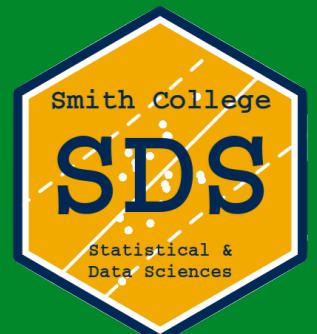


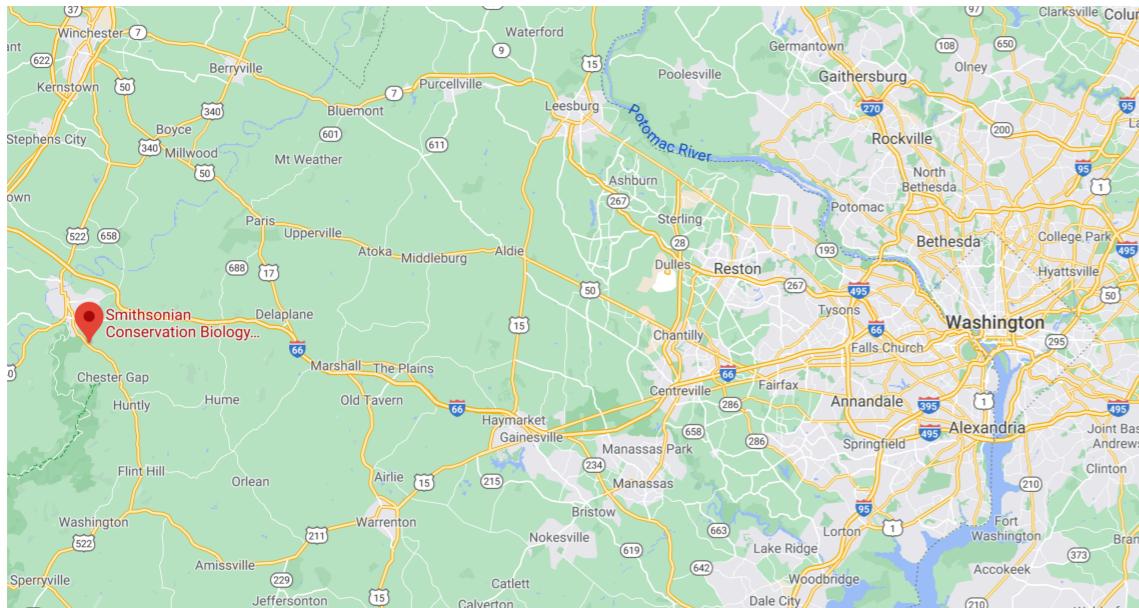
Fusing disparate measurement data for forecasting the growth of trees via Hidden Markov Models



Prof. Albert Y. Kim akim04@smith.edu
US Forest Service
Forest Inventory & Analysis Techniques Research
Band Seminar Series
Wednesday, January 12 2022

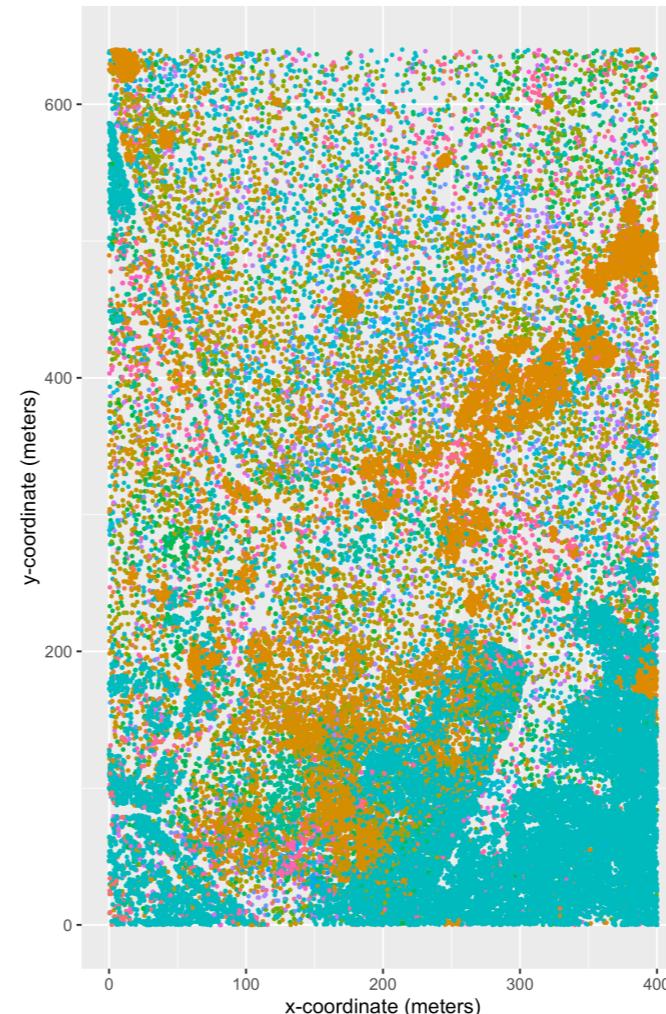


Smithsonian Conservation Biology Institute



25.6 ha = 35.85 soccer fields

Census 2018: 72,555 cataloged trees



species
acne
acpl
acru
acsp
aial
amar
astr
caca
caco
cade
cagl
caovl
casp
cato
ceca
ceoc
chvi
coal
coam
cofl
crpr
crsp
divi
elum
eual
fagr
fram
frni
frpe
frsp
havi
ilve
juci
juni
juvi
libe
litu
loma
nysi
pato
pipu
pist
pivi
ploc
prav
prpe
prse
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qual
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rops
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saca
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ulam
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ulsp
unk
viac
vipr
vire



Tag 082422

Data on GitHub

Searched or jump to... / Pull requests Issues Marketplace Explore

SCBI-ForestGEO / SCBI-ForestGEO-Data Public

Unwatch 5 Fork 6 Star 6

Code Issues 8 Pull requests Actions Projects Wiki Security Insights

master 3 branches 4 tags Go to file Add file Code

teixeirak	Update README.md	23d07b6 on Dec 7, 2021	857 commits
R_scripts	Update visualize_tree_core_data.m	2 years ago	
leaf phenology	Revert "Merge branch 'master' of https://github.com/SCBI..."	2 years ago	
plot disturbances	Update SCBI_plot_disturbance_events.csv	11 months ago	
seedlings	Reloaded cleaned files.	16 months ago	
soils	Update README.md	3 months ago	
spatial_data	move to SCBImortality repo	7 months ago	
species traits	Update README.md	15 months ago	
species_lists	Update insects_pathogens.csv	5 months ago	
summary_data	Update README.md	3 years ago	
tree_cores	Update README.md	last month	
tree_dimensions	Revert "Merge branch 'master' of https://github.com/SCBI..."	2 years ago	
tree_main_census	Fix sp	10 months ago	
tree_mortality	Update README.md	8 months ago	
.gitignore	update	3 years ago	
DESCRIPTION	trying again with removed hyphen	8 months ago	
README.md	Update README.md	3 months ago	
SCBI-ForestGEO-Data.Rproj	create	3 years ago	
_config.yml	Set theme jekyll-theme-cayman	3 years ago	
license.txt	Create license.txt	2 years ago	

README.md

Smithsonian Conservation Biology Institute (SCBI) ForestGEO Data

DOI 10.5281/zenodo.4070038

This is the public data portal for the SCBI ForestGEO plot, which points to archive locations for our

About

Public data repository of the SCBI ForestGEO plot

scbi-forestgeo.github.io/scbi-forestge...

Readme CC-BY-4.0 License 6 stars 5 watching 6 forks

Releases 4

first release with hydraulic tr... Latest on Oct 6, 2020 + 3 releases

Packages

No packages published Publish your first package

Contributors 10

Environments 1

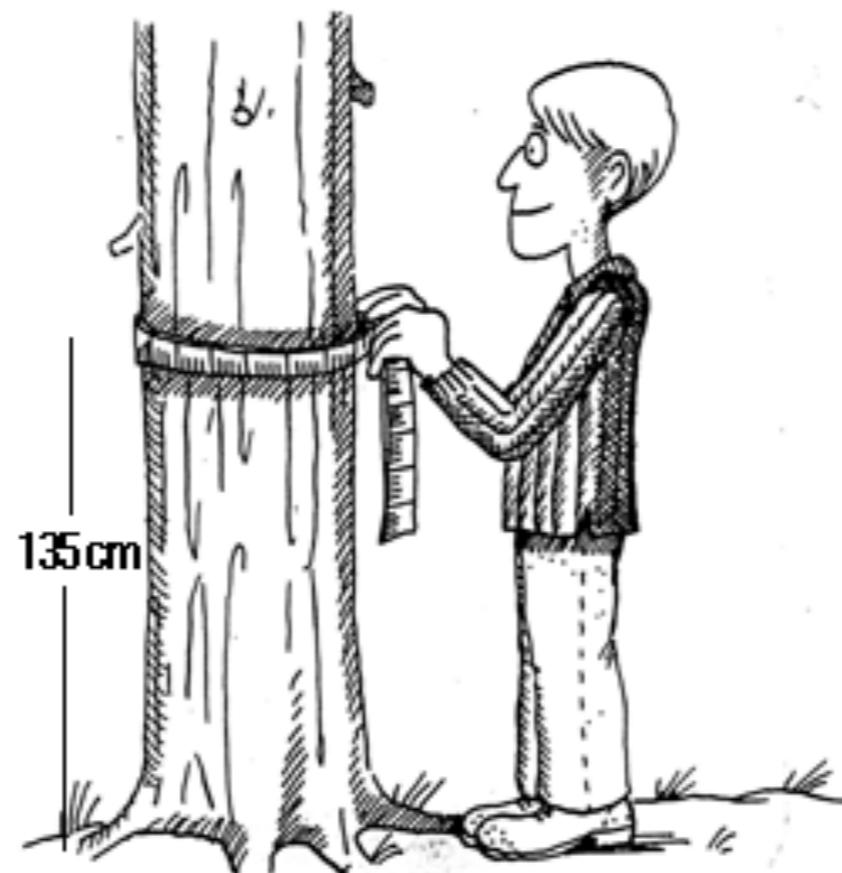
github-pages Active

Languages

R 98.9% MATLAB 1.1%

Diameter at Breast Height (dbh)

After species & location, one of the most informative variables about a tree is dbh



Tree Diameter Data Sources

Data source	Measurement	Cost	Sources of Error?
	Census via tape	Diameter	Cheap Large variation in dbh 
	Tree coring	Ring width increment	Expensive Standardized, cores are dried, no bark effects
	Intraannual dendroband (every 2 weeks)	Diameter (baseline + gap size)	High setup, rapid follow-up Climate induced variation in bark & device (-'ve growth)
	Biannual dendroband (start & end of year)	Diameter (baseline + gap size)	High setup, rapid follow-up Mid-year issues? 

Dendroband measures are highly precise



Dendrometer band measurements

