlife Fund. September 2012.

"Policy recommendations for Indonesia's REDD+ strategy." Policy brief to President Susilo Bambang Yudhoyono. Indonesia National Council on Climate Change (DNPI). November 2010.

Lubowski, R., Walker, D., Busch, J., Janson-Smith, T. (2010). "Comments to California Air Resources Board on Sector-Based Crediting and Subnational Reducing Emissions from Deforestation and Degradation (REDD) as part of California's Cap-and-Trade Program."

- Busch, J. and Lubowski, R. (2010). "Preliminary quantitative analysis of REDD potential in four Indonesian provinces and five Brazilian states." Conservation International and Environmental Defense Fund.
- Busch, J. and Bishop, A. (2009). "REDD+ Preparatory Brief." Prepared for UNFCCC COP 15, Office of Climate Change, Office of the President, Guyana.
- Busch, J. (2009). "Presidential Brief #4." Prepared for His Excellency, Bharrat Jagdeo, President of Guyana.
- Busch, J. (2009). "Presidential Brief #3." Prepared for His Excellency, Bharrat Jagdeo, President of Guyana.
- Busch, J. (2009). "Presidential Brief #2." Prepared for His Excellency, Bharrat Jagdeo, President of Guyana.
- Busch, J. (2009). "Presidential Brief #1." Prepared for His Excellency, Bharrat Jagdeo, President of Guyana.
- Busch, J. and Bruner, A. (2009). "An investment strategy for the Tropical Forest Account in Global Environment Facility 5." 19pp.
- Busch, J. and da Fonseca, G.A.B. (2007). "An investment strategy for the Global Environment Facility Tropical Forest Account." 19pp.
- Busch, J. (2007). "Avoided deforestation, the Kyoto Protocol, and low deforestation countries: Recommendations for Conservation International." 14pp.
- Kraus, K., Trautwein, B. and Busch, J. (2006). "Public comment on economic impact of critical habitat designation for the Red-Legged Frog in 23 California Counties." Environmental Defense Center, Santa Barbara, CA, 25pp.
- Kraus, K. and Busch, J. (2004). "Public comment on draft economic analysis of critical habitat designation for the California Tiger Salamander." Environmental Defense Center, Santa Barbara, CA, 16pp.

Software

- Eastman, J. R. (2014). TerrSet: Geospatial Software for Monitoring and Modeling the Earth System. Worcester, Mass.: Clark University. (unnamed contributor)
- Busch, J., Lubowski, R., Hewson, J., Godoy, F. and Mendoza, E. (2011). Open Source Impacts of REDD+ Incentives Spreadsheet – Peru (OSIRIS-Peru). Version 1.0.
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- Andersen, L. E., Busch, J., Ledezma, J. C., Curran, E., Mayorga, J. and Ruiz Junco, P. (2011). Conservation Incentives Spreadsheet – Bolivia (CISS-Bolivia). Version 2.1.
- Busch, J., Godoy, F. and Rasolohery, A. (2011). Open Source Impacts of REDD+ Incentives Spreadsheet – Madagascar (OSIRIS-Madagascar). Beta.
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Language Manuals

Busch, J. and Gomez-Mira, C. (2002). *Mooré Made Simple: An Introductory Language Manual for Peace Corps Volunteers*. Peace Corps Burkina Faso, Ouagadougou, Burkina Faso, 63pp.

Busch, J. and Kang, A. (2001). *Peace Corps Burkina Faso Survival Phrasebook: Mooré*. Peace Corps Burkina Faso, Ouagadougou, Burkina Faso, 33pp.

Professional Blog Posts and Op-Eds

Conservation International Blog:

“A simple idea to ease conservation costs: transferring funds” June 2021 (with Bruno Vander Velde)

“Biodiversity payments can help communities fight climate change” November 2012

“Climate change increases costs of conserving biodiversity” April 2012

Earth Innovation Institute Blog:

“Joe Biden Offers \$20 Billion to Protect Amazon Forests” March 2020

“How Tropical States and Provinces can Tackle Deforestation and Fight Climate Change” Feb 2020 (with Oyut Amarjargal)

“In Many Countries, Natural Climate Solutions can be the Biggest Climate Solutions” January 2020

“Tropical Forests and Climate in 2019: Hopes Fulfilled, Hopes Dashed, Hopes Delayed” December 2019

“Using a Pre-Analysis Plan to Enhance Credibility of Research Findings” November 2019 (with Sebastian Bauhoff)

“Does Deforestation Increase Malaria Rates? Not in Africa, Surprisingly” November 2019 (with Sebastian Bauhoff)

“California Just Approved the Tropical Forest Standard—What Happens Next? October 2019 (with Dan Nepstad)

“In Wake of New IPCC Report, Time for California to Endorse Tropical Forest Standard” August 2019

“Ten Ways for the Next American President to Lead on Climate and Forests” July 2019 (with Dan Nepstad)

“Reforestation Can Help Reverse the Climate and Extinction Crises. It’s Cost-Effective Too” May 2019

“Stable Forests are an Under-Recognized Solution to Climate Change” May 2019

“California Should Package Deforestation-Free Procurement Act (AB-572) with Tropical Forest Standard” March 2019

“What to Hope for Every Month of 2019 for Tropical Forests and Climate Change” January 2019

“California’s Opportunity to Set the Standard for Tropical Forest Credits” October 2018

“Five Questions for Earth Innovation Institute’s New Chief Economist” October 2018

Center for Global Development Blog:

“Does Deforestation Increase Malaria Rates? Not in Africa, We’re Surprised to Find” March 2018 (with Sebastian Bauhoff)

“Why Forests? Why Now? New Developments for a New Year” January 2018 (with Frances Seymour)

“How Leaders Condemning Trump’s Paris Pullout Can Match Words with Deeds on Climate” June 2017

“Leaving the Paris Climate Agreement Would Be a Shameful Act of Self-Harm” May 2017

“As Green Climate Fund Considers Results-Based Payments for Forests, Two Lessons from Earlier Initiatives” Apr. 2017

“Trump’s Retrogressive Executive Order on Climate Change: Development Perspective in 3 Charts” Mar. 2017

“Five Ways to Share Climate’s Best Kept Secret This International Day of Forests” March 2017

“If the Trump Administration Abandons Climate, Will China Take Global Leadership?” December 2016

“China’s Eco-Compensation Programs for Improving Environmental Quality” December 2016

“What Does the Resurgence in Carbon Pricing Mean for Tropical Deforestation?” October 2016

“Grading the Airlines’ Climate Agreement: Historic Steps, Missed Opportunities” October 2016

“Airlines and Forests: A Match Made at Cruising Altitude” September 2016

“Affordable Climate Protection: Saving the Amazon Forest Cost Brazil Less Than Rio Olympics” August 2016

“Uttar Pradesh Just Planted 49 Million Trees. Shouldn’t They Get More Than a Guinness Record?” July 2016

“As ‘Clean Coal’ Falters, Remember Safe, Cheap, Carbon-Capture Already Exists” July 2016

“Snakes or Ladders at the Carbon Fund?” June 2016

“World Leaders Signed the Climate Agreement on Earth Day. How Will They Deliver?” April 2016

“2015 Was a Turning Point Year for Climate Action” December 2015

“The Paris Climate Agreement Feels Historic but SDGs Don’t. Why?” December 2015 (with Charles Kenny)

“High Marks for the Paris Climate Agreement” December 2015

“Let Countries Trade Carbon” December 2015

“Postcards from the Paris Climate Summit” December 2015
“At Paris Summit, Make Forests Part of the Climate Solution” November 2015
“California Looks to the Forests: My Remarks to the California Air Resources Board” October 2015
“Eight Reasons for California to Lead on Climate and Forests” October 2015
“Seven Storylines in Last Week’s Climate Pledges” October 2015
“Three Reasons the FAO’s New Forest Numbers Don’t Add Up” September 2015
“The Last Guinea Worm: Carter, Kennedy, and a Victory for Person-to-Person Development” September 2015
“Tropical Forests Equal to the Size of India Will Be Lost by 2050, Unless We Act” August 2015
“Climate Change and Development in Three Charts” August 2015
“North Pole Overflight: Five Snapshots from a Vanishing World” August 2015
“CGD’s Climate Work Wins Recognition” June 2015
“Guess Who’s (Not) Coming to Dinner: Unrepresentative Statistics of White House State Dinners” June 2015
“Pope Francis: Climate Change Hurts the Poor Most” June 2015
“The G-7 Commits to Decarbonization” June 2015
“Voluntary Climate Pledges Aren’t Effective, Efficient, or Equitable. Paris Can Succeed Anyway.” May 2015
“Extending Indonesia’s Forest-Clearing Moratorium Helps the Climate. Expanding It Helps More.” May 2015
“7 Hopeful Climate Stories from around the Globe” April 2015
“SDG Goal Thirteen on Climate: A Pound of Cure, Sure, But Where’s the Ounce of Prevention?” April 2015
“Disruptive Data Disputes Documentation of Declining Deforestation” March 2015
“India’s Big Climate Move” March 2015
“Is Indonesia’s Flagship Forest Policy Lowering Emissions by Enough to Meet Climate Targets?” Jan. 2015
“12 Reasons for Climate Optimism This Holiday Season” December 2014
“Unsung Climate Hero: Forest Monitoring Technology” December 2014
“The Baker’s Dozen: A 748-Year-Old Solution for Climate Offsets” November 2014
“Tropical Forests Offer up to 24-30 Percent of Potential Climate Mitigation” November 2014
“Nobel Laureate Jean Tirole’s Five-Step Plan to Fix the Climate” November 2014
“A Tale of Two Rainstorms: The Science of Tropical Forests” October 2014
“Why Quantifying the Value of Tropical Forests Matters for Development” October 2014
“Dream Come True: CGD Forest Work in the NYT” September 2014 (with Frances Seymour)
“Indigenous Peoples Prevent Deforestation. What About Other Local Communities?” August 2014
“Ozymandias” May 2014
“This Earth Day, Don’t Plant a Tree. (Save a Forest)” April 2014
“Halting and Reversing Deforestation Critical to 2°C Climate Target” April 2014
“How Well are Performance-Based Payments Working? Lessons from Guyana” April 2014 (with Nancy Birdsall)
“Climate Change is Regressive” April 2014
“The Data Revolution Hits Forests” February 2014
“Carbon Fund Pioneers Multilateral Payments for Forest Carbon in Bottom-Up Climate World” December 2013
“Warsaw Delights on Tropical Forests” November 2013
“Twelve Takeaways from the IPCC Report” September 2013

Springer Nature Sustainability Community ‘Behind the Paper’:
“Ecological Fiscal Transfers” June 2021

jonahbusch.com:

“Less Than \$30 Billion to Prevent Another Pandemic” July 2020

Economic Times (India):

“Keep planting money plants” September 2019 (op-ed with Avani Kapur, Anit Mukherjee)

CalMatters:

“How California can fight climate change by helping to save tropical forests” August 2019 (op-ed)

Mongabay.com:

“California’s Big Climate Change Opportunity: Tropical Forests” August 2018 (with Dan Nepstad, Chris Field)

UN-REDD:

“India’s New Domestic Finance Instrument for Forests and Climate” January 2018

East Asia Forum:

“Is Indonesia’s fight against forest fires falling short?” November 2017 (with Armida Alisjahbana)

World Resources Institute Blog:

“Forests deserve more respect when it comes to climate action” November 2017 (with Frances Seymour)

“Forests and SDGs: Taking a Second Look” September 2017 (with Frances Seymour)

Latin America Advisor, Inter-American Dialogue:

“Which Sustainable Development Goals are Most Crucial?” May 2017 (with Nancy Birdsall)

Finance and Development Magazine, International Monetary Fund:

“Forests for Growth” February 2017 (with Frances Seymour)

Global Forest Watch Blog:

“Forest Monitoring and Climate Change: The Science, Economics and Politics” February 2017

The Guardian:

“Quiz: how much do you know about tropical forests?” January 2017

“The 10 sustainable development goals that rainforests can help us achieve” January 2017

ForestsClimateChange.org, Center for International Forestry Research (CIFOR):

“Many good reasons for governments to pay for forest carbon.” February 2014

Institute for Advanced Development Studies (INESAD) Blog:

“Making people more prosperous with forests than without” September 2013

Jakarta Post:

“Climate change, biodiversity and REDD+” 11 November 2010 (op-ed with Celia Harvey, Muhammad Farid)

Copenhagen Insider Expert Blog, *National Journal*:

“Path on climate runs through forest—Guyana and Norway lead the way” December 2009

“Forests are a double-edged shield” December 2009

“High standards for REDD+” December 2009

Grants

- “Unlocking Financial Support for REDD+” Norwegian Agency for International Development, \$2,900,000, 2016*
- “Mexico deforestation vulnerability analysis and capacity building,” United States Agency for International Development, \$50,000, 2013*
- “Aboveground Carbon Stock Mapping in Support of Low Emissions Development Strategies,” David and Lucile Packard Foundation, \$80,000, 2012**
- “Review to support the post-Nagoya development of biodiversity safeguards and indicators for international forestry agreements,” U.K. Department for Environment, Food and Rural Affairs (DEFRA), \$15,000, 2011**
- “Building vertically-integrated national to local REDD+ readiness in Peru, Ecuador, Indonesia and Madagascar,” Norwegian Agency for Development Cooperation, \$3,000,000, 2010**
- “People need nature to thrive,” Norwegian Agency for Development Cooperation, \$440,000, 2009**
- “Modelling the implications of different REDD reference level scenarios on carbon effectiveness and inter-country distribution,” David and Lucile Packard Foundation, \$15,000, 2009*
- “Collaborative Modeling Initiative on the Economics of REDD,” Gordon and Betty Moore Foundation, \$80,000, 2008**
- “Do surfers respond to water quality risk advisories?” Associated Students Shoreline Preservation Fund, University of California Santa Barbara, \$1,000, 2008*
- “Rate of return on investment in yellow eyed penguin conservation,” East Asia and Pacific Summer Institute, National Science Foundation, \$8,500, 2007*

*Principal investigator **Co-principal investigator

Honors and Awards

- Featured scientist, “How Can I Help? Working in the Earth Sciences,” *Imagine*, Johns Hopkins Center for Talented Youth, 2018
- Lead-authored paper selected among “Highlights of 2017,” *Environmental Research Letters*, 2018
- Co-authored paper selected among “Highlights of 2015,” *Environmental Research Letters*, 2016
- “Head in the Sky” award, Conservation International Chairman’s Council, 2010
- Contestant, *Jeopardy!*, 2010
- Expert, Copenhagen Insider Blog, *National Journal*, 2009
- “Cool Scientist You Should Know,” Dive Into Your Imagination, 2008
- “Most Interesting Paper Published in Biological Sciences,” Faculty of 1000 Biology, 2008
- East Asia & Pacific Summer Institute, National Science Foundation, 2007
- Distinction, Ph.D. Preliminary Exam in Microeconomics, University of California, Santa Barbara, 2004
- IGERT Economics and Environmental Science Traineeship, National Science Foundation, 2003
- Chancellor’s Fellowship, University of California, Santa Barbara, 2003
- Marie S. Wilcox Scholarship for Outstanding Math Achievement, Indiana University, 2000
- Phi Beta Kappa, 1999
- Overseas Study, University of Wollongong, Wollongong, Australia, 1999

Academic Service

Editorial board member: *Conservation Letters*

Guest editor: *Proceedings of the National Academy of Sciences*

Ad-hoc referee: *American Journal of Agricultural Economics; Biodiversity; Biodiversity and Conservation; Biological Conservation; Bulletin of Indonesian Economic Studies; Carbon Management; Climatic Change; Conservation Letters; Current Biology; Ecological Applications; Ecological Economics; Environment and Development Economics; Environmental and Resource Economics; Environmental Management; Environmental Research Communications; Environmental Research Letters; Environmental Science and Policy; Forest Policy and Economics; Forests; Frontiers in Ecology and the Environment; Frontiers in Forests and Global Change; Global Change Biology; Global Environmental Change; International Forestry Review; Journal of the Association of Environmental and Resource Economists; Journal of Environmental Economics and Management; Journal of Environmental Economics and Policy; Journal of Environmental Management; Journal of Environmental Planning and Management; Journal of Forest Economics; Land Economics; Mitigation and Adaptation of Strategies for Global Change; Nature Climate Change; Nature Communications; Nature Sustainability; Ocean and Coastal Management; Oxford Encyclopedia of Environmental Economics; Philosophical Transactions of the Royal Society B; PLoS ONE; Proceedings of the National Academy of Sciences; Remote Sensing; Resource and Energy Economics; Review of Environmental Economics and Policy; SoftwareX; World Development*

Reviewer: Intergovernmental Panel on Climate Change AR5, AR6; Agricultural and Applied Economics Association Conference; Association of Environmental and Resource Economists Conference

External dissertation committee member: R. Simorangkir, Georgia State University, Atlanta, GA

M.B. Gurung, Lincoln University, Christchurch, New Zealand

International Experience

Work and travel:	Africa:	30 months in 18 countries
	Asia:	24 months in 18 countries
	Australia/Pacific:	9 months in 2 countries
	Europe:	8 months in 22 countries
	Latin America:	8 months in 16 countries

Languages:	English: native speaker
	French: fluent
	Mooré (West Africa): formerly fluent
	Spanish: conversational
	Indonesian: conversational
	Chinese (Mandarin): advanced intermediate (HSK Level 4 passed 15 October 2017)

Conference Presentations

2021

London School of Economics/University of California, San Diego (virtual)

Indian Institute of Forest Management, Bhopal, India (virtual)

Center for Regional and Information Studies/Indonesia Budget Center, Jakarta, Indonesia (virtual)

2020

World Bank-Indonesia (virtual)

Forests & Livelihoods: Assessment, Research, and Engagement (FLARE) (via Twitter)

International Workshop on Ecological Fiscal Transfers, Technische Universität Dresden (virtual)

2019

Berkeley Initiative for Transparency in the Social Sciences, University of California, Berkeley, CA

Green Climate Fund, Songdo, Korea

World Forestry Center, Portland, OR

Forests & Livelihoods: Assessment, Research, and Engagement (FLARE), Ann Arbor, MI

2018

North American Congress of Conservation Biology, Toronto, Canada

World Congress of Environmental and Resource Economists, Gothenberg, Sweden

European Congress on Conservation Biology, Jyväskylä, Finland

Ceres Investor Network, New York, NY

2017

Harvard Law School Law and International Development Society Symposium, Cambridge, MA

2016

National Development and Reform Commission, Kunming, China

Okinawa Institute of Science and Technology, Okinawa, Japan

2015

Indonesia Pavilion Event, UNFCCC, Paris, France

European Union Pavilion Event, UNFCCC, Paris, France

Annual Conference on Land and Poverty, World Bank, Washington, DC

Resources for the Future, Annapolis, MD

2014

Center for Global Development Side Event, UNFCCC, Lima, Peru (x2)

World Resources Institute-Chatham House, Washington, DC

National Academy of Sciences, Washington, DC (moderator)

Center for Global Development, Washington, DC

National Conference and Global Forum on Science, Policy and the Environment, Washington, DC

2013

International Workshop on Evaluating Forest Conservation Initiatives, Barcelona, Spain

Intergovernmental Platform on Biodiversity and Ecosystem Services, Washington, DC

Center for Global Development, Washington, DC

International Congress for Conservation Biology, Baltimore, MD

World Resources Institute, Jakarta, Indonesia

Forest Carbon Partnership Facility, World Bank, Washington, DC

World Wildlife Fund, Washington, DC

International Society of Tropical Foresters, Yale University

2012

Government of Indonesia Pavilion Event, UNFCCC COP 18, Doha, Qatar
World Resources Institute Side Event, UNFCCC COP 18, Doha, Qatar
Yachats Institute, Yachats, OR
Conservation International REDD+ Workshop, Antananarivo, Madagascar (videoconference)
Association of Environmental and Resource Economists, Asheville, NC
International Workshop on Forestry and Green Economy, State Forestry Administration, Beijing, China
International Society of Tropical Foresters, North Carolina State University, Raleigh, NC
Seminar on REDD+ and Biodiversity, Conservation International Japan, Tokyo, Japan
International Technical Seminar on REDD+, University of Waseda, Tokyo, Japan (x2 incl. policy panel)

2011

Government of Indonesia Pavilion Event, UNFCCC COP 17, Durban, South Africa
Woods Hole Research Center Side Event, UNFCCC COP 17, Durban, South Africa
REDD+ Partnership, Durban, South Africa (moderator)
UNFCCC SBSTA Expert Workshop on Reference Levels, Bonn, Germany (session rapporteur)
Forest Carbon Partnership Facility, World Bank, Washington, DC (session moderator)
Forestry and Forest Products Research Institute, Tsukuba, Japan (poster)
Agricultural and Applied Economics Association, Pittsburgh, PA
Association of Environmental and Resource Economists, Seattle, WA
Carbon Offsets in Climate Policy, Cornell University, Ithaca, NY (x2 incl. policy panel)
Policy Mechanisms for Ecosystem Services Delivery, London School of Economics, London, UK (keynote)

2010

Resources for the Future/IETA Side Event, UNFCCC COP 16, Cancun, Mexico.
Biodiversity Economics for Conservation (BIOECON), Venice, Italy (x2 incl. plenary panel)
Wildlife Conservation Society Side Event, UNFCCC SBSTA 32, Bonn, Germany
World Agroforestry Centre (ICRAF) Conference on Reducing Emissions from All Land Use, Lima, Peru
International Society of Tropical Foresters, Yale University, New Haven, CT

2009

GEF Finance Learning Event, CIFOR Forest Day 3, UNFCCC COP 15, Copenhagen, Denmark
9th World Wilderness Congress (WILD9), Merida, Mexico (x2 incl. session chair)
UCS Side Event, UNFCCC AWG-LCA Intersessional, Barcelona, Spain
Conservation International Side Event, UNFCCC AWG-LCA Intersessional, Barcelona, Spain
11th Occasional Workshop on Environmental and Resource Economics, UCSB, Santa Barbara, CA
Biodiversity and Economics for Conservation (BIOECON), Venice, Italy (session chair)
Woods Hole Research Center Side Event, UNFCCC SBSTA 30, Bonn, Germany
International Association of Research Universities Scientific Conference on Climate Change, Copenhagen, Denmark

2008

Global Canopy Programme Side Event, UNFCCC COP 14, Poznan, Poland
Wentworth Group of Concerned Scientists Side Event, UNFCCC COP 14, Poznan, Poland
Forest Carbon Partnership Facility, World Bank, Washington, DC
Biodiversity and Economics for Conservation (BIOECON), Cambridge, UK
10th Occasional Workshop on Environmental and Resource Economics, UCSB, Santa Barbara, CA

2007

Biodiversity and Economics for Conservation (BIOECON), Cambridge, UK

2006

Integrative Graduate Education and Research Traineeship Program (IGERT), NSF, Arlington, VA (poster)

Invited Lectures

2021

University of California, Santa Barbara, CA (scheduled)

Center for Regional and Information Studies/Indonesia Budget Center, Jakarta, Indonesia (virtual)

Conservation International, Arlington, VA (virtual)

2020

Research Triangle Institute, Research Triangle Park, NC (virtual)

North Carolina State University, Raleigh, NC (virtual)

Boston University, Boston, MA

2019

Purdue University, West Lafayette, IN

The Nature Conservancy, Arlington, VA (webinar)

University of California, Berkeley, CA

2018

American University, Washington, DC

Northern Arizona University, Flagstaff, AZ

2017

Southern Methodist University, Dallas, TX

Australian National University, Canberra, Australia (x3)

Universitas Padjajaran, Bandung, Indonesia

Green Climate Fund, Songdo, Korea

Zhejiang University, Hangzhou, China

World Wildlife Fund, Washington, DC (webinar)

Center for Effective Global Action, University of California, Berkeley, CA

California Air Resources Board, Sacramento, CA

University of California, Davis, CA

The Nature Conservancy, San Francisco, CA

2016

Center for Global Development, Washington, DC

Young Professionals in Foreign Policy, Washington, DC

Center for Effective Global Action, University of California, Berkeley, CA

UBS, Zurich, Switzerland (webinar)

Masters of Development Program, University of California, Berkeley, CA

Carnegie Institution for Science, Palo Alto, CA

Earth Innovation Institute, San Francisco, CA

2015

Pacific Council on International Policy, Los Angeles, CA (teleconference)

Center for American Progress, Jakarta, Indonesia

Young Professionals in Foreign Policy, Washington, DC

2014

Johns Hopkins School of Advanced International Studies, Washington, DC

World Wildlife Fund, Washington, DC (webinar)

World Wildlife Fund, Washington, DC (webinar)

2013

Johns Hopkins School of Advanced International Studies (SAIS), Washington, DC
Monterey Institute of International Studies, Monterey, CA (videoconference)
San Martin Province REDD+ Roundtable, Moyobamba, Peru
Ministry of Environment (MINAM), Lima, Peru
Center for Global Development, Washington, DC
Conservation International, Arlington, VA
McGill University, Montreal, Canada
Development Research Group, World Bank, Washington, DC
National Zoo, Washington, DC

2012

Ministry of Environment, Bogota, Colombia
Duke University, Durham, NC
Stockholm Environment Institute, Seattle, WA (videoconference)
University of Virginia, Charlottesville, VA (x2)
Woods Hole Research Center, Falmouth, MA
EcoAgriculture Partners, Food and Agriculture Organization (FAO), Washington, DC
Joint Research Seminar on Environment and Energy, World Bank-IMF, Washington, DC

2011

American University, Washington, DC
Conservation Strategy Fund (CSF), Stanford University, Palo Alto, CA (x2)
Rensselaer Polytechnic Institute (RPI), Troy, NY
Princeton University, Princeton, NJ
Ministry of Physical Planning, Land and Forest Management, Paramaribo, Suriname (x2)
Inter-American Development Bank (IADB), Washington, DC
International Climate and Forest Initiative (ICFI), Ministry of the Environment, Oslo, Norway
Federal Ministry for Economic Cooperation and Development (BMZ), Bonn, Germany
CI-Bolivia/London School of Economics, La Paz, Bolivia
San Martin Province REDD+ Roundtable, Moyobamba, Peru (x2)
Inter-American Development Bank (IADB), Washington, DC
Purdue University, West Lafayette, IN
United States Agency for International Development (USAID), Washington, DC
Resources for the Future (RFF), Washington, DC
Conservation International, Arasha, Ecuador (x2)

2010

Forest Carbon Partnership Facility, World Bank, Washington, DC
Cornell University, Ithaca, NY
National Council on Climate Change (DNPI), Jakarta, Indonesia
Ministry of Finance, Jakarta, Indonesia
Ministry of Forestry, Jakarta, Indonesia
Indonesia Policy and Modeling Forum on REDD+, Jakarta, Indonesia
Ecosystem Services Training Day, Venice, Italy
Conservation Strategy Fund (CSF), Stanford University, Palo Alto, CA (x2)
Monterey Institute of International Studies (MIIS), Monterey, CA
California Air Resources Board (CARB), Sacramento, CA (web conference)
Montpellier SupAgro, Montpellier, France
Basque Centre for Climate Change (BC3), Bilbao, Spain
Ministry of Environment (MINAM), Lima, Peru
National Park Service (SERNANP), Lima, Peru
San Martin Province REDD+ Roundtable, Tarapoto, Peru

University of Florida, Gainesville, FL (x2)
National Council on Climate Change (DNPI), Jakarta, Indonesia
OSIRIS-Indonesia Core Modeling Retreat, Jakarta, Indonesia
OSIRIS-Indonesia Policy Advisory Meeting, Bogor, Indonesia
University of California, Davis, Davis, CA (videoconference)

2009

OSIRIS training workshop, Jakarta, Indonesia (x3)
Conservation Strategy Fund (CSF), Stanford University, Palo Alto, CA (x3)
Electric Power Research Institute (EPRI), Washington, DC
World Bank Forest Carbon Partnership Facility (FCPF), Washington, DC
Danish Ministry of Climate and Energy, Copenhagen, Denmark
Helmholtz-Zentrum für Umweltforschung (UFZ), Leipzig, Germany

2008

Conservation International, Antananarivo, Madagascar
Santa Barbara Surfrider Foundation, Santa Barbara, CA
Isla Vista Surfrider Foundation, Isla Vista, CA
Environmental Protection Agency, Washington, DC