City of Colton Urban Forest Management Project

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Abstract

As population growth continues in our urban centers, urban forest management becomes an important priority. Trees are an essential component of resilient and healthy urban communities, providing benefits including mediating the urban heat island effect, storm water management, and energy and water efficiency, carbon sequestration, and city beautification. In order to assess the current status of Colton's urban forest, interdisciplinary teams of students and scientists from the Center for Urban Resilience (CURes) at Loyola Marymount University (LMU) have assisted Jack Sahl & Associates with an extensive inventory of the tree resources within the City. In gathering data describing the size, distribution, age, health, and energy efficiency benefits of the city's trees, this study seeks to provide recommendations for best management practices of Colton's urban forest. Colton has strived to engage the public in an open dialogue about this project. Colton is the first city to deal with the task of conducting an inventory of all the trees located within the public domain, in the future the strategies used here will be improved upon by other cities.

Introduction

- Healthy and resilient urban forests provide cities with numerous short-term and long-term benefits (UEI, 2008)
  - Air quality
  - Water quality and runoff
  - Urban heat island and energy efficiency
  - Social and community benefits
- Tree inventories provide valuable insight into the best management of urban forests.
- In partnership with Jack Sahl & Associates, CURes students and instructors carried out field inventory of the trees in City of Colton.

Methods

- Student research assistants and instructors (Dr. Peter Auger and Maria Curley) completed part of the full tree inventory of Colton
- Colton City divided into 6 sections
- Tree canopy data collected using
  - Laser range finder, an Inclinometer (angle finder), GPS unit
- Tree canopy characteristics include
  - Height, Diameter at breast height (DBH), Size of the tree canopy, Canopy die back (health), Location , Species (identified by arborist)
- US Forest Service iTree tree canopy analysis software will be used to determine the value of Colton's urban forest

Data

Carrotwood, Cupaniopsis anacardioides
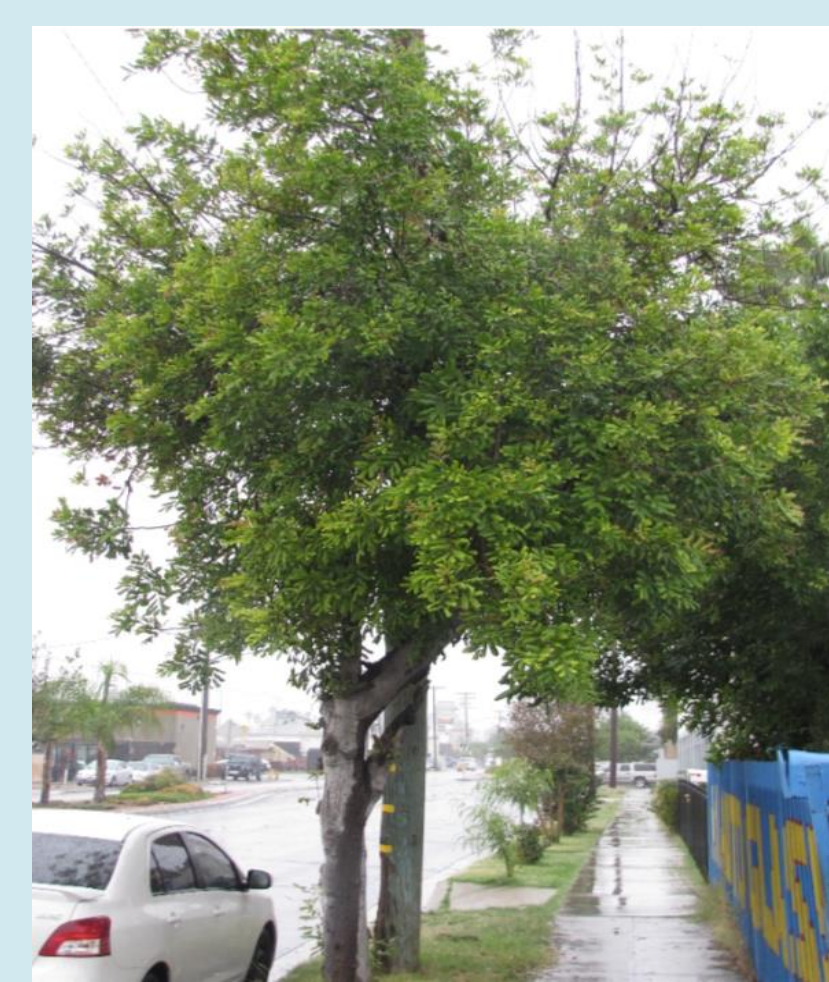
Coral Tree, Erythrina caffra

Crape Myrtle, Lagerstroemia indica

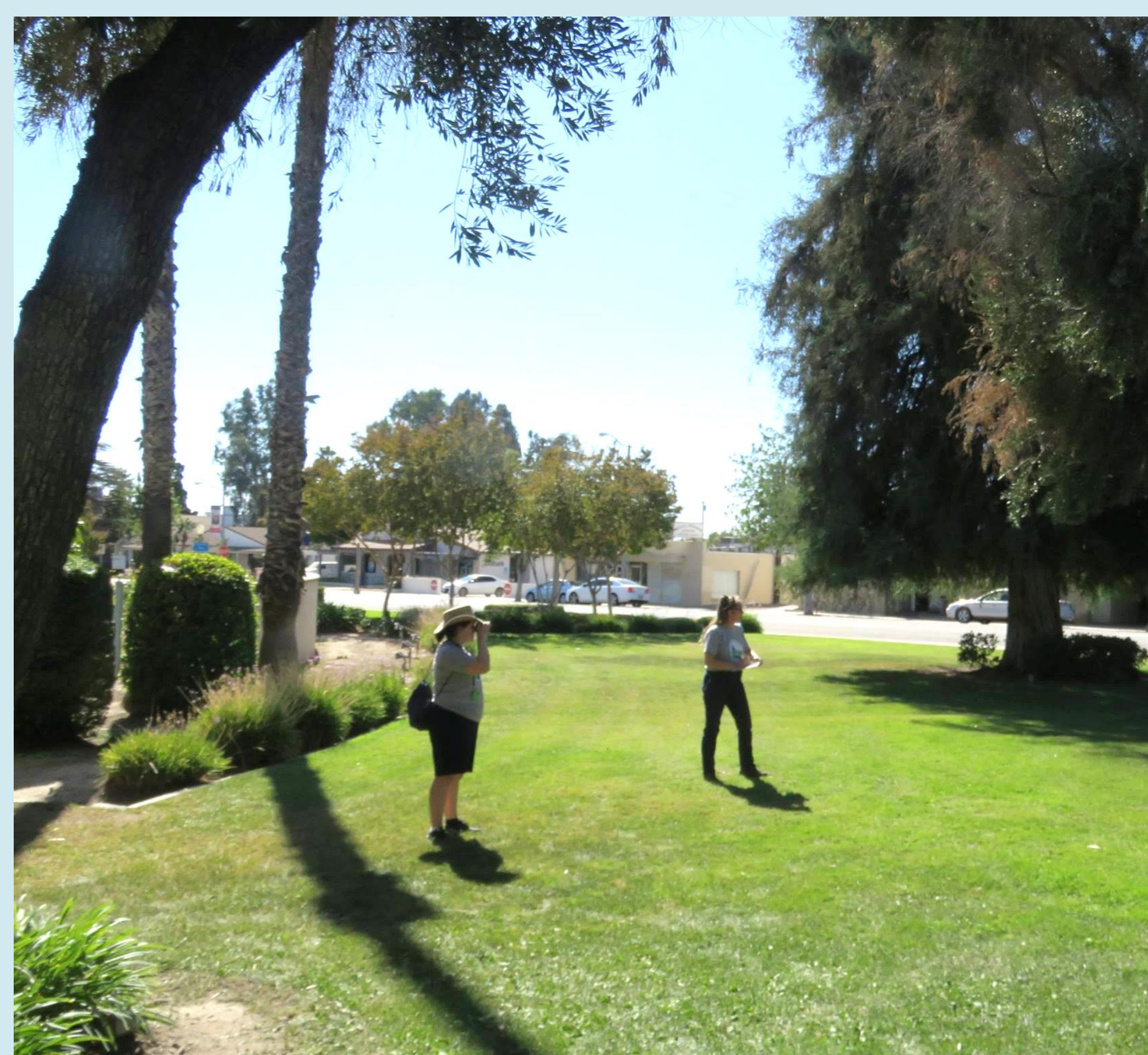Mediterranean Fan Palm, Chamaerops humilis

Glossy Privet, Ligustrum lucidum

Camphor Tree, Cinnamomum camphora

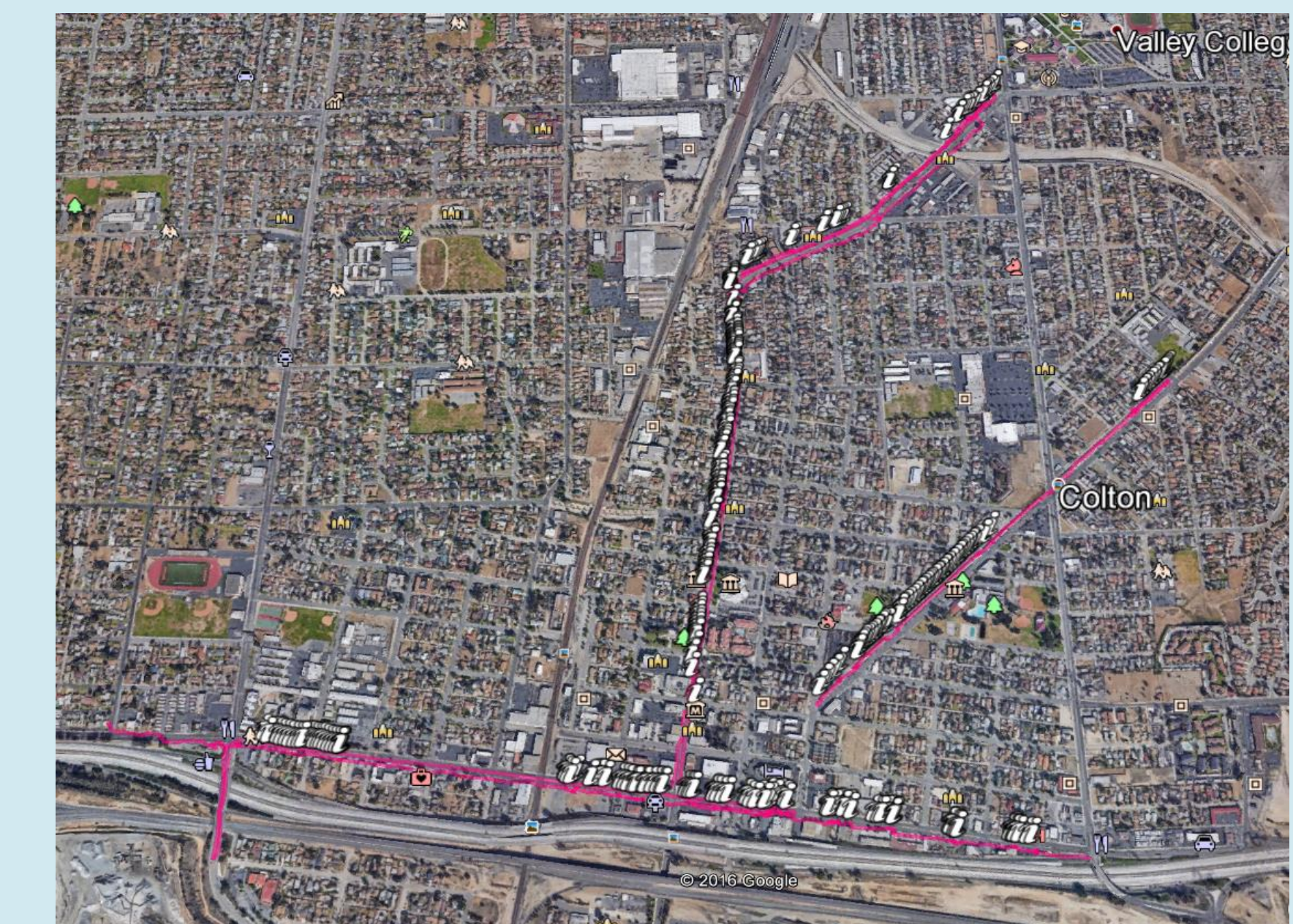Canary Island Date Palms Phoenix canariensis

Chinese Elm, Ulmus parvifolia

Research Assistants gathering data for the inventory

Data (cont.)

A Google Earth image of the transects for three streets

- All field work and data collection has been completed.
- Over 8000 trees have been counted and described.
- iTree analysis ongoing

Discussion

- City of Colton, located in the inland empire, currently is experiencing substantial social and ecological challenges associated with climate change.
- Understanding and promoting the benefits of urban forests are particularly necessary in low income and socially vulnerable cities such as Colton.
- iTree analysis will inform the Colton's long-term urban forestry plan.
- Tree inventory studies should be completed each decade to reflect the current climate regimes and social the needs of the city.
- Future efforts include
  - Community Planting Day where 250 trees will be planted
  - Community Education as well as continued community outreach
  - Working in schools to encourage and promote programs that foster student "citizen science" projects

Literature Cited

Urban Ecology Institute (UEI) (2008). State Of The Urban Forest: A Summary Of The Extent And Condition Of Boston's Urban Forest.

Acknowledgements