

Paulo Arévalo

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Education

Boston University

PH.D. CANDIDATE IN GEOGRAPHY. DEPARTMENT OF EARTH AND ENVIRONMENT

Advisors: Pontus Olofsson, Curtis Woodcock.

Dissertation: "Tracking land change and carbon dynamics in the Colombian Amazon in support of greenhouse gas emission reduction programs."

Boston, MA

Sept. 2014 - Present

Pontificia Universidad Javeriana

B.Sc. IN ECOLOGY

Bogotá, Colombia

2004 - 2010

Experience

Boston University, Department of Earth and Environment

RESEARCH ASSISTANT

- Mapped multiple land categories and their conversions in the Colombian Amazon using Landsat time series.
- Calculated areas of change and their uncertainty using unbiased statistical estimators.
- Compared sampling methods and their relation with map accuracy to reduce uncertainty in area estimates.
- Managed and processed large volumes of data in a distributed computing environment.

Boston, MA

Sept. 2014 - Present

Pontificia Universidad Javeriana, Department of Ecology and Territory

RESEARCH ASSISTANT

- Processed several raster and vector datasets, and conducted spatial analyses to aid in the creation of a national map of ecosystems at risk (IUCN red List of Ecosystems).

Bogotá, Colombia

Nov. 2012 - Aug. 2014

National Institute of Hydrology, Meteorology and Environmental Studies IDEAM

CONTRACTOR - GIS SPECIALIST

- Modeled multiple future scenarios of deforestation in the Colombian Amazon.
- Contributed to the construction of a deforestation reference scenario for the Colombian Amazon in support of REDD+ activities.

Bogotá, Colombia

Jul. 2012 - Dec. 2013

National Institute for Scientific Research in the Amazon SINCHI

CONTRACTOR - GIS SPECIALIST

- Supported the modeling of deforestation projections in the Colombian Amazon through spatial analyses with vector and raster data.

Bogotá, Colombia

Sept. 2011 - Dec. 2011

National Coffee Research Center CENICAFÉ

CONTRACTOR - GIS SPECIALIST

- Conducted biological data analysis in support of the development of conservation strategies in coffee plantations.

Bogotá, Colombia

Sept. 2010 - Dec. 2010

Pontificia Universidad Javeriana

RESEARCH ASSISTANT

- Processed species occurrence data and other spatial datasets in support of the modeling of biological invasions in the Andean region.

Bogotá, Colombia

Sept. 2009 - Sept. 2010

National Institute for Scientific Research in the Amazon SINCHI

PAID INTERNSHIP

- Visually interpreted two Landsat images following the European CORINE Land Cover methodology adapted to Colombia.

Bogotá, Colombia

Aug. 2008 - Sept. 2008

Skills

Programming Python, R, bash scripting, JavaScript for Google Earth Engine
Software QGIS 3.x, ArcGIS Desktop 10.x, ENVI 5.x, IDRISI, GDAL Utilities, \LaTeX .
Languages Spanish (Native), English.

Teaching experience

Boston University, Department of Earth and Environment

TEACHING ASSISTANT

Course: Digital Image Processing.

Boston, MA

Jan. 2019 - May 2019

- Taught computer lab section of the course.

Other

INSTRUCTOR AND TECHNICAL SUPPORT

San José de Costa Rica,
Guatemala City, Bogotá, Iquitos

2017, 2018, 2019

- Conducted workshop on land cover change mapping and statistical area estimation.
- Provided technical support on mapping and estimation topics.

Pontificia Universidad Javeriana

ADJUNCT PROFESSOR

Course: Introduction to Geographic Information Systems and spatial analysis.

Bogotá, Colombia

Jan. 2012 - May 2014

- Taught full course to undergraduate and Master's degree students.
- Developed lectures and lab exercises conducted in proprietary and open source software (ArcGIS, QGIS).

Publications

Peer-reviewed

Arévalo, P., Olofsson, P., Woodcock, C., 2019 (In press). Continuous monitoring of land surface activities and post-disturbance dynamics from Landsat time series: a test methodology for REDD+ reporting. <https://doi.org/10.1016/j.rse.2019.01.013>. *Remote Sensing of Environment*.

Forthcoming

Olofsson, P., Arévalo, P., Espejo, A., Green, C., Lindquist, E., McRoberts, R.E., Sanz, M. J. 2019. Mitigating the effects of omission errors on area and area change estimates. *In review (Remote Sensing of Environment)*.

Stanimirova, R., Arévalo, P., Kaufmann, R., Maus, V., Lesiv, M., Havlik, P., Friedl, M., 2019. Sensitivity of global pasturelands to climate variation and human management. *In review (Earth's Future)*.

Arévalo, P., Woodcock, C., Olofsson, P., 2019. Spatial representation of errors in maps of land change. *In preparation*.

Non peer-reviewed

González, J., Arias, M., Cubillos, A., Arévalo, P. Modelación espacial de la deforestación en el bioma amazónico colombiano. In: Mas, J.-F. (ed.), 2017. Análisis y modelación de patrones y procesos de cambio. Universidad Nacional Autónoma de México, Ciudad de México. ISBN 978-607-02-9687-1.

Etter, A., Andrade, A., Amaya, P., Arévalo, P., 2015. Red list of terrestrial ecosystems of Colombia (In Spanish). In Gómez, M.F., Moreno, L.a., Andrade, G.i. y Rueda, C. (eds.). Biodiversidad 2015. Estado y tendencias de la biodiversidad continental de Colombia. Instituto Alexander von Humboldt. Bogotá, D.C., Colombia

Etter, A., Amaya, P., Arévalo, P., 2015. Forests, grasslands and páramos: fifty years of transformation in Colombian ecosystems (In Spanish). In Gómez, M.F., Moreno, L.a., Andrade, G.i. y Rueda, C. (eds.). Biodiversidad 2015. Estado y tendencias de la biodiversidad continental de Colombia. Instituto Alexander von Humboldt. Bogotá, D.C., Colombia

Presentations & Memberships

AGU Fall meeting 2018

POSTER PRESENTATION: "SPATIAL REPRESENTATION OF ERRORS IN REMOTE

SENSING-BASED MAPS: TEST APPLICATION TO MAPS OF LAND CATEGORY CONVERSIONS IN THE COLOMBIAN AMAZON."

Washington, DC

Dec. 2018

ForestSAT 2018

ORAL PRESENTATION: "IMPLICATIONS OF ERRORS IN REMOTE SENSING-BASED MAPS ON MODELS OF CARBON EMISSIONS."

College Park, MD

Oct. 2018

AGU Fall meeting 2017

POSTER PRESENTATION: "ESTIMATING UNBIASED LAND COVER CHANGE AREAS IN THE COLOMBIAN AMAZON USING LANDSAT TIME SERIES AND STATISTICAL INFERENCE METHODS."

New Orleans, LA

Dec. 2017

Pecora20 2017 conference

ORAL PRESENTATION: "USING TIME SERIES AND STATISTICAL INFERENCE METHODS TO ESTIMATE UNBIASED LAND COVER CHANGE AREAS IN THE COLOMBIAN AMAZON."

Sioux Falls, SD

Nov. 2017

AAG Annual meeting 2017

ORAL PRESENTATION: "OBTAINING UNBIASED AREA ESTIMATES OF LAND COVER CHANGE: APPLICATION IN THE COLOMBIAN AMAZON."

Boston, MA

Apr. 2017

Landsat Science Meeting

ORAL PRESENTATION: "OBTAINING UNBIASED AREA ESTIMATES FOR A MRV PROTOTYPE: APPLICATION IN THE COLOMBIAN AMAZON."

Boston, MA

Jan. 2017

AGU, AAG

STUDENT MEMBER.

2016 -

Research interests

- Time series of remote sensing data for land cover mapping and ecological applications.
- Estimation of carbon emissions from land cover change.
- Methods to improve change detection and mapping accuracy in the tropics.
- Spatial patterns of land cover change.