

Tracking Urban Expansion in Portland, Oregon (1984-2017)

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Abstract. The magnitude of the Urban Heat Island effect (UHI) in Portland, Oregon is determined from June 1984 to September 2017, and used as a proxy for urban development. This analysis demonstrates that the magnitude of Portland's UHI has remained largely unchanged over this period, implying no significant decline in its urban vegetation. This is supported by analysis of the Enhanced Vegetation Index (EVI) of the Portland Metro area, which has also remained largely unchanged over the period studied. An estimate of the total area of vegetation detectable via satellite in the Portland Metro is also determined and found to have little variance over time.

Keywords: Smart Growth, Urban Development, Urban Heat Island effect, Metro growth Boundary, Portland, Oregon.