

A Web Tree Inventory Application for City of Claremont, California

Tait Rounsaville

MS GIS Program

University of Redlands

Background

- Sustainability
- Historic Trees





Carbon Sources

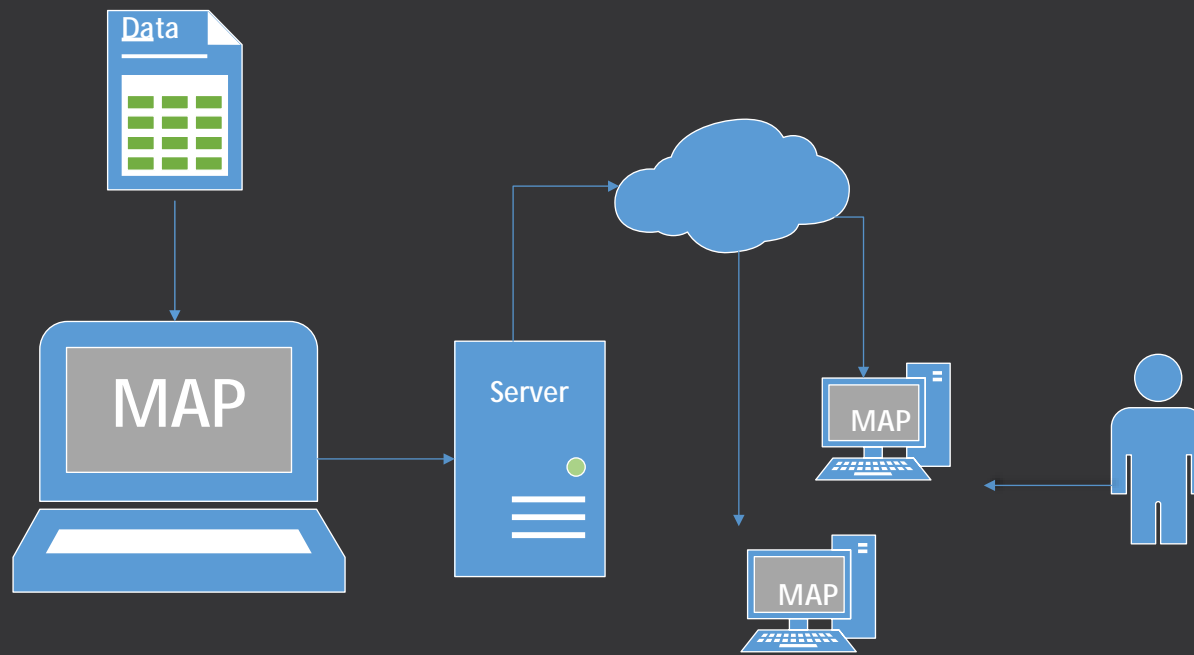
Carbon Stored

Leaves

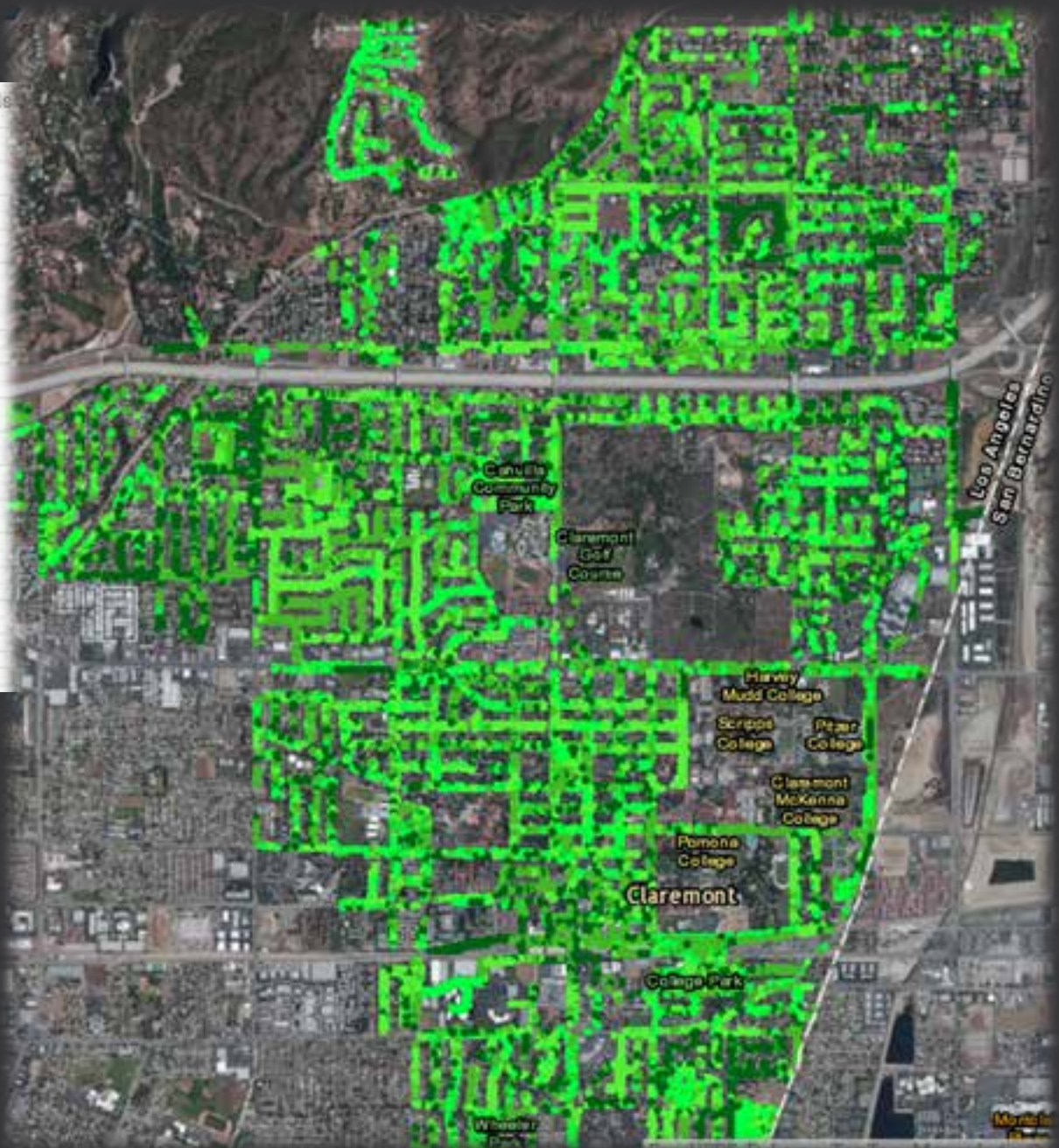
Roots

Snapshot of application

System Design



ID	INVENTORY ADDRESS	STREET	FICITIOUS
1	302	2400297	150 10TH ST E
2	303	2400298	150 10TH ST E
3	304	2400299	150 10TH ST E
4	305	2400300	150 10TH ST E
5	306	2400301	150 10TH ST E
6	307	2400302	150 10TH ST E
7	308	2400303	121 10TH ST E
8	309	2400304	131 10TH ST E
9	9165	5482999	180 10TH ST E X
10	9166	5482997	180 10TH ST E X
11	9167	5482998	143 10TH ST E
12	9265	5483275	165 10TH ST E Z
13	9266	5483276	165 10TH ST E X
14	12692	5487130	624 10TH ST E
15	12693	5487131	624 10TH ST E
16	22278	5487262	638 10TH ST E
17	22279	5487305	638 10TH ST E
18	22280	5487311	624 10TH ST E
19	22281	5487314	624 10TH ST E
20	22282	5487316	624 10TH ST E
21	22916	2400295	150 10TH ST E
22	24213	2400296	150 10TH ST E
23	24214	2400297	155 10TH ST E
24	24215	2400298	155 10TH ST E
25	24216	2400299	155 10TH ST E
26	198	2379438	460 10TH ST W
27	199	2379439	460 10TH ST W
28	200	2379441	452 10TH ST W
29	201	2379442	452 10TH ST W
30	202	2379444	436 10TH ST W
31	270	2400151	220 10TH ST W
32	271	2400153	238 10TH ST W
33	204	2400105	140 10TH ST W X
34	312	2400311	463 10TH ST W
35	313	2400312	463 10TH ST W



Tree Inventory

- Symbolized by CO2 per foot of height

Creating the Map Service

ArcGIS REST Services Directory

Home > services > tait_rounsaville > ClaremontCityTrees (MapServer)

[JSON](#) | [SOAP](#) | [WMTS](#)

tait_rounsaville/ClaremontCityTrees (MapServer)

View In: [ArcGIS JavaScript](#) [ArcGIS REST](#)

View Footprint In: [ArcGIS.com Map Viewer](#)

Service Description: This is an Invokable service that returns information about individual tree.

Map Name: Layers

[Legend](#)

[All Layers and Tables](#)

Layers:

- [ClaremontTrees2012](#) (0)

```
function doQuery(evtObj)
{
    map = app.map;
    map.infoWindow.hide();
    map.graphics.clear();
    var selectionPoly = evtObj.geometry;
    gsvc = app.gsvc;
    switch (selectionPoly.type)
    {
        case "polygon":
            var symbol = new SimpleFillSymbol(SimpleFillSymbol.STYLE_NONE, new SimpleLineSymbol(SimpleLineSymbol.STYLE_SOLID));
            break;
    }
    var graphic = new Graphic(selectionPoly, symbol);
    map.graphics.add(graphic);
    infoWindowAnchorPnt=selectionPoly.getCentroid();
    var treeLyrUri = optLyrUri + "/" + "0";
    outFields = ["DBH_1","Height_1"];
    queryTask = new esri.tasks.QueryTask(treeLyrUri);
    query = new esri.tasks.Query();
    query.outFields = outFields;
    query.returnGeometry = false;
    query.where = "1=1";
    query.geometry=selectionPoly;
    queryTask.execute(query, handleQueryResult, errorHandler);
}

function handleQueryResult(results)
{
    if ( ! results.hasOwnProperty("features") ||
        results.features.length === 0 )
    {
    }
}
```



Selecting Tree Points

```
function handleQueryResult(results)
{
  if ( ! results.hasOwnProperty("features") ||
    results.features.length === 0 )
  {
    return; // no features, something went wrong
  }
  text=0;
  for (var i = 0; i < results.features.length; i++)
  {
    text += 3.6663*((.15*((results.features[i].attributes.DBH_1)^2))*results.features[i].attribut
  }
  var count = results.features.length ;
  /* enter table to select new tree type, multiply by count */
  var result = text.toFixed(2);
  var content= result + " Pounds of CO2 stored to date</br>From " + count + " trees";
}
```

Ø Results pulled from server



**Returned summary
of selection including
tree count and
total CO2**

43999.66 Pounds of CO2 stored to date
From 268 trees

Of which there are:

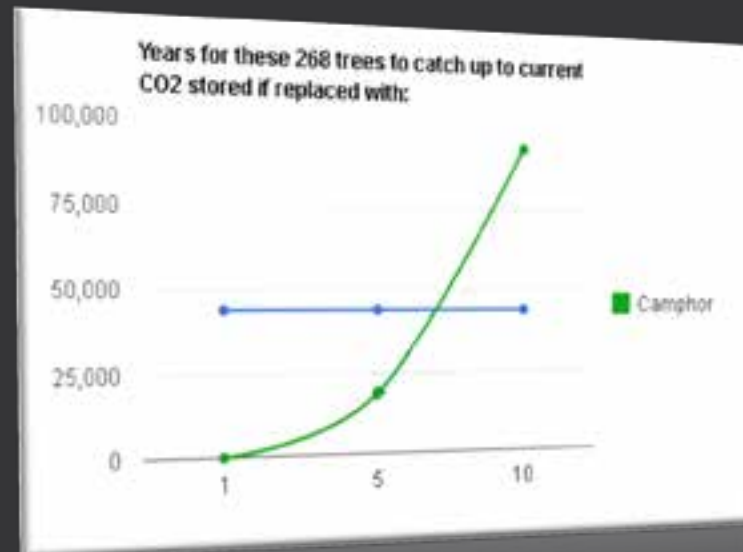
- 12 Sycamore
- 32 Pine
- 37 Jacaranda
- ...

Replacing selected trees by species type



Yew Pine ▼
Yew Pine
Jacaranda
Camphor

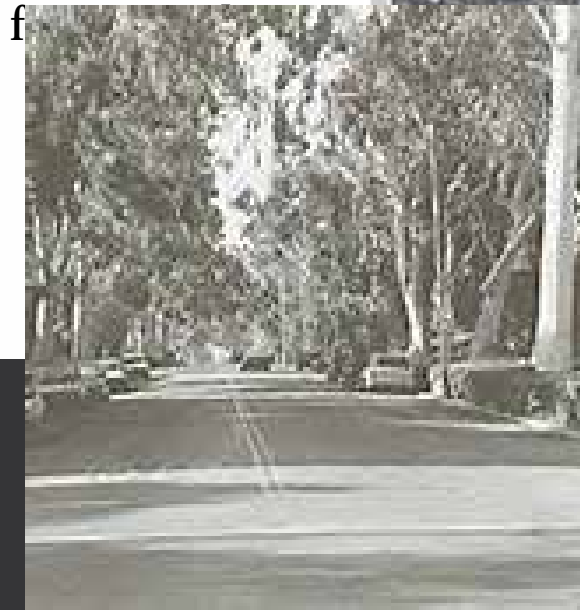
= **6.7 years**
- to reach
current total



Summary



- Carbon for now
- More future



Thank You

Tait Rounsaville

taitr@yahoo.com