Studying Tree Cover in LA’s Parks Before and After the MTLA Initiative

Presented By: Diana Bonnarens
@ CUGOS Spring Fling 04/21/23
The “GIST” of it

Me not knowing that MTLA could be studied
Note: Map only shows cities w/ MTIs. Some counties also have TPIs (including King County!)
Million Trees Initiatives

Note: Map only shows cities w/ MTIs. Some counties also have TPIs (including King County!)
Million Trees Los Angeles

Source: Pincetl (2009)
Million Trees Los Angeles

Census Tracts (2000)
Million Trees Los Angeles

Prioritized Planting

- LA Boundary
- Tracts Prioritized in Planting Plan
- High Elevation Mask

WayBackMachine
About 42% of District 7’s Total Area is Prioritized
Google Earth Engine

1. Surface Temperature
2. Climate
3. Weather
4. Landsat
5. High-Resolution Imagery
6. Sentinel
Google Earth Engine

Spatial Resolution: 0.6-m
Temporal Resolution: 1x/year
NAIP

Spatial Resolution: 10-m
Temporal Resolution: ~ 10 Days
S2

Surface Temperature
Climate
Weather
Landsat
High-Resolution Imagery

Click Me to Learn More
How I did it

Adapted from Coleman et al. (2020)
How I did it

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How I did it

Adapted from Coleman et al. (2020)
How I did it

- **Urban Area (2020)**
- **City Council Districts (2002)**
  - **Study Area (Urban)**
  - **Study Area (Non-Urban)**
- **NAIP (2016)**
- **S2 (2016)**
  - **DTM**
  - **DSM**
  - **nDSM**
  - **R**
  - **G**
  - **B**
  - **NIR**
  - **NDVI**
  - **GLCM**
  - **SNIC Superpixel Algorithm**
  - **Random Forest Classification Algorithm**

80% = Training
20% = Validation

Click me to learn about the LiDAR data

My addition to the code

Adapted from Coleman et al. (2020)
Why I added nDSM

Background Info: Guan et al. 2013
Preliminary Results

2006 Image

: 2006 Tree Canopy Cover (TCC)

2016 Image

: 2016 Tree Canopy Cover (TCC)
Preliminary Results

2006 Tree Canopy Cover (TCC)

2006 Image

2016 Tree Canopy Cover (TCC)

2016 Image
Preliminary Results

2006 Tree Canopy Cover (TCC)

2016 Tree Canopy Cover (TCC)
Questions?

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CUGOS monthly meeting