

Christopher L. Crawford, PhD

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EDUCATION

Princeton University, PhD in Environmental Policy, School of Public and International Affairs *Princeton, NJ | 2016 – 2022*

- Dean's Completion Fellowship 2022; Princeton Energy & Climate Scholar; GPA: 3.95; GRE: 169/170 verbal, 167/170 quantitative

University of Michigan, BS (with distinction) in Ecology & Evolutionary Biology, Minor in Physics *Ann Arbor, MI | 2008 – 2012*

- GPA: 3.82; Phi Beta Kappa Society; University Honors for Academic Excellence: 2008-2012; James B. Angell Scholar: 2012

RESEARCH AND PROFESSIONAL EXPERIENCE

Princeton University **Postgraduate Research Associate** *Princeton, NJ | June 2022 - present*
Graduate Researcher & PhD Candidate *Sep. 2016 – May 2022*

Using the tools of geospatial analysis, data science, and ecology, my dissertation examined how changes in the distribution of people and agriculture affect the environment, conducting cutting-edge research on how transitions in agricultural land use, affect biodiversity conservation and carbon storage, with a focus on the twin forces of agricultural expansion and abandonment.

- Developed an expertise in biodiversity metrics by showing that commonly used methods for measuring biodiversity produce radically different land-use recommendations for either biodiversity protection or agricultural conversion, resulting in a peer-reviewed article informing how biodiversity is incorporated into spatial land-use prioritization and planning decisions.
- Produced quantitative assessments of the implications of cropland abandonment and recultivation on carbon storage and biodiversity by leveraging a high-resolution land cover time series for 11 sites across 4 continents and maps of forest and soil carbon accumulation rates, developing R scripts to process hundreds of millions of pixels of data on Princeton's computing clusters and quantify the persistence of cropland abandonment through time, producing a high-impact peer-reviewed article illuminating a pivotal factor that influences the potential for abandonment to help meet carbon and biodiversity goals.
- Combined high-resolution land cover data with distribution and habitat data for over 2000 bird and mammal species to produce the first detailed analysis of how abandonment, secondary succession, and recultivation affected the amount of habitat available for individual mammal and bird species through time.
- Investigated methods for increasing the sustainability of livestock grazing in Kenya's savanna ecosystems through intensive field research, producing one of the first quantifications of the behavioral and environmental consequences of planned grazing, providing a link to the local-scale interventions that make up most conservation work.
- Authored 4 publications (3 as first-author) in high-impact journals like [Science Advances](#) & [Ecological Applications](#), with 4 additional manuscripts under review or in prep and 2 research reports. See full publications on [Google Scholar](#).
- Communicated research findings to academic, professional, and public audiences, presenting at 4 academic and industry conferences, giving 2 invited undergraduate course lectures, and getting press coverage by [BioScience](#), [Bloomberg](#), and [The Hill](#).
- Served as an Assistant in Instruction (TA) for two semesters of SPI/ENV 350 (2018, 2019), leading three weekly discussion sections on environment policy, natural resource management, biodiversity, wildlife trade, climate change, pollution, development, and ecosystem services, while contributing to lesson planning and grading student papers and exams.

Sustainable Conservation **Project Manager** *San Francisco, CA | Jan. – May 2016*
Project Associate *July 2013 – 2015*

- Mapped all restorable areas along California's Mokelumne River and quantified the corresponding costs and ecosystem service benefits of restoration, producing a cost-benefit analysis and report informing watershed-wide conservation planning.
- Managed [PlantRight](#)'s annual survey to track the retail market for invasive plants in California, coordinating and training more than 150 volunteers each year to survey more than 250 stores. Results and details can be found at: plantright.org/survey.
- Led annual process to update [PlantRight's list of commonly sold invasive plants](#), leveraging data on horticultural prevalence (from annual survey), invasion risk, geographic range, and expert recommendations on non-invasive alternatives.
- Developed strong collaborations across diverse sectors and industries in order to solve environmental problems and facilitate restoration projects, including businesses (e.g., retail garden centers recruited as "PlantRight Partners"), landowners, farmers, public utilities, industry groups, volunteer groups, academics, and conservation NGOs.

Michigan State University **Data Quality Controller** *Western Province, Zambia | May – July 2012*

- Trained, supervised, and managed survey teams as part of the 2012 Rural Agricultural Livelihoods Survey, a nationally representative survey of 8,500 Zambian farm households.

- Designed and conducted two-month research project studying patterns of song interaction in two migratory populations of birds in northern Michigan, establishing baseline data to inform further science and co-authored a [peer-reviewed journal article](#).

TECHNICAL SKILLS

- Geospatial Analysis in R, Google Earth Engine, ArcGIS, and QGIS.
- Programming: R (advanced), Python (beginner), JavaScript (beginner), linux/unix/bash (moderate), cluster computing, version control and collaboration with Github, producing reproducible research with Markdown, data visualization with `ggplot2`.
- R Package expertise: `tidyverse`, `data.table`, `terra`, `raster`, `sf`, `arrow`.

LEADERSHIP, TEAMWORK, AND OUTREACH

- Conducted outreach on environmental issues such as climate change (meeting with congressional staff and providing 2 lectures to local high schoolers) and invasive plants (including 7 presentations to garden groups in California and 6 [online webinars](#)).
- Reviewed and edited academic articles by policy graduate students, as Associate Editor (2018, 2019) of the student-run Journal of Public and International Affairs, published by the Association of Professional Schools of International Affairs and Princeton's School of Public & International Affairs (SPIA).
- Conducted invited peer reviews for academic journals such as *BioScience*, *International Journal of Ecology*

EXTRACURRICULAR

- Enjoys baking sourdough, looking for birds, listening to Swedish music, taking pictures of clouds, and cooking spicy food.