Matt Cooper

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***EDUCATION***:

2017 - Present ***PhD in Geography***  University of Maryland

* In the lab of Matt Hansen.
* TA for Intro to Remote Sensing.
* Dissertation work on land use and nutrition in the developing world.

08/2013 - 12/2015 ***MA in Geography*** UNC - Chapel Hill

* Coursework in modeling environmental systems, GIS, remote sensing, public health, statistical analysis and R, applied ecology, ecosystem services, policy analysis, and biogeography.
* Independently conducted fieldwork in southern Mali, including household surveys and biodiversity surveys across three villages.
* Worked as a Research Assistant using ArcGIS, R, Python, Excel and Access to manage data behind a social-ecological policy evaluation study in Tanzania, the largest of its kind.
* Worked for two semesters as a Teaching Assistant for Introductory GIS courses.
* Coursework delayed by a semester due to family illness.

08/2006 - 04/2010 ***BA in Geography and Anthropology*** University of Florida

* Coursework in GIS and Remote Sensing, Human-Environment interactions, and fieldwork methods.
* Academically involved in the Undergraduate Honors Program

***PUBLICATIONS:***

Hengle, T., Leenaars, J., Shepherd, K. D., Walsh, M. G., Mamo, T., Berkhout, E., Hellmann, F., Cooper, M., Fegraus, E., Kwabena, N. (2017). Soil Nutrient Maps of Sub-Saharan Africa: Assessment of Soil Nutrient Content at 250 m Spatial Resolution Using Machine Learning. *Nutrient Cycling in Agroecosystems*. In Review

Cooper, M., & West, C. T. (2017). Unraveling the Sikasso Paradox: Agricultural Change and Malnutrition in Sikasso, Mali. *Ecology of Food and Nutrition*, 56(2), 101-123.

Cooper, Matthew W. (2011) Uses of Forestland and Motives for Conservation among Landowners in North-Central Florida.  *The Florida Geographer,* 42, 94-106.

***WORK EXPERIENCE***:

01/2016-Present ***Conservation International*** Arlington, Virginia

*Data Manager, Vital Signs Project*

* Manage data collection, storage and analysis for a multi-million dollar project on human outcomes of agro-ecological change across five African countries.
* Improve applications in a complex data flow involving field data collection tools, cloud-based web applications and databases, data QA/QC procedures and user-facing data products.
* Work with teams in the field to collect a wide variety of biophysical and socioeconomic data.
* Analyze data to develop indicators on Nutrition, Food Security, Biomass, Woodfuel Use, Water Quality, and Land Use Change, and presented indicator results to scientists, policymakers and stakeholders.

*Project Lead, Social Media Team*

* Collect hundreds of millions of tweets in English and Bahasa, to gauge public sentiment on various environmental themes and target hotspots of environmental stress.
* Develop a social media based indicator for monitoring public engagement with biodiversity and awareness of the value of biodiversity, in the form of a country-level aggregate statistics as well as a real-time interactive platform.

02/2015 –12/2015 ***aWhere, Inc***  Durham, North Carolina

*Data Analyst*

* Estimated growing areas of over 100 commodity crops by integrating land cover data and crop output data from FAO using spatial disaggregation techniques in R.
* Created several webmaps using ArcGIS online and R-Shiny to visualize spatial data.
* Used statistical modeling (Vector Autoregression) in R and SQL server to estimate futures prices of commodities based on historical price and weather data.
* Automated cartographic outputs.
* Led French-language training in for World Food Program in Burkina Faso on data management.

05/2014-08/2014 ***E-Sciences, Inc***  Orlando & Miami, Florida

*GIS and Tree Survey Intern*

* Worked on GIS tasks such as hydrological modeling, cartography, database management and interpolation.
* Conducted urban tree surveys in Miami, rapidly learning the major tree species
* Used ArcGIS and AutoCAD, and introduced the company to open-source GIS tools available in R and Python.

01/2013–07/2013 ***Peace Corps Response***  Pili, the Philippines

*Forest Land Use Advisor*

* Use field surveys, GIS and Remote Sensing to advise the province of Camarines Sur in creating a new forest management plan that identifies and maximizes ecosystem services.
* Compiled a GIS database for the Caramoan National Forest and surrounding areas, deriving land cover data from LANDSAT imagery and using hydrologic modeling of a DEM to derive rivers and watersheds.
* Worked with rural communities to conduct Participatory Resource Assessments, using community resource mapping and free listing to determine the quantity and resilience of local natural resource systems.
* Engaged in capacity building activities, instructing local environmental workers in the use of GIS and GPS.

07/2012–11/2012 ***Juneau Forestry Sciences Lab***  Juneau, Alaska

*Research Assistant Intern*

* Managed all of the data for several research projects in the Tongass National Forest using computer programs like ArcGIS, SAS, Excel, Access, Photoshop, HemiView and VisualCE
* Occasionally collect data in the field, camping and living in primitive and remote conditions.

02/2011–04/2012 ***Peace Corps*** Mali, West Africa

*Environmental Extension Agent*

* Lived in a rural village without water or electricity, successfully integrating myself into the local Bambara-speaking community.
* Planted over 200 trees for food security, animal fodder, soil fertility, forest preservation, erosion control and fuelwood production.
* Hosted a radio show and led trainings in Bambara and French on food processing, nutrition, adult literacy, computer skills, human waste disposal, and hand washing.
* Acquired funds from USAID to increase the village’s water availability and ability to garden.
* Learned to identify every major tree species in the Sudanian Savanna eco-region, including scientific name, and common names in French, Bambara and Dioula.
* Service interrupted due to a military Coup d’état.

05/2010-11/2010 ***Wayne National Forest*** Ironton, Ohio

*Fire Effects Monitoring Intern*

* Collected data on vegetation types and fuel levels in pre- and post-burn plots
* Compiled a database and analyzed collected data using ArcGIS
* Worked with a team on fieldwork campaigns lasting up to 10 days
* Worked part-time doing wildland fire fighting.
* Learned to identify every species of tree and nearly every forb found in the National Forest

***COMPUTER COMPETENCIES:***

* Python, including pandas and numpy
* Amazon Web Services
* Linux and Bash
* R, including ggplot, Rmarkdown and knitr, and R Shiny
* SQL
* Git
* Matlab
* ArcGIS and ArcPy
* Excel and Access
* ENVI and Erdas Imagine

***GRANTS:***

05/2017 ***Biodiversity Indicators Grant for Aichi Target 1*** $60,000

* Grant to develop a social media based indicator for monitoring public engagement with biodiversity and awareness of the value of biodiversity, in the form of a country-level aggregate statistics as well as a real-time interactive platform.

07/2016 ***Millennium Information Lab Project Grant***  $20,000

* Lead a project collecting hundreds of millions of tweets in English and Bahasa, to gauge public sentiment on various environmental themes and target hotspots of environmental stress.

04/2014 ***West African Research Association Pre-Doctoral Fellowship*** $6,000

* Funding to do ten weeks of research on cotton, land use, and childhood malnutrition in southern Mali for MA thesis.

04/2014 ***Foreign Language and Area Studies (FLAS) Fellowship***  $40,000

* Awarded to study the Wolof Language and the West African region for an academic year at UNC
* Award declined

***CERTIFICATIONS, AWARDS & MEMBERSHIPS:***

**Certified Arborist,** International Society of Arboriculture 07/2014

**Certified Wildland Firefighter,** National Wildfire Coordinating Group 06/2010

**Member,**  American Association of Geographers 10/2013

**Member,**  The West African Research Association 01/2014

**Eagle Scout Award**, The Boy Scouts of America 04/2005

***LANGUAGES:***

**Language Score Scored by Date**

French Advanced-Mid UNC 09/2015

Tagalog Advanced-High Peace Corps 07/2013

Bambara Advanced-Mid Peace Corps 05/2012

Spanish 68-Equivalent of 4 College Semesters CLEP 05/2010

Arabic 3.5 GPA over 4 College Semesters University of Florida 2006-08