**City of Boston Canopy Cover and Biomass Density**

Raciti, S.M., Hutyra, L.R., Newell, J.D. Mapping carbon storage in urban trees with multi-source remote sensing data: Relationships between biomass, land use, and demographics in Boston neighborhoods, *Science of the Total Environment*, in press (DOI: 10.1016/j.scitotenv.2014.08.070).

**Summary:**

Tree biomass was estimated for the City of Boston using NDVI (based on Quickbird imagery) and LiDAR for ~2006. A tree canopy cover layer was created based on pixels with an NDVI greater than 0.1 and a height (nDSM) greater than 1m. The relationship between canopy height and biomass (field plot data) was used to create a biomass model (a linear model provided the best fit). This model was then applied on a pixel-by-pixel basis to the entire canopy area of the City of Boston. The resulting maps and data represent Boston tree canopy cover and tree biomass circa summer of 2006. The dataset characteristics and production methods are detailed in Raciti et al. (in press).

**Boston Biomass & Canopy Cover**

The associated GIS Raster files provides estimated aboveground live tree biomass (bostonbiomass4) for the City of Boston, Massachusetts in units of Mg C/ha and the presence (1) or absence (0) of canopy cover (canopy\_int1). Biomass values range from 0 to 84.897 Mg C/ha. Canopy cover is binary. The spatial resolution of the biomass layer is 1m and extended across City of Boston.

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| **Biomass***Raster: bostonbiomass4**Format: Grid**Size: 1.23 GB (uncompressed)**Number of bands: 1**Cell size: 1 square meter**Pixel Type: floating point**Pixel Depth: 32 bit**NoData value: -3.40282346639e+038* | **Canopy Cover***Raster: canopy\_int1**Format: Grid**Size: 1.23 GB (uncompressed)**Number of bands: 1**Cell size: 1 square meter**Pixel Type: unsigned integer**Pixel Depth: 8 bit**NoData value: 255* |

**Spatial Data**

Both the biomass and canopy layers are projected in the same coordinate system detailed below.

*Projection Coordinate System: North\_American\_1983\_UTM\_Zone\_19N*

*Coordinate System: GCS\_North\_American\_1983*

*Datum: North\_American\_Datum\_1983*

*Spheroid: GRS\_1980*

*Prime Meridian: Greenwich, 0.0*

*Unit: Degree, 0.0174532925199433*

*PROJECTION: Transverse\_Mercator*

*false\_easting: 500000.0*

*false\_northing: 0.0*

*central\_meridian: -69.0*

*scale\_factor: 0.9996*

*latitude\_of\_origin: 0.0*

*unit: meter, 1*

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