Mapping the Missing Millions: Developing a global database of informal settlement location, schema, and SDG indicators

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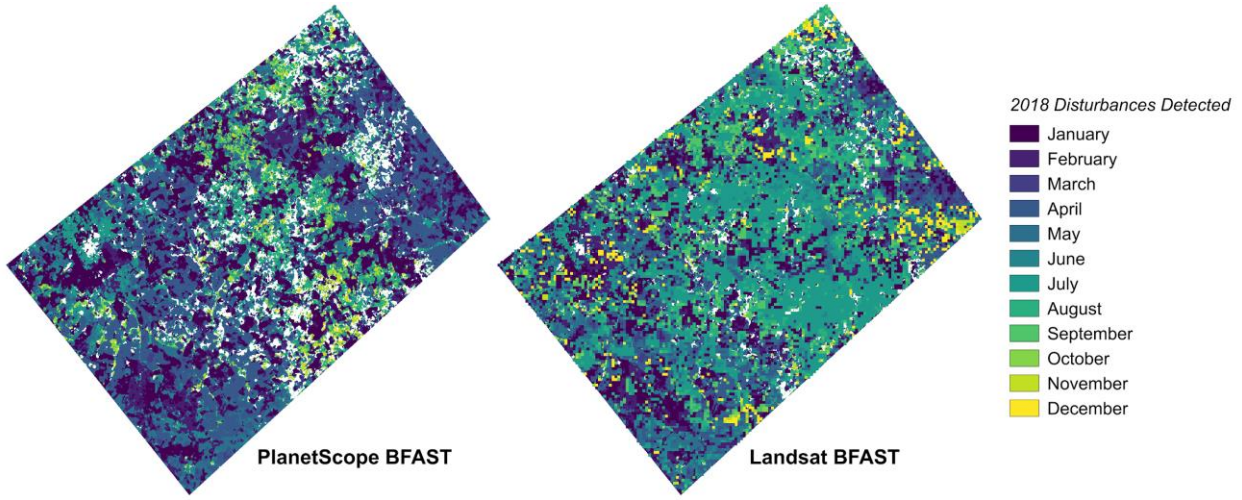
Purpose: Monitoring small-scale informal settlements

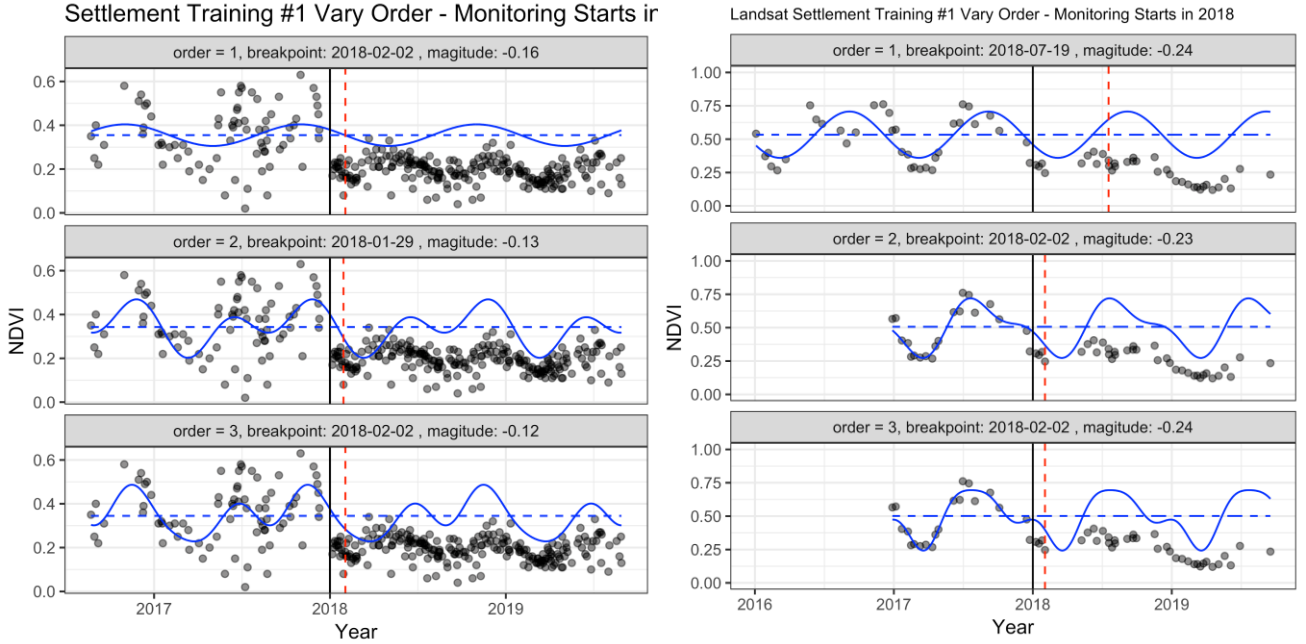
Study Objective: Disturbance detection analysis of PlanetScope time series imagery over two refugee settlements in Uganda and compared results to Landsat time series

Imagery: PlanetScope

Findings: While the spatial resolution of PlanetScope provided for better discrimination of settlement features such as dwellings and roadways, the too-brief observational period of PlanetScope imagery inhibited accurate disturbance detection at Pagirinya Refugee Settlement, which was established in mid-2016. More promising results were achieved at Kyangwali Refugee Settlement where disturbances associated with settlement expansion were accurately captured in 2018. Additional research will explore disturbance detection viability at other informal settlements that are established more recently and have longer historical reference periods.



Map of disturbances detected over Kyangwali Refugee Settlement using PlanetScope (left) and Landsat (right) imagery associated with settlement establishment and growth in 2018.



Time series of pixel time series over Kyangwali Refugee Settlement, Uganda, using PlanetScope (left) and Landsat (right) data. Results output from BFAST disturbance detection with varying harmonic orders (1-3; top-bottom) and monitoring starting in 2018.