Paper ID: 84166
oral
student

IAF EARTH OBSERVATION SYMPOSIUM (B1)
Interactive Presentations - IAF EARTH OBSERVATION SYMPOSIUM (IP)

Author: Ms. Ufuoma Ovienmhada
Massachusetts Institute of Technology (MIT), United States

Ms. Mia Hines
United States
Mr. Andrew West
Yale University, United States
Mr. Ahmed Diongue
Massachusetts Institute of Technology (MIT), United States
Mr. Jordan Mazurek
United States
Ms. Adair Kovac
United States
Mr. Richard Thomas
United States
Prof. Brent Minchew
Massachusetts Institute of Technology (MIT), United States
Prof. Danielle Wood
Massachusetts Institute of Technology (MIT), United States

A GEOSPATIAL PLATFORM FOR OBSERVING ENVIRONMENTAL INJUSTICE IN U.S. PRISON LANDSCAPES USING SATELLITE-DERIVED DATA

Abstract

In recent years, journalists and researchers have elevated a pattern of prison landscapes being exposed to environmental hazards such as air pollution, poor water quality, proximity to hazardous waste facilities, and inadequate mitigation in extreme weather conditions. This intersection of mass incarceration and environmental harm has been largely understudied in ecological terms or at scale.

We partner with the Campaign to Fight Toxic Prisons (CFTP), a national collective — composed of environmental justice organizers, formerly and currently incarcerated folks and their loved ones — organizing resistance at the intersection of incarceration and the environment. In this presentation, we highlight the development of a Decision Support System GIS tool that uses satellite-derived measurements to support CFTP's advocacy support. The tool features two geospatial datasets evaluating Land Surface Temperature measurements and PM 2.5 concentrations in carceral landscapes across the U.S. We present the identification and design of user interactions with the tool that responds to data needs in decision-making workflows for prison ecology activist organizations. These workflows include efforts to improve material conditions of incarcerated people exposed to environmental hazards and longer-term efforts to affect policy and governance of controversial prison projects in toxic landscapes. The prototype also pairs the satellite-derived data with narrative information on incarcerated people who experienced these environmental hazards, providing a multi-method way of understanding environmental injustice in carceral landscapes. The findings can be used by community organizers, policy makers, and anyone seeking to advocate for environmental justice for a population of people that tend to sit at the margins of fights for human rights.