

Juan H. Declet-Barreto

Natural Resources Defense Council
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PROFESSIONAL EXPERIENCE

Climate Health/Science Center Fellow, 2014 – Present

Natural Resources Defense Council, Washington, DC

Tasks: Conduct social and environmental science research in support of climate and clean air, health, and environmental justice programs at environmental advocacy organization; design and deploy GIS-based assessment of climate change impacts on human health; conduct research on social and ecological outcomes of Urban Heat Island mitigation evaluations in partnership with environmental justice organizations.

GIS Specialist, 2011-2013

City of Mesa, AZ

Tasks: Supported planning & zoning business processes by creating maps for zoning and Board of Adjustment hearings; prepared maps of socio-demographics in support of neighborhood and housing development plans; created cartographic and other information products in support of City Council annual retreat.

Graduate Research Assistant, 2009-2013

School of Human Evolution and Social Change, Arizona State University

Funded Research: *CNH Collaborative Research: Urban Vulnerability to Climate Change* (National Science Foundation Grant GEO-0816168), \$1,439,610.

Tasks: Generated Land Use/Land Cover neighborhood-scale classification using Object-Based Image Analysis (OBIA) from high-resolution imagery in Definiens software; conducted statistical (SPSS) and geospatial (ArcGIS) analysis of socio-economic status and biophysical environment data for climate change vulnerability research manuscripts.

Graduate Research Assistant, 2004-2006

School of Geographical Sciences, Arizona State University

Funded Research: *The First Step Towards an Integrated Arizona/Sonora Transborder GIS: Land Use and Land Cover Data Development* (SCERP Award EIR-5-04)

Tasks: Developed a Land Use/Land Cover classification of Arizona-Sonora border cities from satellite and aerial imagery; developed geodatabase of urban infrastructure, mortality, and Mexican census data for infant health-mortality study.

Ambient Air Emissions Inventory Specialist

Arizona Department of Environmental Quality, Phoenix, AZ

2007-2011

Tasks: Development of ambient air emissions inventories from geospatial and tabular data in support of air quality regulations established by the EPA and the Clean Air Act. Design and implementation of GIS-based field data collection tools integrating mobile GIS and GPS technologies to assist air emissions

sources permitting and compliance enforcement. Liaison between U.S. and Mexican local and regional authorities to obtain air quality data from public and private sectors for air quality studies.

EDUCATION

Ph. D. in Environmental Social Sciences

School of Human Evolution and Social Change, Arizona State University, Fall 2013

Committee: Sharon Harlan (co-Chair), Bob Bolin (co-Chair), Christopher Boone, Paul Hirt

Thesis: *A socio-ecological understanding of extreme heat vulnerability in Maricopa County, Arizona*

Master of Arts in Geography

School of Geographical Sciences, Arizona State University, 2006

Committee: Eric Keys (Chair), Francisco Lara-Valencia, Daniel Arreola, Bob Bolin

Thesis: *Vulnerability to technological hazards in Mexico-United States border cities: the case of Ambos Nogales*

Bachelor of Science in Geography

School of Geographical Sciences, Arizona State University, 2004

Certificate in Geographic Information Systems

School of Geographical Sciences, Arizona State University, 2004

RESEARCH INTERESTS

Human health impacts of climate change; geography of hazards production; urban heat island mitigation; environmental justice of parks/green spaces and climate change; human health impacts of carbon and co-pollutant policies

TEACHING EXPERIENCE

Adjunct Faculty. Delta State University. Fall 2015. Courses designed and taught: GIS 470 – Programming for GIS.

HONORS AND AWARDS

Gilbert F. White Hazards Dissertation Award. Presented by the Hazards, Risks, and Disasters Specialty Group at the Association of American Geographers Annual Meeting in Tampa, Florida. April 9 2014.

Air Quality Constellation Award: *GPS/GIS Mapping of Air Quality Field Inspection Sites Team*. Presented at the ADEQ Air Quality Division Annual Awards Ceremony, May 8, 2008.

Recipient of the 2005 *Tony Gonzales Scholarship for GIS Achievement* by the Geospatial Information Technology Association (GITA), in Phoenix, Arizona.

PUBLICATIONS

Journal Articles (peer-reviewed)

Jenerette, G. D., Harlan, S. L., Buyantuev, A., Stefanov, W. L., **Declet-Barreto, J.**, Ruddell, B. L., ... Li, X. (2015). Micro-scale urban surface temperatures are related to land-cover features and residential heat related health impacts in Phoenix, AZ USA. *Landscape Ecology*. 10.1007/s10980-015-0284-3

Declet-Barreto, J., A. J. Brazel, C. A. Martin, W. T. L. Chow, and S. L. Harlan. 2013. Creating the Park Cool Island in an Inner-City Neighborhood: Heat Mitigation Strategy for Phoenix, AZ. *Urban Ecosystems*.

Harlan SL, **Declet-Barreto JH**, Stefanov WL, Petitti DB. Neighborhood Effects on Heat Deaths: Social and Environmental Predictors of Vulnerability in Maricopa County, Arizona. *Environ Health Perspect* 121 (2):197-204.

Bolin, B., **Declet Barreto, J.**, Hegmon, M., Meirotto, L., York, A. 2013. Double Exposure in the Sunbelt: The Sociospatial Distribution of Vulnerability in Phoenix, Arizona. In *Urbanization and Sustainability*, eds C.G. Boone, M. Fragkias, (3):159-178. Springer: Netherlands.

Lara Valencia, F., **J. Declet**, and E.Keys. 2008. Spatial Equity and Technological Hazards Along Cross-Border Trade Corridors: the Case of Ambos Nogales. *Journal of Borderland Studies* 23(2):1-18.

Muñoz-Erickson, T. A. and **J. Declet Barreto, J.** 2009. Puerto Rican Studies. *Latinos and Latinas in US History and Culture: An Encyclopedia*. Eds. Carmen Lugo-Lugo and David Leonard. M.E. Sharpe.

Declet Barreto, J. and T. A. Muñoz-Erickson. 2009. The National Puerto Rican Coalition. *Latinos and Latinas in US History and Culture: An Encyclopedia*. Eds. Carmen Lugo-Lugo and David Leonard. M.E. Sharpe.

Reports

Declet-Barreto, J. & S. Alcorn. 2015. *Sneezing & Wheezing: How Climate Change Could Increase Ragweed Allergies, Air Pollution, and Asthma. 2015 update*. Natural Resources Defense Council report <http://www.nrdc.org/globalwarming/sneezing/files/sneezing-report-2015.pdf>. Accessed on 13 May, 2015.

Works in Progress

Declet-Barreto, J., K. Knowlton, G.D. Jenerette, & A. Buyantuev. Effects of urban vegetation on mitigating exposure of vulnerable populations to excessive heat in Cleveland, Ohio. (manuscript in review).

CONFERENCE PRESENTATIONS

Urban Heat Island Reduction Strategies in Neighborhoods in Northern Manhattan, New York City
Juan Declet-Barreto, K. Knowlton, A. Huang, J. White-Newsome, C. D. Corbin-Mark, and O. Dotson-Newman. American Meteorological Society 2016 Annual Meeting, 13 January, 2016. New Orleans, LA.

A socio-spatial vulnerability model of the Urban Heat Island: exposure, sensitivity and health impacts of high temperatures. **Declet-Barreto, J.**, S. Harlan, D. Petitti, and B. Rudell. Presentation delivered at the International Congress on Biometeorology, September 29, 2014. Cleveland, OH.

Heat vulnerability in Phoenix, Arizona: Health outcomes, sensitivity, exposure, and coping capacity at the neighborhood scale. **Declet-Barreto, J.**, S. Harlan, D. Petitti, and B. Rudell. Poster presented at the Fifth Biannual Colloquium on Climate and Health. 9-12 July 2013. National Center for Atmospheric Research Foothills Laboratory, Boulder, CO.

Creating the Park Cool Island: Heat Mitigation Strategy for Phoenix, AZ. **Declet-Barreto, J.** Featured presentation at the Central Arizona-Phoenix Long-Term Ecological Research (CAP-LTER) project, Fifteenth Annual Poster Symposium and All Scientists Meeting, 11 January 2013. Scottsdale, Arizona.

The historical-geographical production of the urban riskscape of Phoenix, Arizona. **Declet-Barreto, J.** 13 April 2012. Dimensions of Political Ecology Conference on Nature/Society, University of Kentucky, Lexington.

Suburbanization of Vulnerability: Environmental Justice and Resource Insecurity in Phoenix, Arizona. B. Bolin, L. Meierotto, A. York, M. Hegmon, J. Declet-Barreto. Association of American Geographers 2011 Annual Meeting. April 12-16, 2011. Seattle, Washington.

Tree naturalization as a means of provisioning ecosystem services in an arid ecosystem. Martin, C., S. Harlan and **J. Declet-Barreto**. 2011. Poster presented at the 7-12 August 2011 96th Annual Meeting of the Ecological Society of America, Austin, TX.

Climate Change in an Urban Desert: Examining the Role of Vegetation in Local Temperature Variability in Phoenix, AZ. Ruddell, D., **J. Declet-Barreto**, S. L. Harlan, & S. Grossman-Clarke. Presented at the LTER Network All Scientists Meeting, Estes Park, CO September 2009.

Geospatial and Remote Sensing Technologies for Air Quality Improvement in Arizona. **Declet-Barreto, J.** Lecture delivered at the Third Annual Environmental Science Symposium, February 20, 2009. Delta State University, Cleveland, Mississippi.

Opportunities and challenges to linking science and policy in the Luquillo LTER: Preliminary findings on stakeholder perceptions of water governance and sustainability. Muñoz-Erickson, T.A., K. Larson and **J. Declet**. 2008. Poster presented at the 10 January 2008 10th Annual CAP LTER Poster Symposium.

Western Arizona-Sonora Border Air Quality Study (WASBAQS). **Juan Declet-Barreto**. Poster presentation at the Arizona Geographic Information Council GIS Conference. August 8-10, 2007. Prescott, Arizona.

Environmental inequity in the Phoenix metropolitan statistical area, 1990 and 2000. **Juan Declet-Barreto**, B. Bolin and C. Boone. Poster presented on January 10, 2007, Ninth Annual Central-Arizona Phoenix Long-Term Ecological Research (CAP LTER) Poster Symposium.
http://caplter.asu.edu/docs/symposia/symp2007/Declet_et_al.pdf

The First Step Towards An Integrated Arizona/Sonora Transborder GIS: Land Use And Land Cover Data Development. Jana Hutchins, E. Keys, C. Lukinbeal, R. Aspinall, **J. Declet-Barreto**, G. Judkins, and D. Nelson. Border Institute VIII, May 22-24, 2006. Río Rico, Arizona.

Spatial Equity and Technological Hazard in Border Trade Corridors: An Exploratory Analysis of Ambos Nogales. 2006. **Juan Declet Barreto**. Western Social Science Association 48th Annual Conference. April 19-22, Phoenix, Arizona.

Management of Shared Water Resources along the United States-México Border: the Case of Ambos Nogales. **Juan Declet**, F. Lara-Valencia, E. Keys. Association of American Geographers 2006 Annual Meeting. March 7-11, 2006. Chicago, Illinois.

Indicadores de vulnerabilidad social en Nogales, Sonora. (Social vulnerability indicators in Nogales, Sonora). **Juan Declet**, F. Lara Valencia, and E. Keys. Conference of Latin Americanist Geographers. October 26-28, 2005. Morelia, Michoacán, México.

FUNDED GRANTS

“Reducing Urban Heat Island Vulnerability: Targeted Interventions to Enhance the Environmental Justice Community’s Climate Resiliency”. Natural Resources Defense Council President’s Opportunity Fund grant, \$50,000.

“Assessment of neighborhood and household adaptive capacity to heat-related vulnerability in Maricopa County, Arizona”. Central Arizona-Phoenix Long-Term Ecological Research (CAP-LTER) Graduate Grant, Arizona State University, \$4,000. 2013.

“Estimation of Effects of Urban Heat Island Mitigation Policies on Extreme Heat Vulnerability in Cleveland, Ohio”. Juan Declet-Barreto & Kim Knowlton. Natural Resources Defense Council Science Center grant, \$6,450. 2014.

SERVICE

Professional Service

“Climate change and Public Health”. **Declet-Barreto, J.** Health leaders Fellowship program webinar. Ecology Center of Ann Arbor. April 9, 2015.

“*Global Challenges, Local Solutions: Climate Change and Environmental Sustainability*”. **Declet-Barreto, J.** Panelist. Foreign Fulbright Enrichment Seminar. 15 February 2013, Phoenix, Arizona.

GIS Workshop Instructor. *Border Workshop on Sustainable Urban Planning*. Summer 2009. Instituto Municipal de Investigación y Planeación de Nogales, Sonora (IMIP-Nogales).

Education Session Presenter. *Mitigating urban heat islands by predicting impacts of urban parks/open space*. **Declet, J.**, W. T. Chow and T. L. Halperin. 28 September-1 October 2012. American Society of Landscape Architects Annual Meeting and Expo, Phoenix, Arizona.

Community Service

Environmental Science Advisor and Board Member. Sherman Park Neighborhood Community Association (Phoenix, Arizona), 2012-Present.

PROFESSIONAL MEMBERSHIPS

Association of American Geographers (AAG)

Geospatial Technology Information Association (GITA)

GreenLatinos (Coalition of Latino environmental professionals)

Climate Voices Science Speakers Network (<http://climatevoices.org/speakers/juan-declet-barreto/>)