



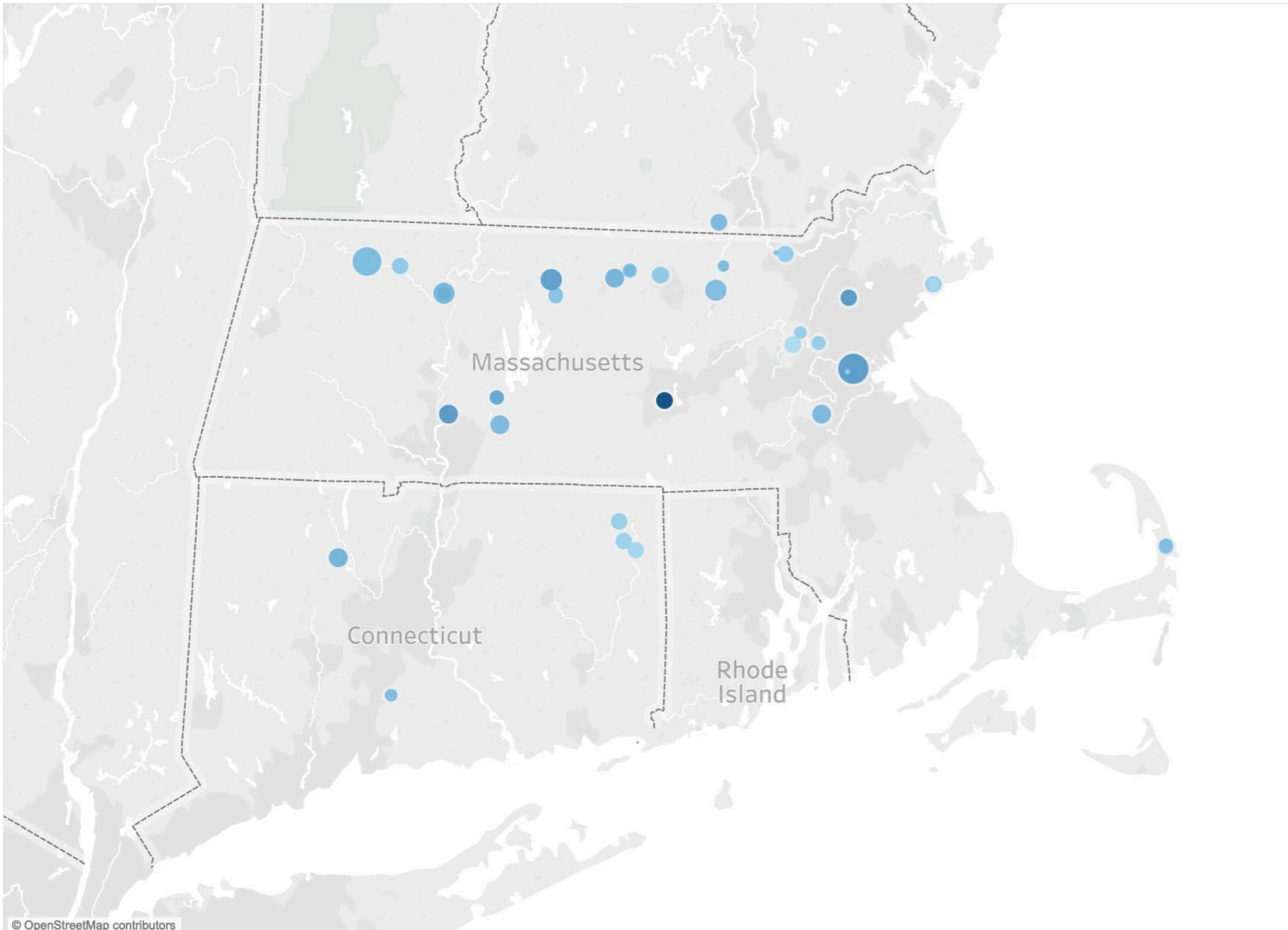
Using Tableau and ArcGIS Online to explore Our Changing Forests data

Joseph Scanio

4/9/2019

Tableau

Sheet 1



Year

- (All)
- 2013
- 2014
- 2015
- 2016
- 2017
- 2018
- 2019

AVG(Stand Density (tre...



AVG(Carbon Biomass (...


- 16.9
- 200.0
- 400.0
- 600.0
- 818.8


ArcGIS Online


New Map ▾ Create Presentation  Joseph ▾


emap |

 Save ▾

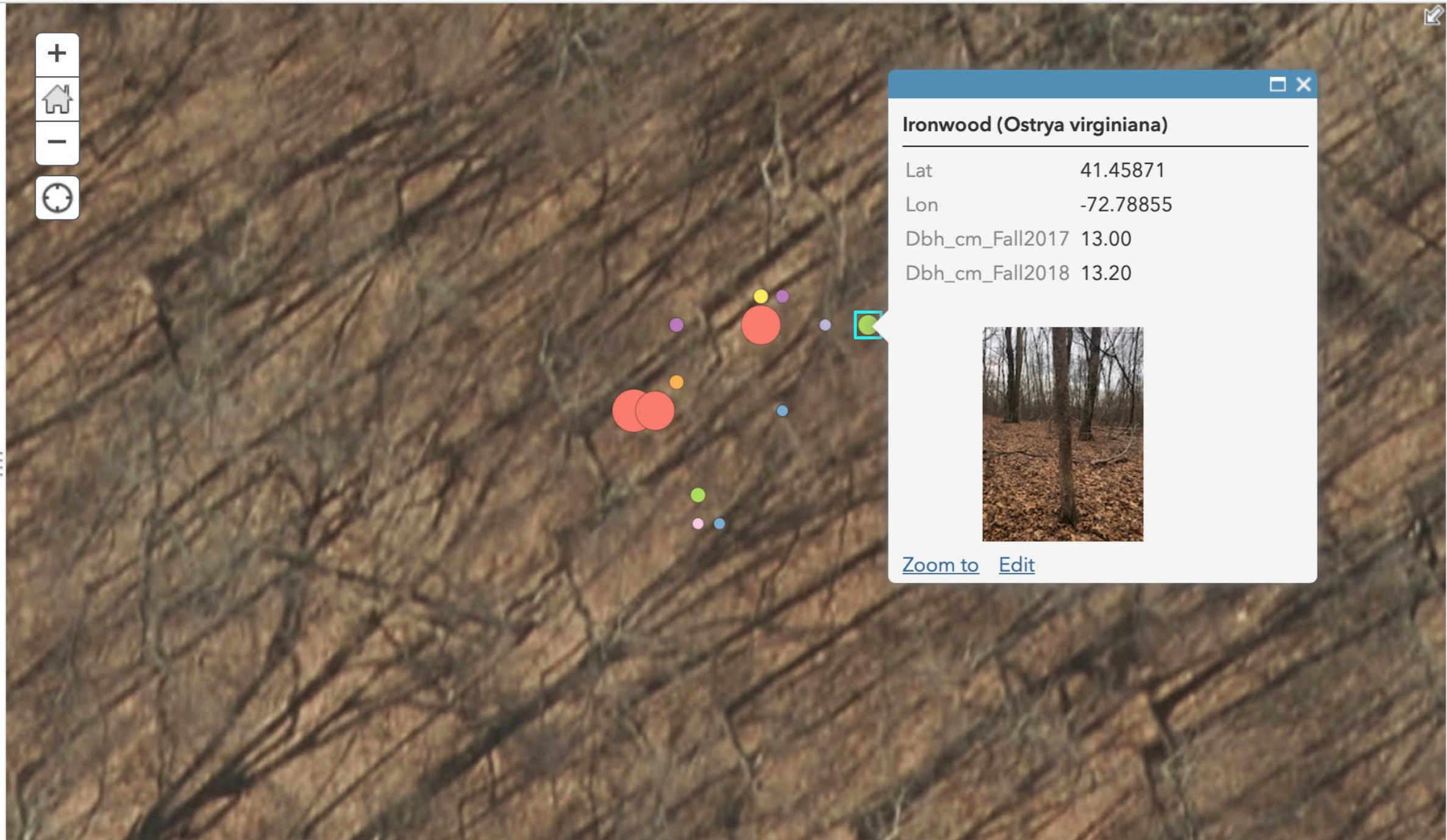
 Share

 Print ▾

 Measure

 Bookmarks

Find address or place



Ironwood (*Ostrya virginiana*)

Lat	41.45871
Lon	-72.78855
Dbh_cm_Fall2017	13.00
Dbh_cm_Fall2018	13.20



[Zoom to](#) [Edit](#)

Harvard Forest schoolyard data download page



[Harvard Forest](#) > [Schoolyard LTER Database](#) > [Download Data](#)

Schoolyard LTER Database

Download Data

[Changing Forests / All Schools / All Sites](#)

[Download data](#)

[Carbon biomass by tree](#) [By site](#)

[Summary of selected data](#)

Project: [Fall Phenology](#) [Spring Phenology](#) [Hemlock Woolly Adelgid](#) [Vernal Pools](#) [Streams](#) [Changing Forests](#)

School: [Clear Search](#)

Site: [Clear Search](#)

Search for: [Clear Search](#)

Order By: [id](#) [date](#) [tree](#) [species](#)

Site Code=school-project-site. Teacher=teacher's last name. Date=date of observation (m/d/yyyy).

Julian=day of year. Survey=survey number. Tree ID=tree number. Species Code=[species code](#).

Health=tree health (1=living, 0=dead). Dbh=diameter at breast height (cm).

ID	Site Code	Teacher	Date	Julian	Survey	Tree ID	Species Code	Health	Dbh (cm)
222	APS-forest-001	Capone	9/18/2014	261	1	51	PP	1	52.5
223	APS-forest-001	Capone	9/18/2014	261	1	52	WP	1	7.3
224	APS-forest-001	Capone	9/18/2014	261	1	53	PP	1	38.2
240	APS-forest-001	Capone	9/18/2014	261	1	54	WP	1	25
225	APS-forest-001	Capone	9/18/2014	261	1	55	WP	1	32.1

Changing Forests, ALL SCHOOLS, ALL SITES, By Site

Changing Forests data by site .csv file

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	Site Code	Survey	Year	Stand Densit	Basal Area (	Carbon Biomass (Mt/ha)													
2	APS-forest-0	1	2014	2600	79.18	241.64													
3	APS-forest-0	1	2016	1400	23.39	67.61													
4	APS-forest-0	2	2017	1300	24.27	71.1													
5	ATH-forest-0	1	2013	2400	116.62	409.75													
6	ATH-forest-0	1	2014	2000	169.32	423.33													
7	ATH-forest-0	1	2014	1300	33.82	89.75													
8	AWH-forest-	1	2016	1000	70.59	212.23													
9	AWH-forest-	2	2017	1000	74.03	224.69													
10	AWH-forest-	3	2018	1000	79.49	244.75													
11	AWH-forest-	1	2017	400	60.79	217.74													
12	AWH-forest-	2	2018	400	63.89	231.09													
13	BCE-forest-0	1	2016	900	89.73	239.77													
14	BFM-forest-(	1	2018	900	74.78	254.74													
15	BHS-forest-0	1	2015	2100	71.09	168.06													
16	BIR-forest-0(	1	2017	800	54.33	151.45													
17	BRH-forest-C	1	2013	1000	8.84	20.61													
18	CAP-forest-0	1	2019	700	59.66	222.59													
19	CAP-forest-0	1	2019	800	58.29	171.36													
20	CRH-forest-0	1	2017	1400	35.46	147.1													
21	DFA-forest-0	1	2014	200	57.73	273.59													
22	DFA-forest-0	2	2016	300	60.78	290.87													
23	DFA-forest-0	3	2017	400	59.66	284.08													
24	DFA-forest-0	1	2014	900	31.06	74.69													
25	DFA-forest-0	2	2016	900	31.23	75.26													
26	DFA-forest-0	1	2017	800	41.21	169													
27	EBM-forest-(	1	2014	2000	44.32	138.01													
28	EBM-forest-(	1	2014	4600	22.4	40.87													
29	EBM-forest-(	1	2014	1600	88.07	421.78													
30	EBM-forest-(	1	2014	600	58	150.5													
31	FPC-forest-0	1	2015	1400	89.58	402.59													
32	FPC-forest-0	1	2015	1000	34.27	120.11													
33	FPC-forest-0	1	2015	1000	64.09	238.41													
34	FPC-forest-0	1	2015	1500	64.03	212.92													
35	FPC-forest-0	1	2014	800	22.95	56.57													
36	FPC-forest-0	1	2014	1800	31.38	78.92													
37	FPC-forest-0	1	2014	1600	37.89	89.32													
38	FPC-forest-0	1	2014	1100	30.42	47.02													

Need location information for map visualizations

Field Sites information download screen



[Harvard Forest](#) > [Schoolyard LTER Database](#) > [Field Sites](#)

Schoolyard LTER Database

Field Sites

Changing Forests /All Schools

[Download file](#)

Project: [Fall-Spring Phenology](#) [Hemlock Woolly Adelgid](#) [Vernal Pools](#) [Streams](#) [Changing Forests](#) [All](#)

School: [Clear Search](#)

Search for: [Clear Search](#)

Order By: [id](#) [site](#) [school](#) [project](#) [long](#) [elev](#) [town](#) [state](#) [landuse](#)

Site code=school-project-site. [School codes](#). Project codes: buds=Fall-Spring Phenology, hwa=Hemlock Woolly Adelgid, vernal=Vernal Pools, stream=Streams, forest=Changing Forests.

Location codes: on-site=on school property, off-site=off school property. Land use codes: natural=not landscaped / native vegetation, edge=boundary, modified=landscaped / non-native vegetation.

ID	Data	Surveys	School Code	Project Code	Site ID	Start Year	End Year	Loc	Latitude (deg)	Longitude (deg)	Elevation (m)	Town	State	Land Use	Site Notes	Photo
9	APS-forest-001	APS-forest-001	APS	forest	1	2014		on-site	42.5303	-71.1228	26	Reading	MA			
228	APS-forest-002	APS-forest-002	APS	forest	2	2016		on-site	42.5303	-71.1228	26	Reading	MA			
277	ARM-forest-001	ARM-forest-001	ARM	forest	1	2018		on-site	42.5739	-72.2128	265	Athol	MA	natural		
278	ARM-forest-002	ARM-forest-002	ARM	forest	2	2018		on-site	42.5739	-72.2128	265	Athol	MA	natural		
	ATH-	ATH-forest						on-								

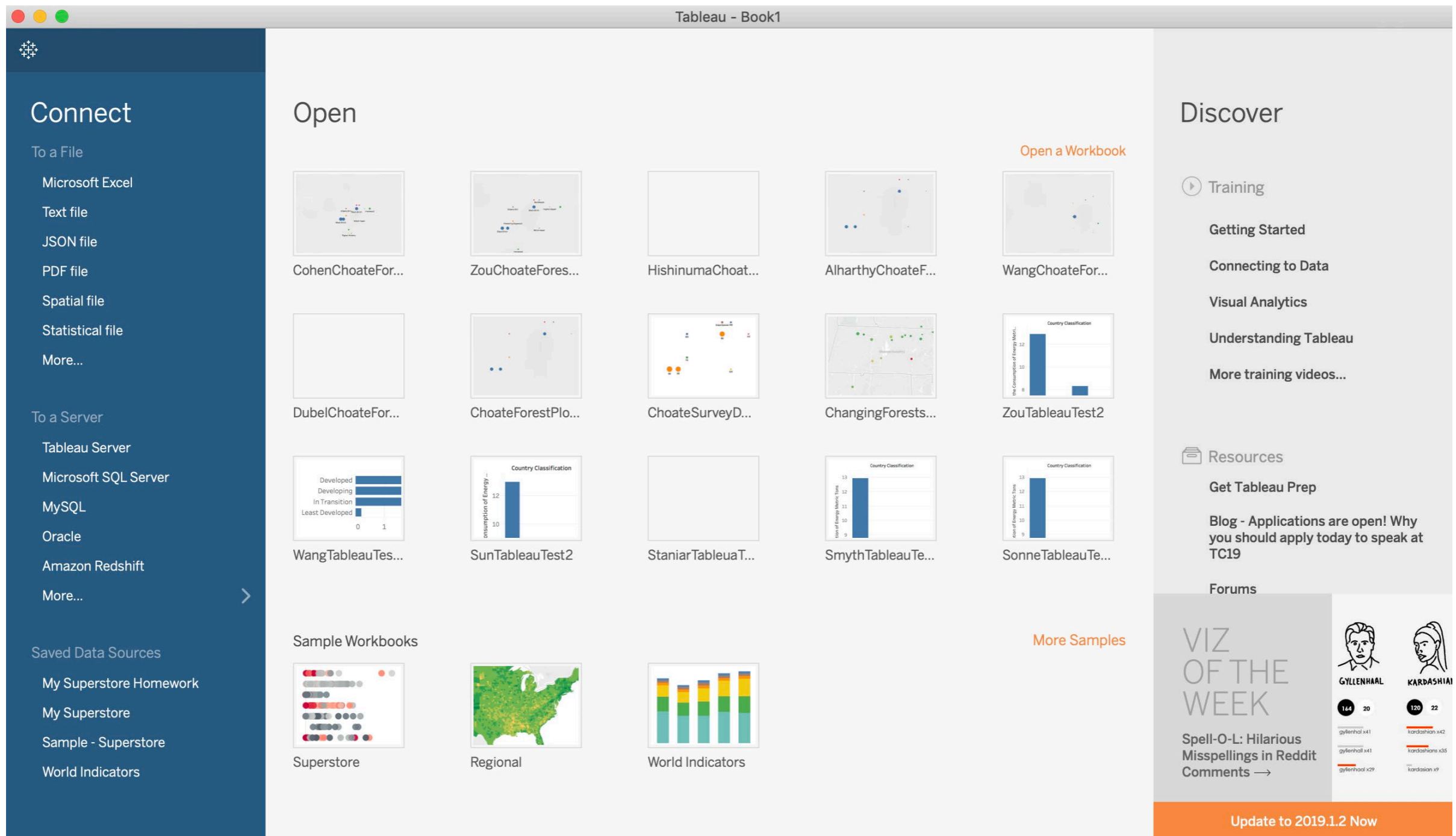
Changing Forests, ALL SCHOOLS, Download file

Field Sites data .csv file

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	Site Code	School Code	Project Code	Site ID	Start Year	End Year	Loc	Latitude (deg	Longitude (d	Elevation (m	Town	State	Land Use	Site Notes					
2	APS-forest-0	APS	forest	1	2014	NA	on-site	42.5303	-71.1228	26	Reading	MA	NA	NA					
3	APS-forest-0	APS	forest	2	2016	NA	on-site	42.5303	-71.1228	26	Reading	MA	NA	NA					
4	ARM-forest-	ARM	forest	1	2018	NA	on-site	42.5739	-72.2128	265	Athol	MA	natural	NA					
5	ARM-forest-	ARM	forest	2	2018	NA	on-site	42.5739	-72.2128	265	Athol	MA	natural	NA					
6	ATH-forest-0	ATH	forest	1	2013	NA	on-site	42.5814	-72.2038	259	Athol	MA	NA	NA					
7	ATH-forest-0	ATH	forest	2	2014	NA	on-site	42.5814	-72.2038	259	Athol	MA	NA	NA					
8	ATH-forest-0	ATH	forest	3	2014	NA	on-site	42.5814	-72.2038	259	Athol	MA	NA	NA					
9	AWH-forest-	AWH	forest	1	2016	NA	on-site	42.5925	-71.8087	207	Fitchburg	MA	natural	on Cross Country trail above the vegetable garden					
10	AWH-forest-	AWH	forest	2	2017	NA	on-site	42.5917	-71.8069	207	Fitchburg	MA	natural	NA					
11	BCE-forest-0	BCE	forest	1	2016	NA	off-site	42.6498	-71.3538	40	Lowell	MA	natural	In a state forest; walk from parking lot in park behind the Wang School; Lowell					
12	BFM-forest-	BFM	forest	1	2018	NA	on-site	71.5828	42.5	111	Harvard	MA	NA	NA					
13	BHS-forest-0	BHS	forest	1	2015	NA	on-site	42.2635	-72.404	136	Belchertown	MA	NA	NA					
14	BHS-forest-0	BHS	forest	2	2016	NA	on-site	42.267	-72.4108	509	Belchertown	MA	edge	on hill above tennis courts					
15	BIR-forest-0	BIR	forest	1	2016	NA	on-site	42.4388	-71.2996	NA	Lincoln	MA	edge	sloped plot is in forest area that borders street on one side and developed sc					
16	BRH-forest-0	BRH	forest	1	2013	NA	on-site	42.3328	-71.1287	68	Brookline	MA	NA	NA					
17	CAP-forest-0	CAP	forest	1	2018	NA	NA	41.8754	-71.9449	119	Pomfret Cen	CT	NA	NA					
18	CAP-forest-0	CAP	forest	2	2018	NA	on-site	41.8754	-71.9449	119	Pomfret	CT	natural	near Alfalfa Hill on right of trail					
19	CBS-forest-0	CBS	forest	1	2018	NA	on-site	42.5069	-70.9512	23	Peabody	MA	modified	School playground site. Trees line the edge of the boundary fence.					
20	CBS-forest-0	CBS	forest	2	2018	NA	on-site	42.5069	-70.9512	23	Peabody	MA	modified	School playground site. Trees line the edge of the boundary fence.					
21	CRH-forest-0	CRH	forest	1	2017	NA	on-site	41.4586	-72.7886	105	Wallingford	CT	natural	2nd growth forest about 50 years old					
22	DFA-forest-0	DFA	forest	1	2014	NA	on-site	42.407	-71.3272	68	Lincoln	MA	edge	in the old deer enclosure at Drumlin Farm					
23	DFA-forest-0	DFA	forest	2	2014	NA	on-site	42.4068	-71.3296	68	Lincoln	MA	NA	NA					
24	DFA-forest-0	DFA	forest	3	2017	NA	on-site	42.4082	-71.2346	68	Lincoln	MA	edge	small forest fragment in front of Drumlin Farm Preschool					
25	DIS-forest-0	DIS	forest	1	2017	NA	off-site	41.2152	-73.2328	70	Bridgeport	CT	natural	site is located behind Adventure Park white house; off of the trail					
26	EBM-forest-	EBM	forest	1	2014	NA	on-site	42.5413	-72.5957	100	Deerfield	MA	NA	NA					
27	EBM-forest-	EBM	forest	2	2014	NA	on-site	42.5413	-72.5957	100	Deerfield	MA	NA	NA					
28	EBM-forest-	EBM	forest	3	2014	NA	on-site	42.5413	-72.5957	100	Deerfield	MA	NA	NA					
29	EBM-forest-	EBM	forest	4	2014	NA	on-site	42.5413	-72.5957	100	Deerfield	MA	NA	NA					
30	FPC-forest-0	FPC	forest	1	2015	NA	on-site	42.5501	-71.6062	73	Devens	MA	NA	NA					
31	FPC-forest-0	FPC	forest	2	2015	NA	on-site	42.5501	-71.6062	73	Devens	MA	NA	NA					
32	FPC-forest-0	FPC	forest	3	2015	NA	on-site	42.5501	-71.6062	73	Devens	MA	NA	NA					
33	FPC-forest-0	FPC	forest	4	2015	NA	on-site	42.5501	-71.6062	73	Devens	MA	NA	NA					
34	FPC-forest-0	FPC	forest	9	2014	NA	on-site	42.5501	-71.6062	73	Devens	MA	NA	On steep bank leading to vernal pool; just off main jeep trail.					
35	FPC-forest-0	FPC	forest	10	2014	NA	on-site	42.5501	-71.6062	73	Devens	MA	NA	Just off to right from main jeep trail; just beyond path down to vernal pool.					
36	FPC-forest-0	FPC	forest	11	2014	NA	on-site	42.5501	-71.6062	73	Devens	MA	NA	Left off main jeep trail above vernal pool.					
37	FPC-forest-0	FPC	forest	12	2014	NA	on-site	42.5501	-71.6062	73	Devens	MA	NA	Left off main jeep trail; opposite path to vernal pool.					

Latitude, Longitude, and Site Code

Tableau Desktop opening screen



Connect To a File: Text file (data not imported)

Tableau Data Source screen

The screenshot shows the Tableau Data Source interface for a connection named 'ChangingForestsbySite'. The connection is a Text file. The data source is 'ChangingForestsbySite.csv'. The interface includes a 'Connections' pane on the left, a 'Files' pane with a 'Use Data Interpreter' checkbox, and a 'New Union' button. The main area displays a table of data with 88 rows. The table has columns for Site Code, Survey, Year, Stand Density (tre...), Basal Area (m2/ha), and Carbon Biomass (...). A 'Go to Worksheet' tooltip is visible over the table.

Site Code	Survey	Year	Stand Density (tre...)	Basal Area (m2/ha)	Carbon Biomass (...)
APS-forest-001	1	2014	2,600	79.180	241.640
APS-forest-002	1	2016	1,400	23.390	67.610
APS-forest-002	2	2017	1,300	24.270	71.100
ATH-forest-001	1	2013	2,400	116.620	409.750
ATH-forest-002	1	2014	2,000	169.320	423.330
ATH-forest-003	1	2014	1,300	33.820	89.750
AWH-forest-001	1	2016	1,000	70.590	212.230
AWH-forest-001	2	2017	1,000	74.030	224.690
AWH-forest-001	3	2018	1,000	79.490	244.750
AWH-forest-002	1	2017	400	60.790	217.740

Changing Forests data, Add file for location data

Tableau Data Source screen joined data

Tableau - Book1

ChangingForestsbySite.csv+ (Multiple Connections)

Connection: Live Extract

Filters: 0 | [Add](#)

Connections: [Add](#)

- ChangingForestsbySite (Text file)
- FieldSites (Text file)

Files

- Use Data Interpreter
Data Interpreter might be able to clean your Text file workbook.
- ChangingForestsbySite.csv
- FieldSites.csv
- OurChangingF...rgedData.csv
- [New Union](#)

Sort fields: Data source order

Show aliases Show hidden fields 88 rows

Site Code	Survey	Year	Stand Density (tre...	Basal Area (m2/ha)	Carbon Biomass (...)	Site Code (FieldSit...	School Code	Project
APS-forest-001	1	2014	2,600	79.180	241.640	APS-forest-001	APS	fore
APS-forest-002	2	2017	1,300	24.270	71.100	APS-forest-002	APS	fore
APS-forest-002	1	2016	1,400	23.390	67.610	APS-forest-002	APS	fore
ATH-forest-001	1	2013	2,400	116.620	409.750	ATH-forest-001	ATH	fore
ATH-forest-002	1	2014	2,000	169.320	423.330	ATH-forest-002	ATH	fore
ATH-forest-003	1	2014	1,300	33.820	89.750	ATH-forest-003	ATH	fore
AWH-forest-001	3	2018	1,000	79.490	244.750	AWH-forest-001	AWH	fore
AWH-forest-001	2	2017	1,000	74.030	224.690	AWH-forest-001	AWH	fore
AWH-forest-001	1	2016	1,000	70.590	212.230	AWH-forest-001	AWH	fore

Go to Worksheet

Data Source | Sheet 1

Joined by Site Code in both files

Tableau Data Source screen data types

Tableau - Book1

ChangingForestsbySite.csv+ (Multiple Connections)

Connection: Live Extract

Filters: 0 | Add

Connections: ChangingForestsbySite (Text file), FieldSites (Text file)

Files: Use Data Interpreter (Data Interpreter might be able to clean your Text file workbook), ChangingForestsbySite.csv, FieldSites.csv, OurChangingF...rgedData.csv, New Union

Sort fields: Data source order

Show aliases: Show hidden fields: 88 rows

FieldSites.csv	FieldSites.csv	FieldSites.csv	FieldSites.csv	FieldSites.csv	FieldSites.csv	FieldSites.csv	FieldSites.csv	FieldSites.csv
End Year	Loc	Latitude (deg)	Longitude (deg)	Elevation (m)	Town	State	Land Use	Site Notes
NA	on-site	42.5303	-71.123	26.000	Reading	MA	NA	NA
NA	on-site	42.5303	-71.123	26.000	Reading	MA	NA	NA
NA	on-site	42.5303	-71.123	26.000	Reading	MA	NA	NA
NA	on-site	42.5814	-72.204	259.000	Athol	MA	NA	NA
NA	on-site	42.5814	-72.204	259.000	Athol	MA	NA	NA
NA	on-site	42.5814	-72.204	259.000	Athol	MA	NA	NA
NA	on-site	42.5925	-71.809	207.000	Fitchburg	MA	natural	on Cross Country trai...
NA	on-site	42.5925	-71.809	207.000	Fitchburg	MA	natural	on Cross Country trai...
NA	on-site	42.5925	-71.809	207.000	Fitchburg	MA	natural	on Cross Country trai...

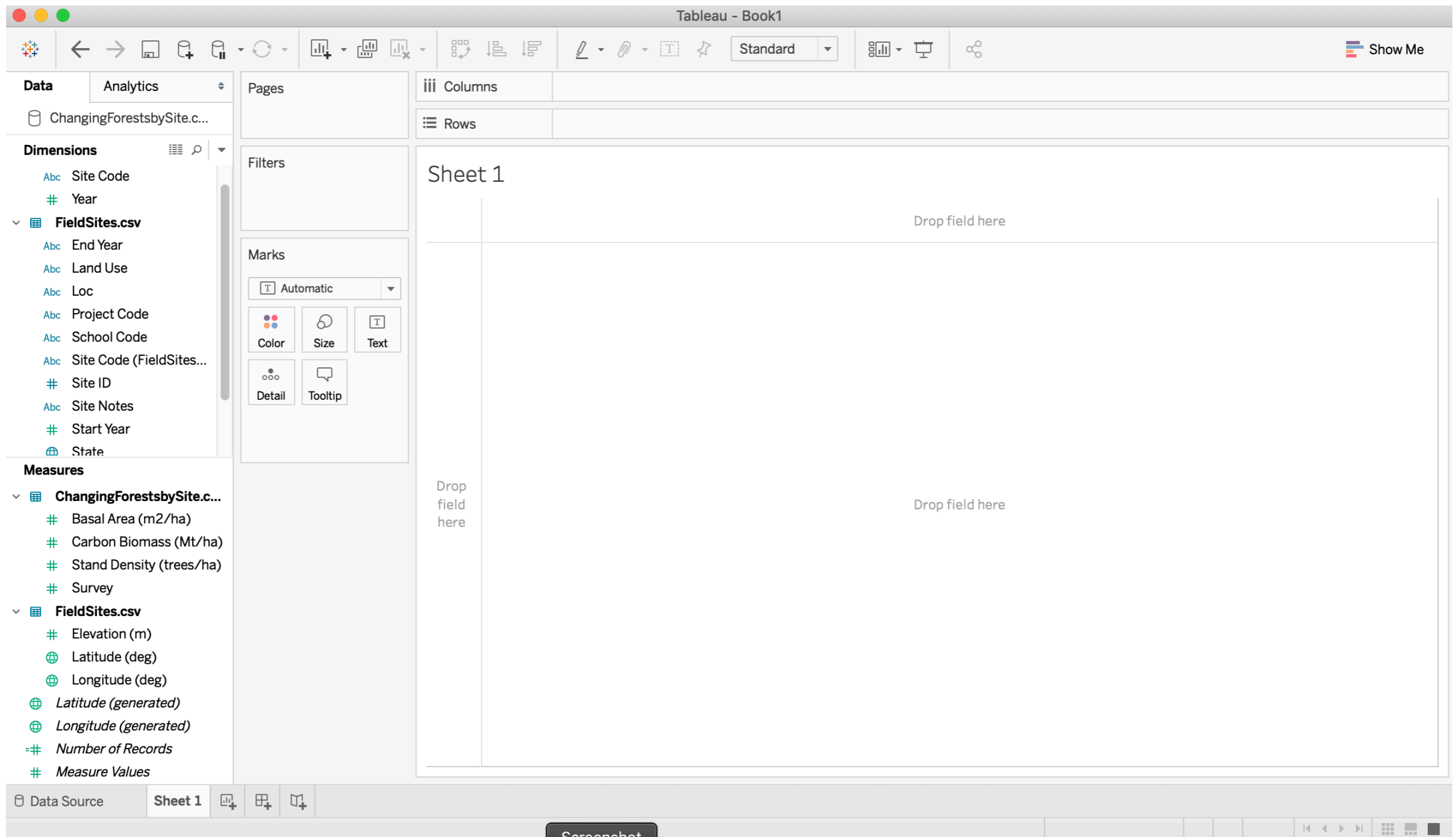
Data Source | Sheet 1

Go to Worksheet

Screenshot

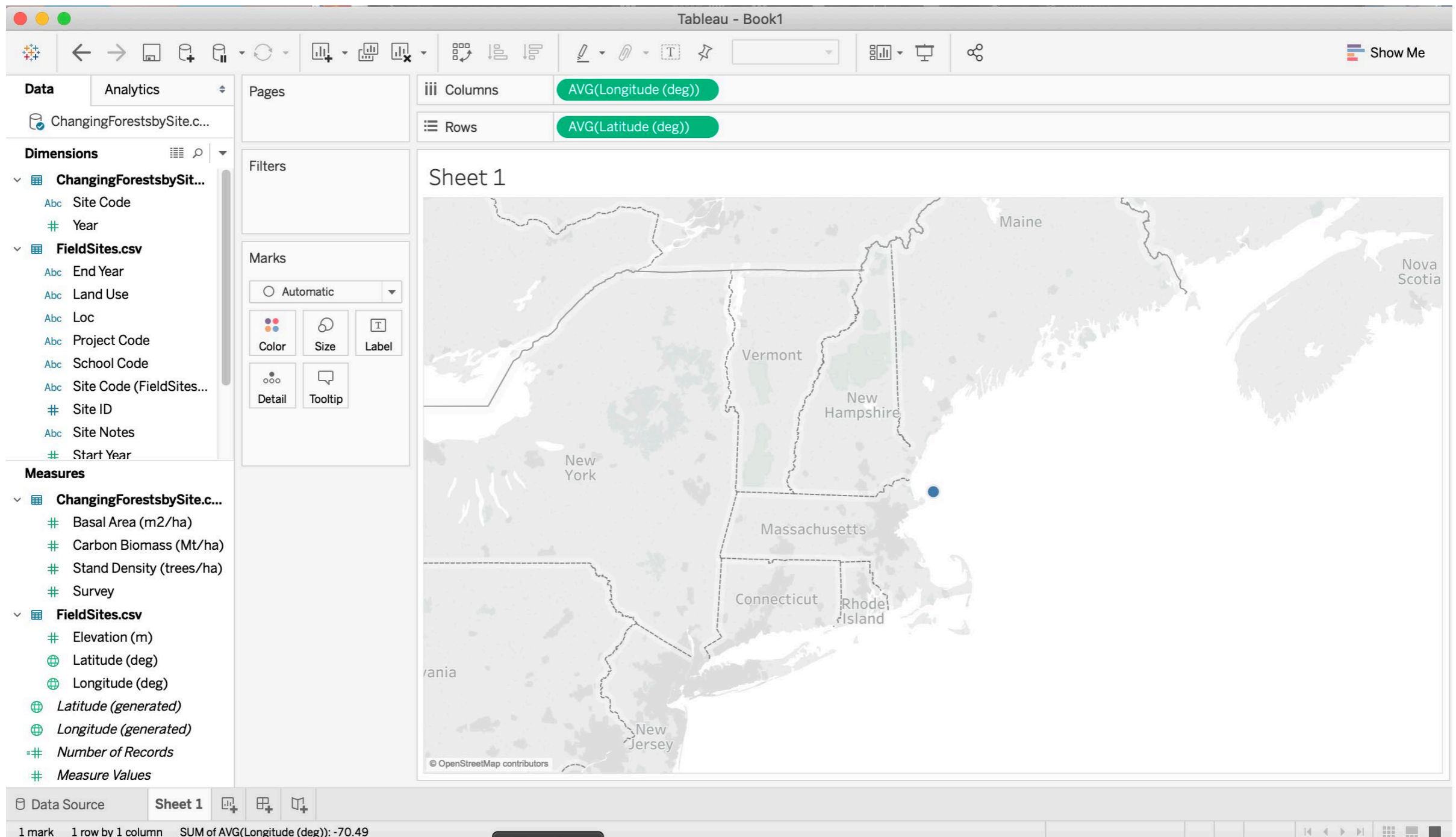
String, Geo, Number

Tableau Worksheet layout



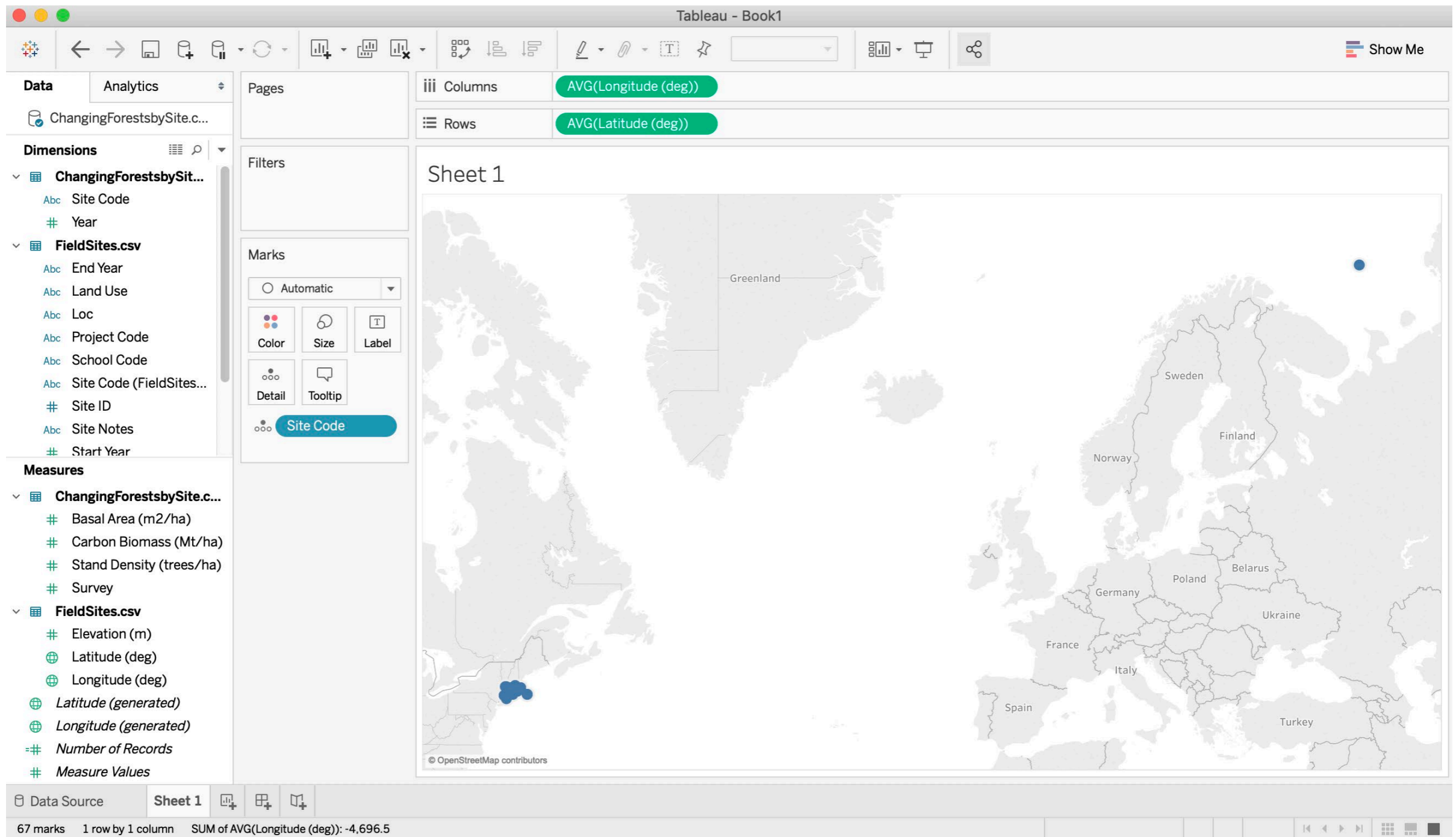
Click on Sheet 1: Columns = x-axis, Rows = y-axis

Tableau Map plot: AVG Lat and Lon



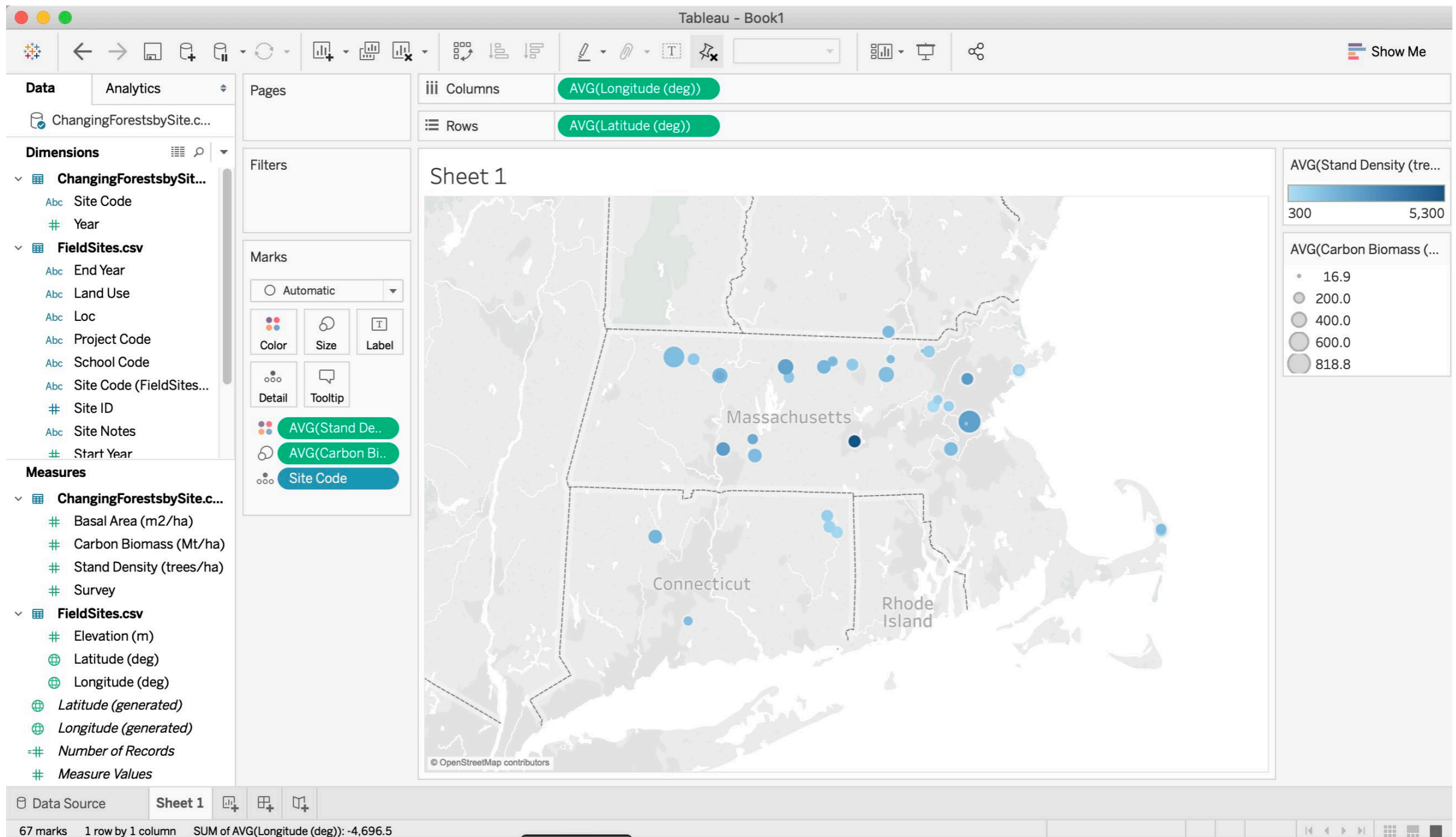
Drag Longitude to Columns and Latitude to Rows

Tableau Map plot: by Site Code



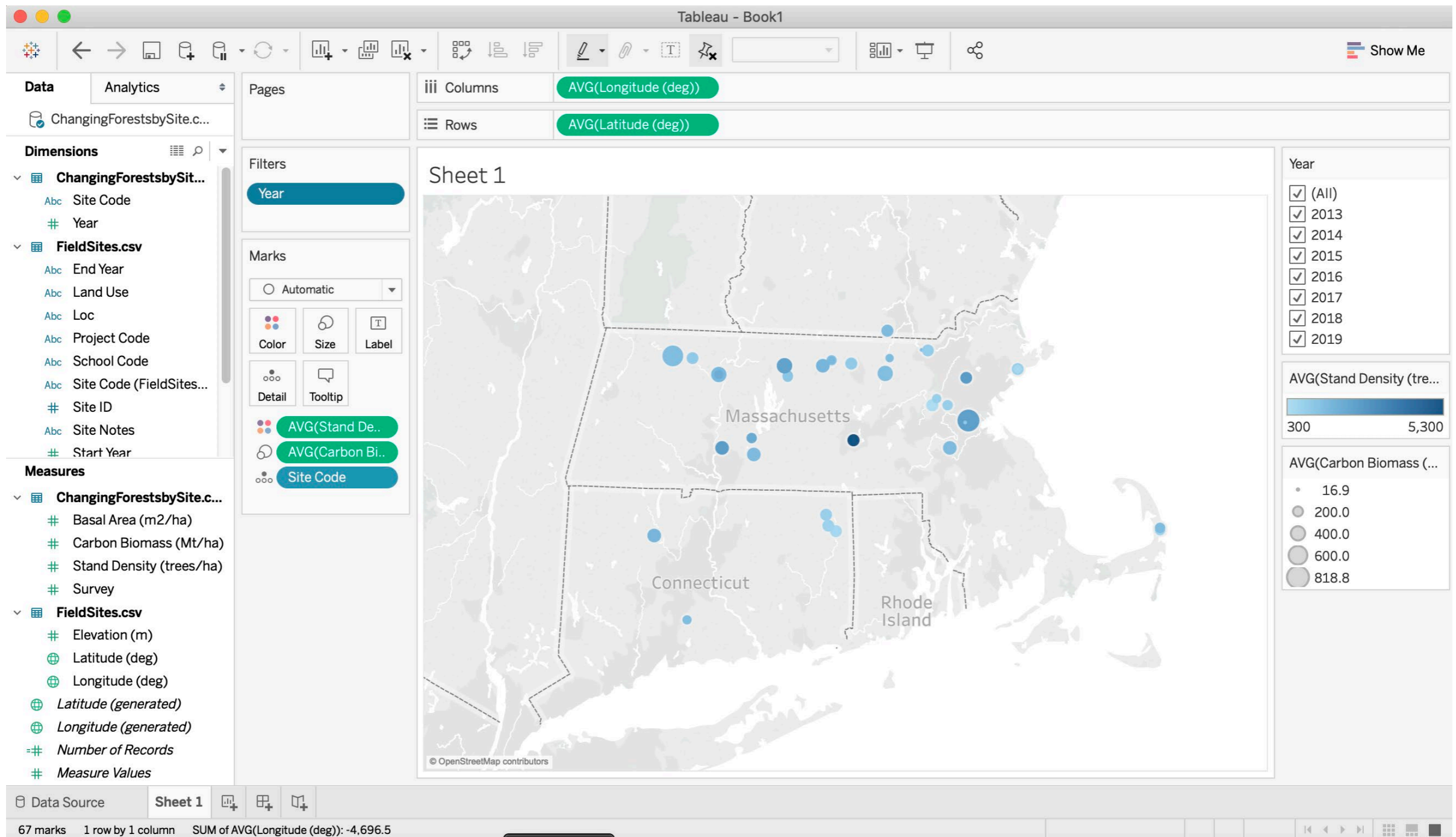
Drag Site Code to Details box

Tableau Map plot: adding more data



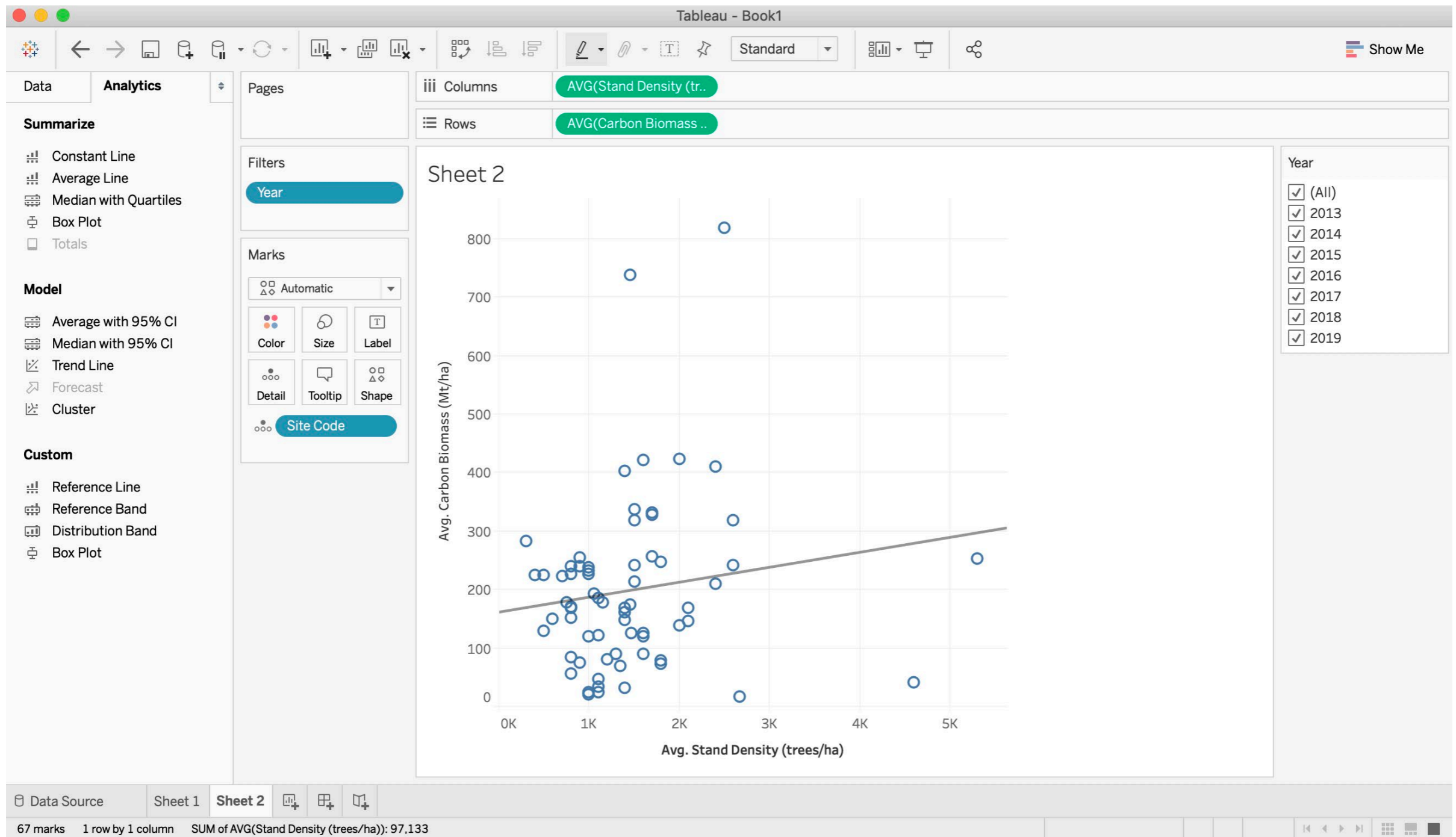
Drag Stand Density to Color and Carbon Biomass to Size

Tableau Map plot: filter data



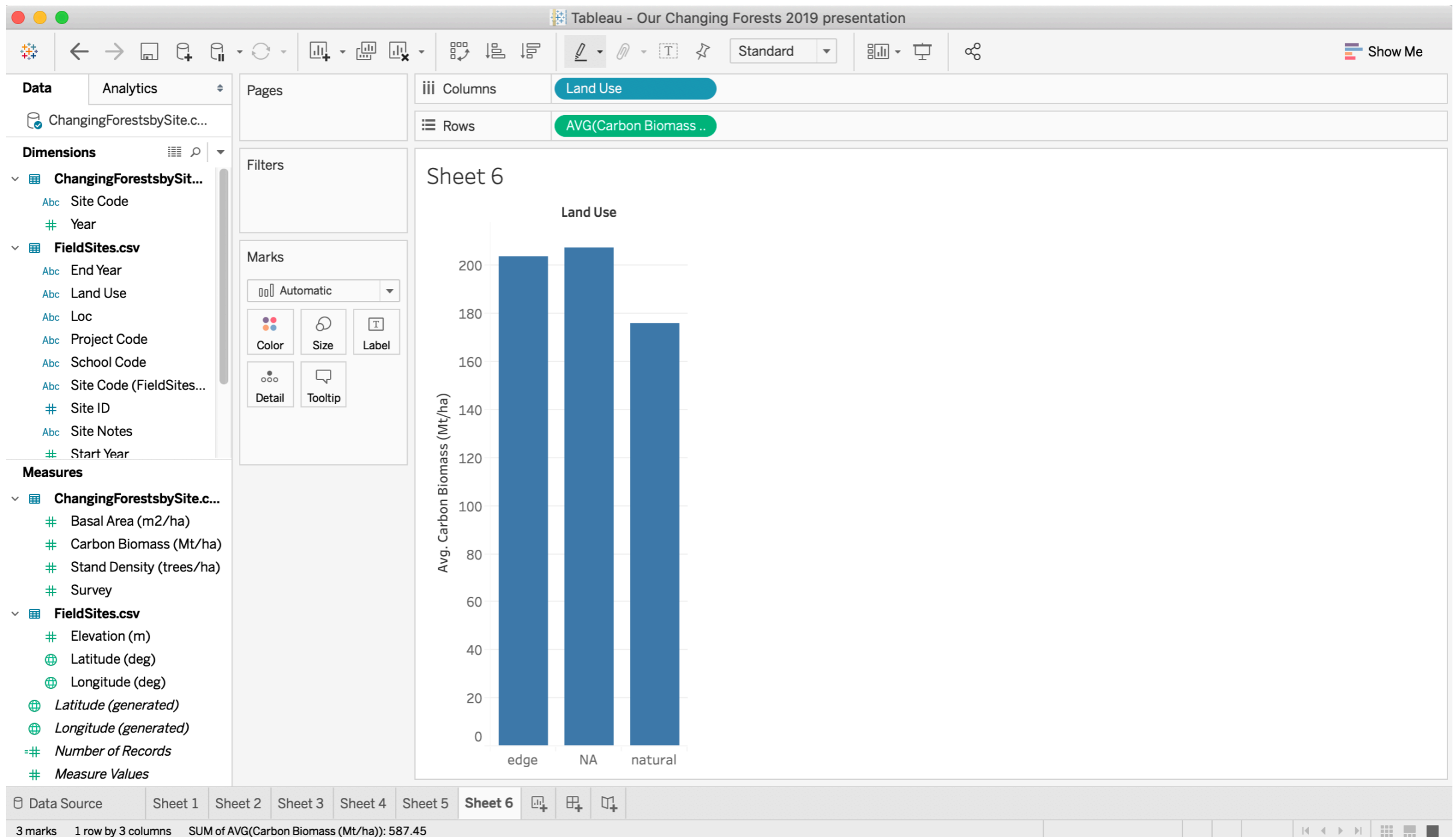
AVG of all Years, Drag Year to Filters

Tableau Scatter Plot with Linear Trend Line



Continuous variables to Columns and Rows

Tableau Bar Graphs



Categorical variable to Columns and continuous to Rows

ArcGIS Online Screen

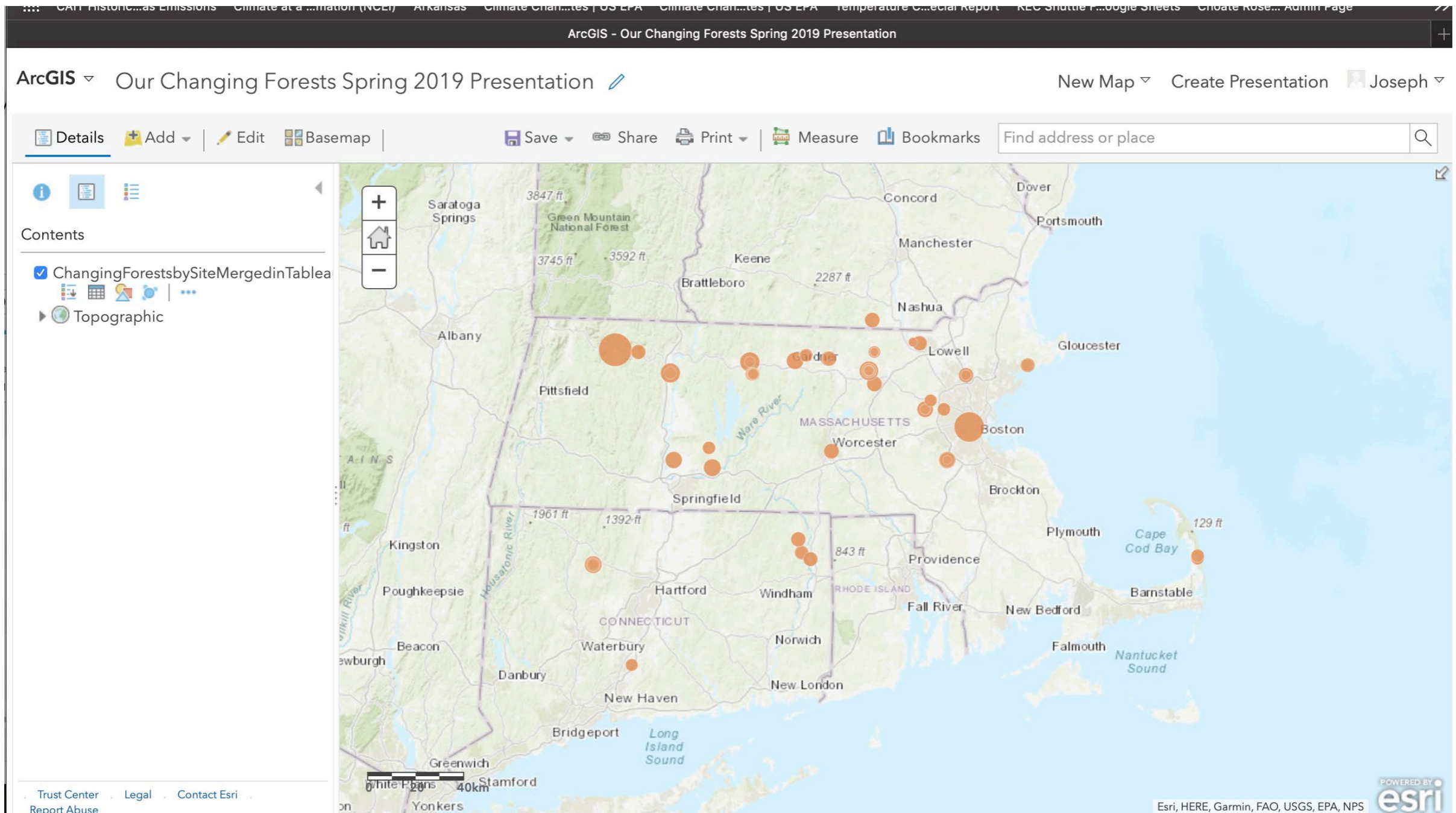
The screenshot displays the ArcGIS Online interface. At the top, a dark header bar contains the text "ArcGIS - Our Changing Forests Spring 2019 Presentation" and a plus sign icon. Below this, the main navigation bar includes "ArcGIS" with a dropdown arrow, the current map title "Our Changing Forests Spring 2019 Presentation" with an edit icon, and user options "New Map" with a dropdown arrow, "Create Presentation", and the user name "Joseph" with a dropdown arrow. A secondary toolbar below the navigation bar features icons for "Details", "Add", "Basemap", "Save", "Share", "Print", "Measure", and "Bookmarks", followed by a search box labeled "Find address or place".

The central map area shows a topographic view of the North Atlantic. Labeled geographical features include "GREENLAND", "Baffin Bay", "Davis Strait", "Hudson Bay", "CANADA", "UNITED STATES", "APPALACHIAN MTNS", "GREENLAND SEA", "NORWEGIAN SEA", "SWEDEN", "FINLAND", "NORWAY", "UNITED KINGDOM", "GERMANY", "POLAND", "UKRAINE", "FRANCE", "ITALY", "GREECE", "TURKEY", "URAL MOUNTAINS", "KAZAKHSTAN", "ALGERIA", "LIBYA", "EGYPT", "IRAN", and "ARABIA". A scale bar at the bottom left of the map indicates distances of 0, 1000, and 2000 km. The "esri" logo is visible in the bottom right corner of the map area.

On the left side, a "Contents" panel is open, showing a single layer named "Topographic" with a globe icon and three dots to its right. Below the map, a footer contains links for "Trust Center", "Legal", "Contact Esri", and "Report Abuse".

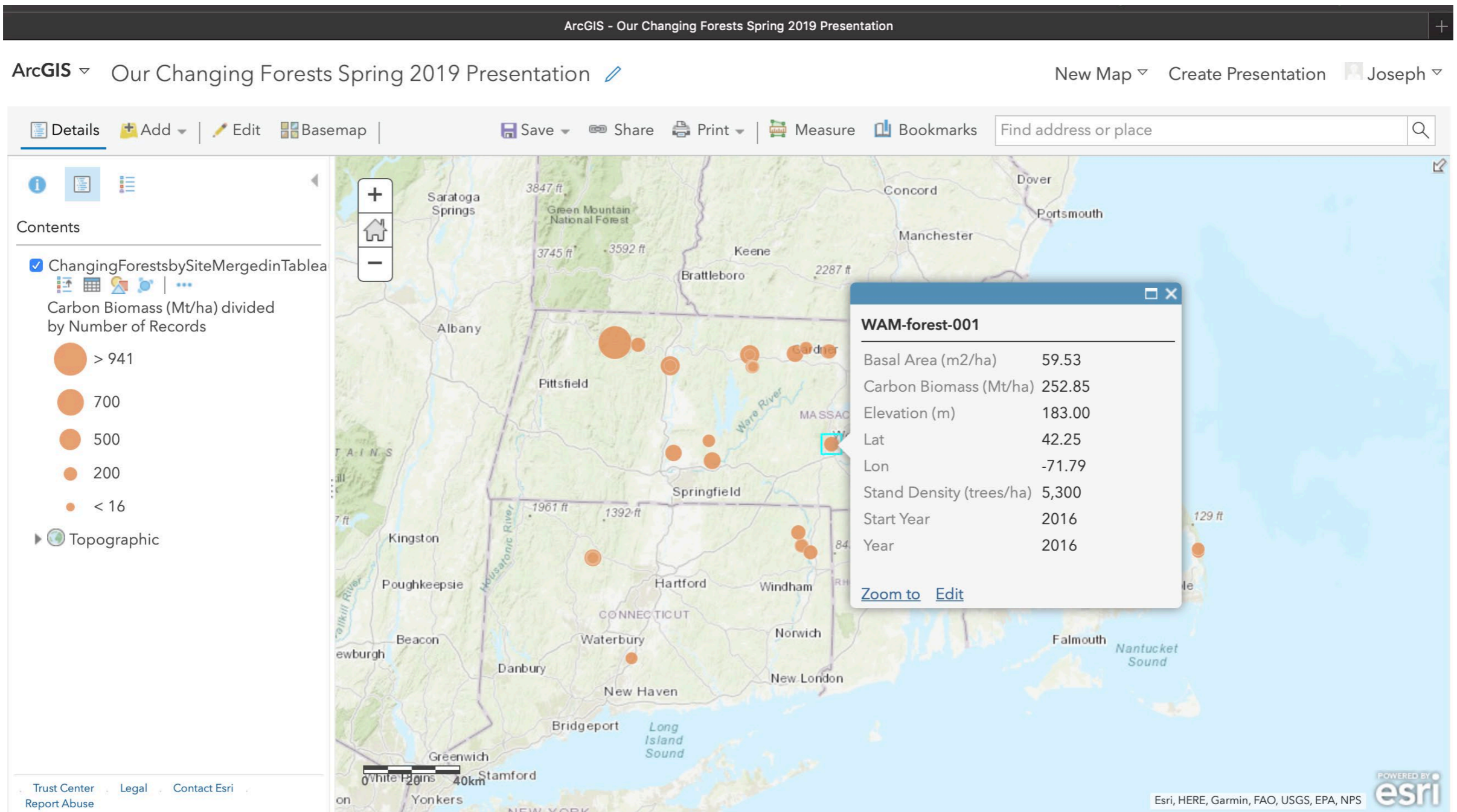
New Map from ArcGIS Online free account

ArcGIS Carbon Biomass



Drag merged data .csv exported from Tableau to map

ArcGIS Carbon Biomass with Pop-up



Configure Pop-up from ... in layer

ArcGIS Choate trees with Pop-up

The screenshot displays the ArcGIS web interface for a map titled "ChoateForestPlot1". The interface includes a top navigation bar with "ArcGIS" and "ChoateForestPlot1", and a search bar. The main map area shows an aerial view of a forest with several colored circular markers representing individual trees. A pop-up window is open over one of the markers, displaying the following information:

Ironwood (*Ostrya virginiana*)

Lat	41.45871
Lon	-72.78855
Dbh_cm_Fall2017	13.00
Dbh_cm_Fall2018	13.20

Below the table is a photograph of an Ironwood tree in a forest setting. At the bottom of the pop-up window are links for "Zoom to" and "Edit".

The left sidebar shows the "Contents" panel with a legend for "Changing Forests Survey Data GIS Format". The legend includes a list of tree species with corresponding colored circles: Black Birch (red), Witch Hazel (blue), Ironwood (green), Red Maple (purple), Flowering Dogwood (orange), Grape (yellow), Hophornbeam (grey), Pignut Hickory (pink), and Slipery Elm (teal). Below the species list is a legend for "Dbh_cm_Fall2018" with three circle sizes representing diameters: > 40, 30, and 20.

The bottom of the interface features a scale bar (0 to 6 meters) and the Esri logo with the text "POWERED BY esri" and "CRCOG/State of CT, Microsoft".

Can plot individual trees and link to images

ArcGIS .csv file

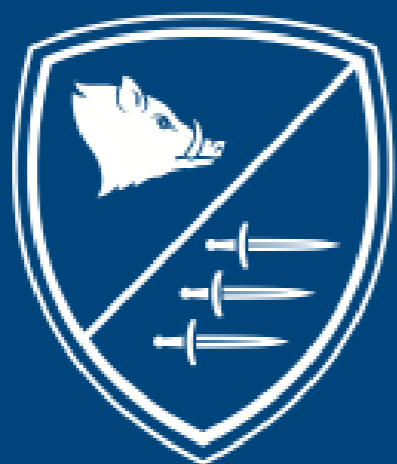
AutoSave OFF Changing Forests Survey Data GIS Format

Home Insert Draw Page Layout Formulas Data Review View

Possible Data Loss Some features might be lost if you save this workbook in the comma-delimited (.csv) format. To preserve these features, save it in an Excel file format. Save

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1	ID	Site_Code	Teacher	Lat	Lon	Date	Julian	Survey	Tree_ID	Species_Cod	Common_Na	Scientific_Na	Dbh_cm_Fal	Dbh_cm_Fal	Image1TH	Image1				
2				41.45872	-72.7886				1	Grape Specie	Grape	Vitis sp.	6.1	6.5	https://dl.dr...	https://dl.dropboxusercontent.com/s/w9cj09nicqdw90x/01.JPG?				
3	935	CRH-forest-0	Scanio	41.45872	-72.78859	10/11/17	284	1	2	RM	Red Maple	Acer rubrum	4.7	5.13	https://dl.dr...	https://dl.dropboxusercontent.com/s/rjzbzxs0bs716aj/02.JPG?dl				
4	936	CRH-forest-0	Scanio	41.45871	-72.7886	10/11/17	284	1	3	BB	Black Birch	Betula lenta	36	36.32	https://dl.dr...	https://dl.dropboxusercontent.com/s/umgyesrdq90gxw/03.JPG				
5	937	CRH-forest-0	Scanio	41.45871	-72.78864	10/11/17	284	1	4	SL	Slipery Elm	Ulmus rubra	6	6.4	https://dl.dr...	https://dl.dropboxusercontent.com/s/9wzk3t1x01umoav/04.JPG				
6	938	CRH-forest-0	Scanio	41.45871	-72.78864	10/11/17	284	1	5	RM	Red Maple	Acer rubrum	6	6.3	https://dl.dr...	https://dl.dropboxusercontent.com/s/v1tumtk8ppexme1/05.JPG				
7	939	CRH-forest-0	Scanio	41.45869	-72.78864	10/11/17	284	1	6	FD	Flowering Dr	Cornus florid	6.2	6.3	https://dl.dr...	https://dl.dropboxusercontent.com/s/kgkg77sorxcj8oo/06.JPG?d				
8	940	CRH-forest-0	Scanio	41.45868	-72.78865	10/11/17	284	1	7	BB	Black Birch	Betula lenta	34.7	36.01	https://dl.dr...	https://dl.dropboxusercontent.com/s/lte2a7ipmhbrz3k/07.JPG?c				
9	941	CRH-forest-0	Scanio	41.45868	-72.78866	10/11/17	284	1	8	BB	Black Birch	Betula lenta	40.3	40.39	https://dl.dr...	https://dl.dropboxusercontent.com/s/xehzm6qdcuk91au/08.JPG				
10	942	CRH-forest-0	Scanio	41.45864	-72.78862	10/11/17	284	1	9	WH	Witch Hazel	Hamamelis v	2.7	2.85	https://dl.dr...	https://dl.dropboxusercontent.com/s/lhju4a1um0bwddq9/09.JPG				
11	943	CRH-forest-0	Scanio	41.45864	-72.78863	10/11/17	284	1	10	PH	Pignut Hickoi	Carya glabra	2.7	2.77	https://dl.dr...	https://dl.dropboxusercontent.com/s/49abub3z9cm1wtr/10.JPG				
12	944	CRH-forest-0	Scanio	41.45865	-72.78863	10/11/17	284	1	11	IW	Ironwood	Ostrya virgin	6.9	7	https://dl.dr...	https://dl.dropboxusercontent.com/s/daruff6yffnww1o/11.JPG?c				
13	945	CRH-forest-0	Scanio	41.45868	-72.78859	10/11/17	284	1	12	WH	Witch Hazel	Hamamelis v	3.2		https://dl.dr...	https://dl.dropboxusercontent.com/s/kol5nv1erc68kp7/12.JPG?d				
14	946	CRH-forest-0	Scanio	41.45868	-72.78859	10/11/17	284	1	13	WH	Witch Hazel	Hamamelis v	2.7		https://dl.dr...	https://dl.dropboxusercontent.com/s/1e0uxn4zazgfi6c/13.JPG?d				
15	947	CRH-forest-0	Scanio	41.45871	-72.78857	10/11/17	284	1	14	HO	Hophornbear	Carpinus car	3	3.22	https://dl.dr...	https://dl.dropboxusercontent.com/s/zhbd622co0le92r/14.JPG?c				
16	948	CRH-forest-0	Scanio	41.45871	-72.78855	10/11/17	284	1	15	IW	Ironwood	Ostrya virgin	13	13.2	https://dl.dr...	https://dl.dropboxusercontent.com/s/5r1o1o3jc8o1f1w/15.JPG?				
17																				
18																				
19																				
20																				
21																				
22																				
23																				
24																				
25																				
26																				
27																				
28																				
29																				
30																				
31																				
32																				

Need Lat and Lon. Note URLs for images



CHOATE
ROSEMARY HALL

Joseph Scanio

T (203) 697-2018

E jscanio@choate.edu