

# Paulo Arévalo

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## Education

### Boston University

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

Advisors: Pontus Olofsson, Curtis Woodcock.

Boston, MA

Sept. 2014 - Present

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

### Pontificia Universidad Javeriana

B.Sc. IN ECOLOGY

Advisor: Andrés Etter.

Bogotá, Colombia

2004 - 2010

## Experience

### Boston University, Department of Earth and Environment

RESEARCH ASSISTANT

Boston, MA

Sept. 2014 - Present

- 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.

### Pontificia Universidad Javeriana, Department of Ecology and Territory

RESEARCH ASSISTANT

Bogotá, Colombia

Nov. 2012 - Aug. 2014

- 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).

### National Institute of Hydrology, Meteorology and Environmental Studies IDEAM

CONTRACTOR - GIS SPECIALIST

Bogotá, Colombia

Jul. 2012 - Dec. 2013

- 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.

### National Institute for Scientific Research in the Amazon SINCHI

CONTRACTOR - GIS SPECIALIST

Bogotá, Colombia

Sept. 2011 - Dec. 2011

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

### National Coffee Research Center CENICAFÉ

CONTRACTOR - GIS SPECIALIST

Bogotá, Colombia

Sept. 2010 - Dec. 2010

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

### Pontificia Universidad Javeriana

RESEARCH ASSISTANT

Bogotá, Colombia

Sept. 2009 - Sept. 2010

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

### National Institute for Scientific Research in the Amazon SINCHI

PAID INTERNSHIP

Bogotá, Colombia

Aug. 2008 - Sept. 2008

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

## Skills

**Programming** Python, R, bash scripting.

**Software** QGIS 2.x, ArcGIS Desktop 10.x, ENVI 5.x, IDRISI, GDAL Utilities,  $\text{\LaTeX}$ .

**Languages** Spanish (Native), English.

## Teaching experience

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### 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).

## Presentations & Memberships

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### AGU Fall meeting 2017 (Upcoming)

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 (Upcoming)

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 -

## Publications

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### Forthcoming

Arévalo, P., Woodcock, C., Olofsson, P., 2017a. Continuous monitoring of land surface activities and post-disturbance dynamics from Landsat time series: a test methodology for REDD+ reporting. *In preparation*.

Arévalo, P., Woodcock, C., Olofsson, P., 2017b. Satellite data reveal a slow but steady advance of the deforestation frontier in the Colombian Amazon. *In preparation*.

Stanimirova, R., Arévalo, P., Kaufmann, R., Maus, V., Lesiv, M., Havlik, P., Friedl, M., 2017. Modeling Dynamics of South American Rangelands to Climate Variability and Human Impact. *In preparation*.

### Non peer-reviewed

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

## Research interests

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

## Referees

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### **Dr. Curtis Woodcock**

PROFESSOR, DEPARTMENT OF EARTH AND ENVIRONMENT  
Boston University. Boston MA 02215 USA  
curtis@bu.edu

### **Dr. Pontus Olofsson**

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Boston University. Boston MA 02215 USA  
olofsson@bu.edu

### **Dr. Andrés Etter**

PROFESSOR, DEPARTMENT OF ECOLOGY AND TERRITORY  
Pontificia Universidad Javeriana. Bogotá, Colombia  
aetter@javeriana.edu.co