Footprint Possibilities

- NGO in Panama
- Managed by Rick Montanari
- Provided guidance, supplies, and logistical assistance
Fundación El Caño

- Manages El Caño
- Preserves ancient heritage
- Helps tourists understand Panamanian history
- Advised the project to best fit their needs to initiate a comparative study
The purpose of this project is to identify the flora currently in El Caño to determine how the environment has changed since Pre-Columbian times.
Methodology
Sample Collection

- **Plant collection**
  - Snip small sample from plant
  - Press for two weeks
  - Mount to herbarium paper and wrap in protective sheet

- **Tree collection**
  - Saw off a sample of tree bark
  - Place inside clear briefcase

- **Fruit collection**
  - Separate fruit from plant
  - Vacuum seal inside of plastic wrap
Making of the Plant Press

- 2 pieces of plywood
- 3 layers of cardboard
- 2 sheets of newspaper
- 4-8 mechanical clamps
Data We Collected

On-Site

- Visual description
- Height
- Frequency
- Location (GPS)

Off-Site

- Scientific name (family, genus, species)
- Common name
- Growth habits (vine, herb, tree, shrub, etc.)
Identifying Flora

- Used assorted plant identification applications
- Personally identified species through known genus
- Contacted Laurencio A. Martinez (botanist)
**PLANTS OF EL CAÑO**

*Family name*

*Amaranthaceae*

*Common name*

*Celosia argentea* “Silver Cock’s Comb”

*Genus & species name*

Det. L. Gangaramney, 2019

*Location*

**COCLÉ:** El Caño Archaeological Park, 08°23’48.23”N 80°30’4.6W; just north of the museum, sparsely populated in a grassy field; Forb/Herb, ca. 3.42 ft tall. Flower is a light purple to a dark purple gradient, leaves are found near the bottom of the stem.

3 September 2019

Lokesh Gangaramaney #1


Herbaria of El Caño Archaeological Park and Worcester Polytechnic Institute (WPI)

Example of the label for the “Silver Cock’s Comb”
Results & Findings
Project Results

- Identified 44 plants in El Caño
  - 9 trees
  - 19 forbs/herbs
  - 2 vines
  - 3 shrubs
  - 6 subshrubs
  - 5 graminoids
- Collected, preserved, and mounted 32 specimens
- Formulated identifications into spreadsheet
- Determined whether native, non-native, or invasive
- Researched historical uses and cultural significance
Conclusions

- Found many invasive and non-native species
- Environment has greatly changed over time
- Some possible explanations:
  - Birds
  - Flooding
  - Landscaping
  - Agriculture
Invasive vs. Non-Invasive species found in the park

Invasive Species
18.2%

Non-Invasive Species
81.8%
Native vs. Non-Native species found in the park
Location of collected samples (image taken on April 2nd 2018)
Moving Forward

- Identify plant matter found during excavations
- Compare modern environment to Pre-Columbian
- Recreate study during dry season
Thank You

With special thanks to Rick Montanari & Alexa Hancock for being such great mentors!
References

- [link](https://media-cdn.sygictraveldata.com/media/800x600/612664395a40232133447d33247d33247d33247d3835373938363134)