PASADENA

Department of Information Technology - GIS

Researching Infested Trees in Pasadena's Arroyo Seco

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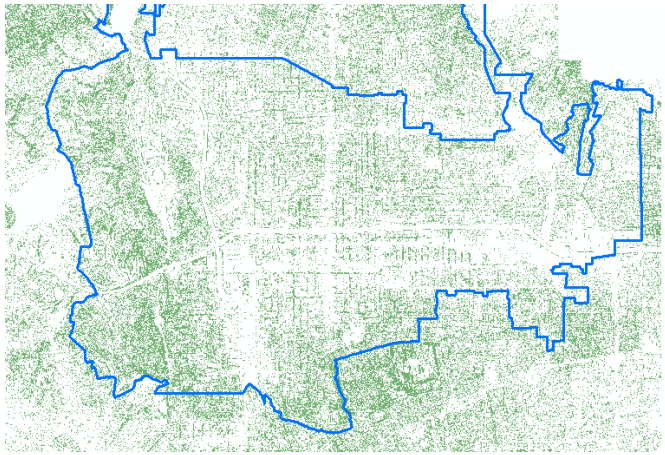
City of Pasadena, CA

Department of Information Technology - GIS

- Located in Los Angeles County, CA
- Home to the Rose Bowl, Rose Parade, NASA's Jet Propulsion Lab, CalTech, and many historic home and neighborhoods
- Over 28% of Pasadena is covered by tree canopy



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Arroyo Seco

- The Arroyo Seco (“dry stream”) is a 25 mile long seasonal river that runs through Pasadena
- Passes by the Rose Bowl stadium
- Great efforts have been made for over 100 years to preserve its natural beauty
- NASA’s Jet Propulsion Lab is located at the mouth of the Arroyo Seco

Pasadena's Arroyo Seco

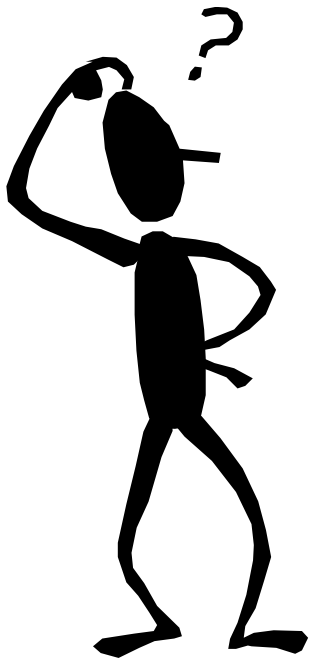
Say Hello to Polyphagous Shot Hole Borer

- The Shot Hole Borer is infesting trees in the Arroyo Seco
- It bores into a host tree, deposits Fusarium and the Fusarium kills the tree
- Need to remove infested trees to prevent further spreading of the pest

Click Here For More Information

Questions

- How to identify which trees are infested?
- How to determine the extent of the infestation?



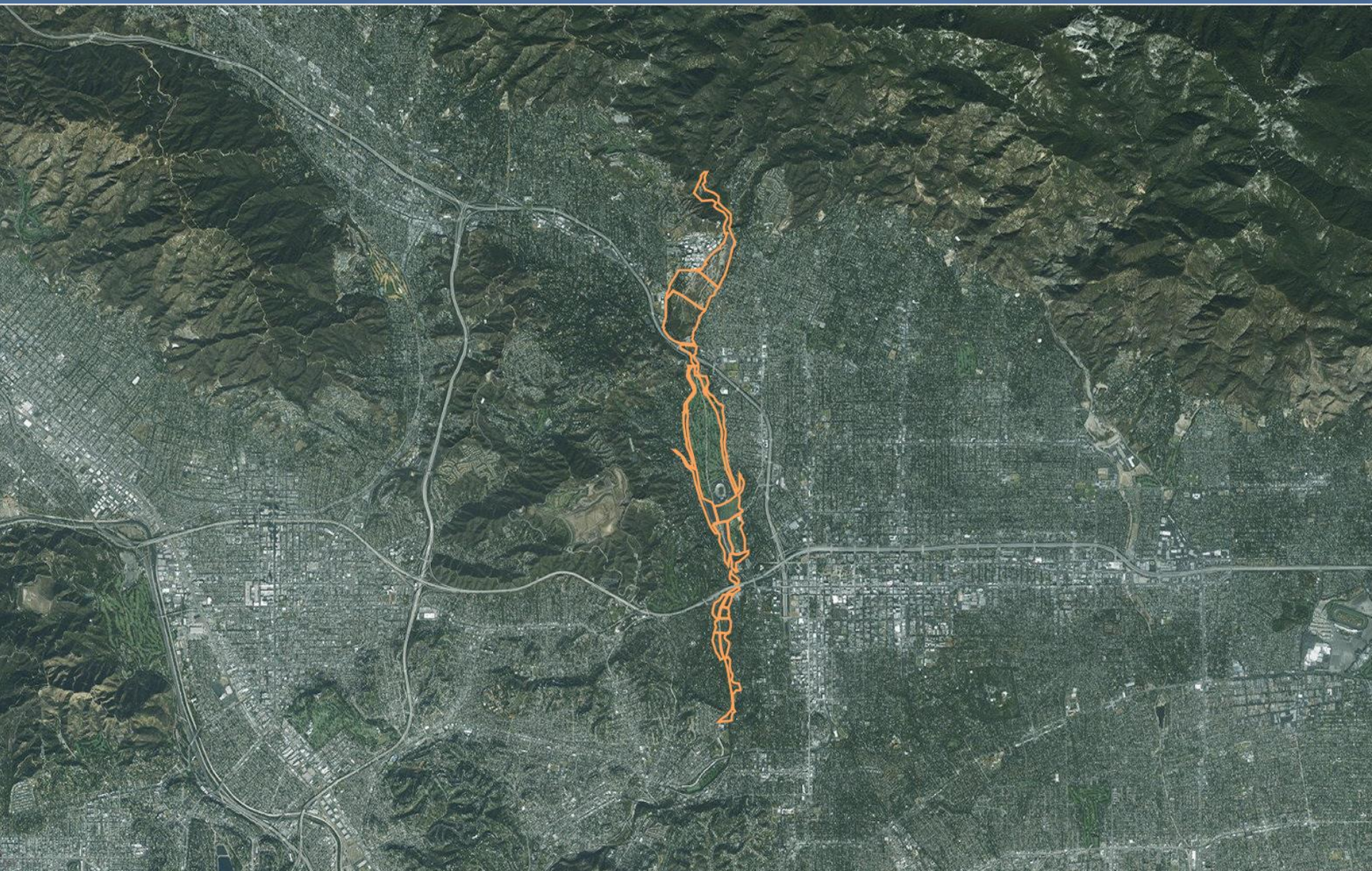
Solution

- Use Collector for ArcGIS!
  - Partner w/ Arroyo Seco Foundation volunteers
  - Multi-user edits to same dataset
  - Offline data collection (unreliable data signals in the Arroyo)
  - Monitor progress remotely

Methods

- Create Web Map on ArcGIS Online for use with Collector for ArcGIS
- Create ArcGIS Online accounts for volunteers
- Define **Study Areas** within the Arroyo
- Train volunteers and assign each a study area
- Use Collector for ArcGIS to collect data points

21 Study Areas



Workflow

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Workflow

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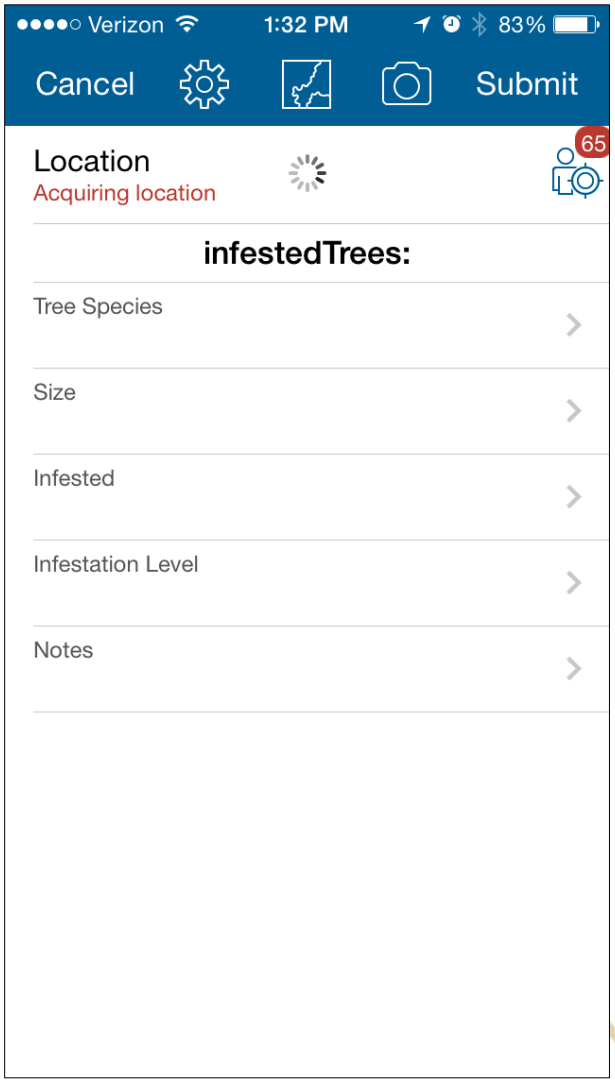

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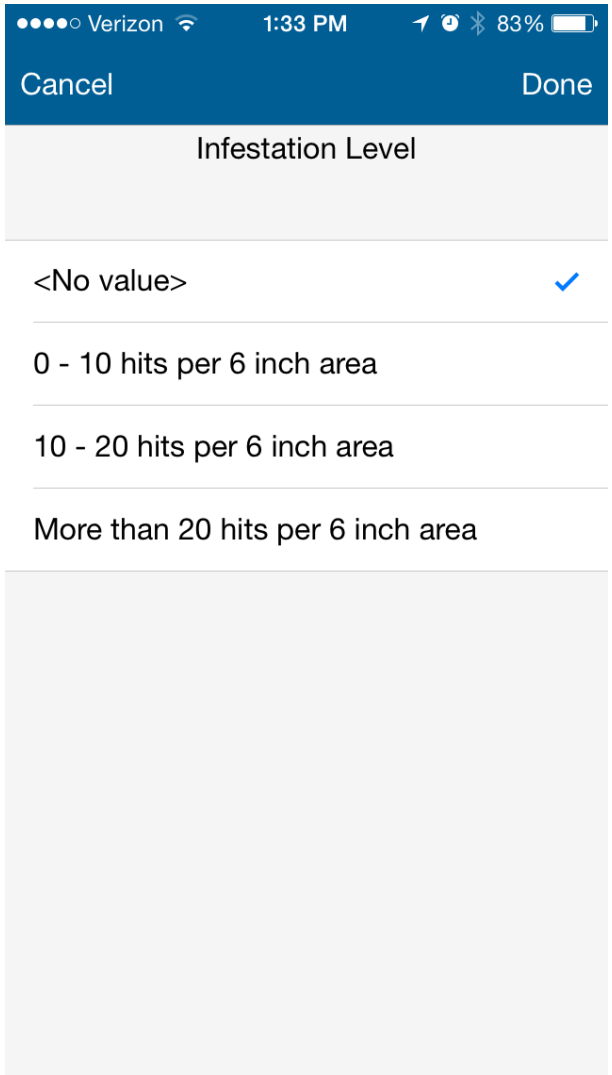
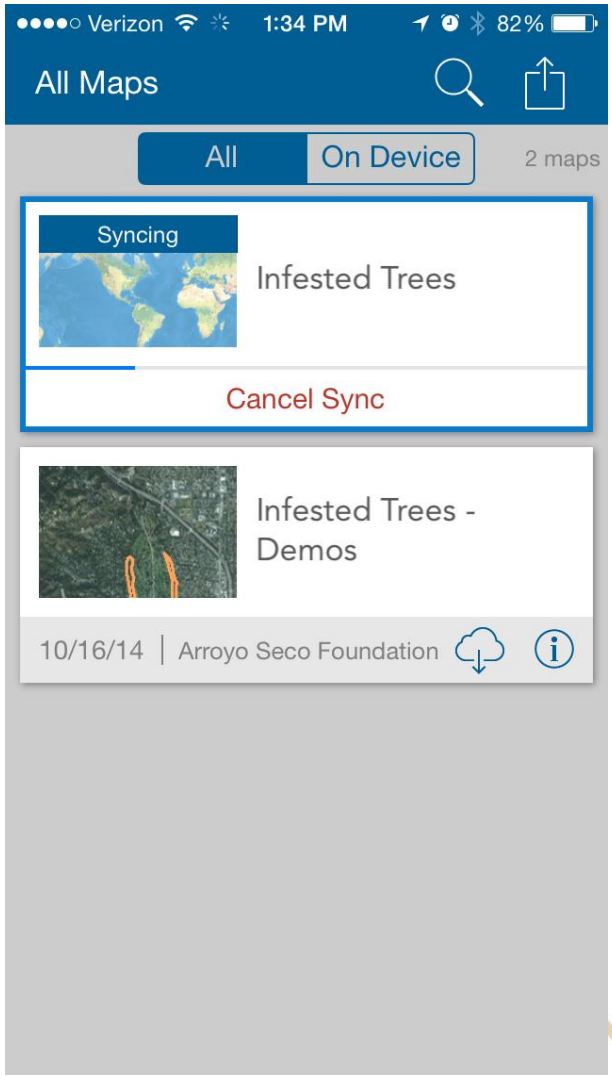
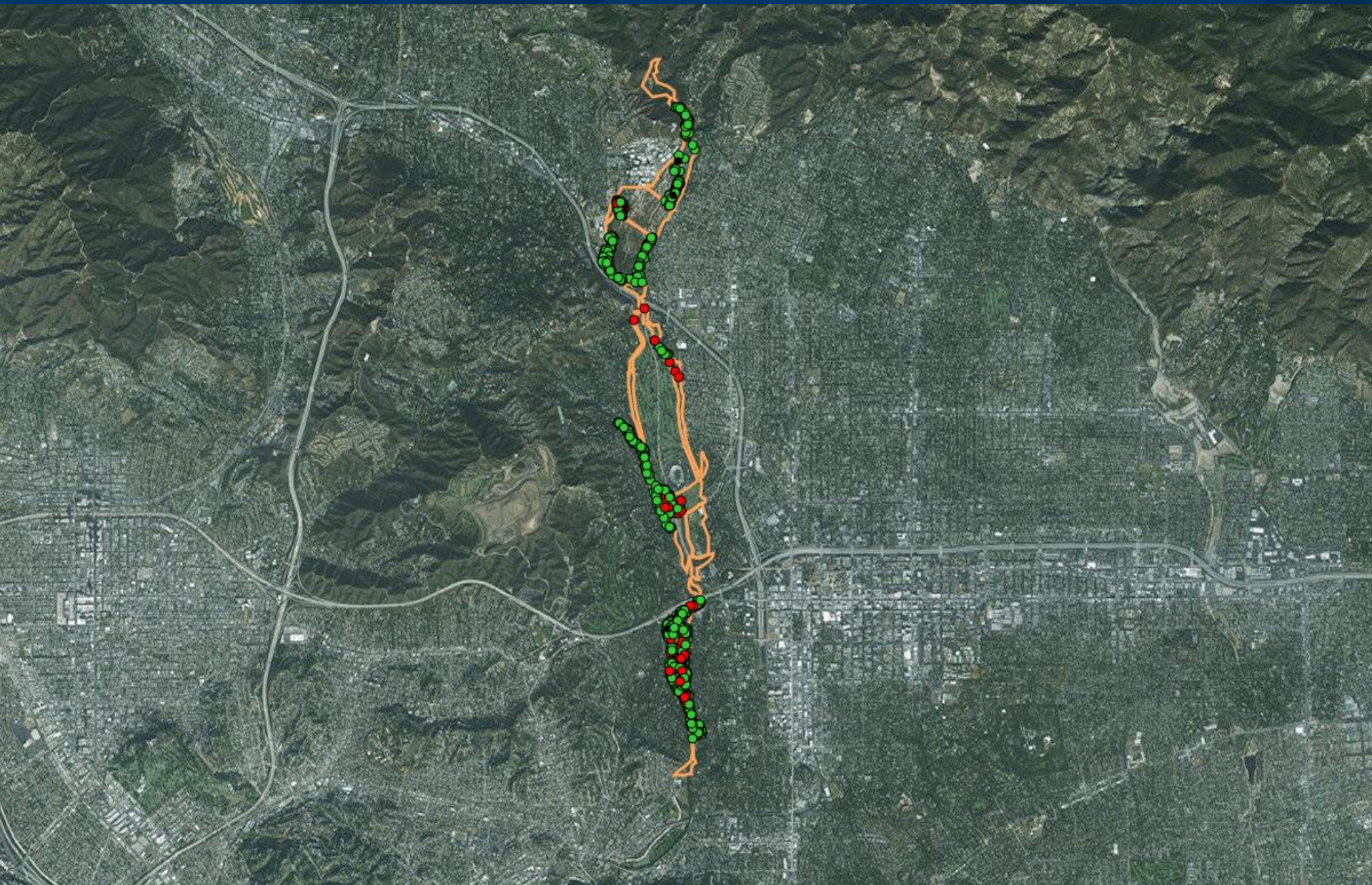




Results



Results

- 2,644 features collected, 435 (16%) infested trees, 11 of 21 areas completed
- 390 trees with 0-10 hits per 6 inch area
- 52 trees with 10-20 hits per 6 inch area
- 5 trees with more than 20 hits per 6 inch area
- 9 volunteers

Challenges

- Volunteers can be unreliable
- Offline editing required extra step for volunteers to complete
- Syncing w/ photos often failed due to large file size
- Project requires volunteers to have smart devices

Questions?