

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

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US Forest Service

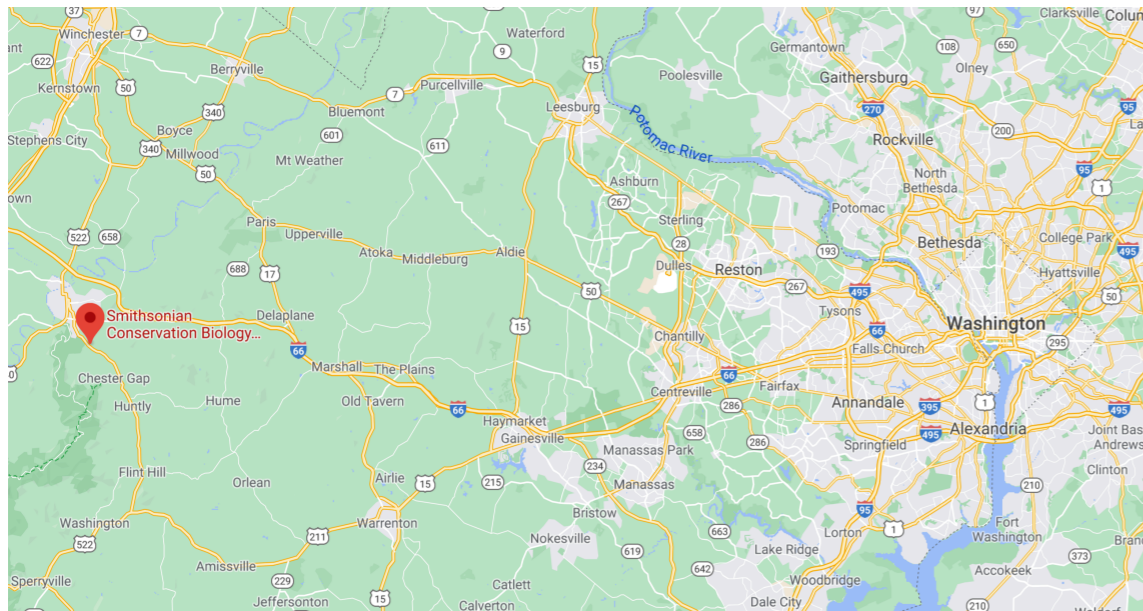
Forest Inventory & Analysis Techniques Research

Band Seminar Series

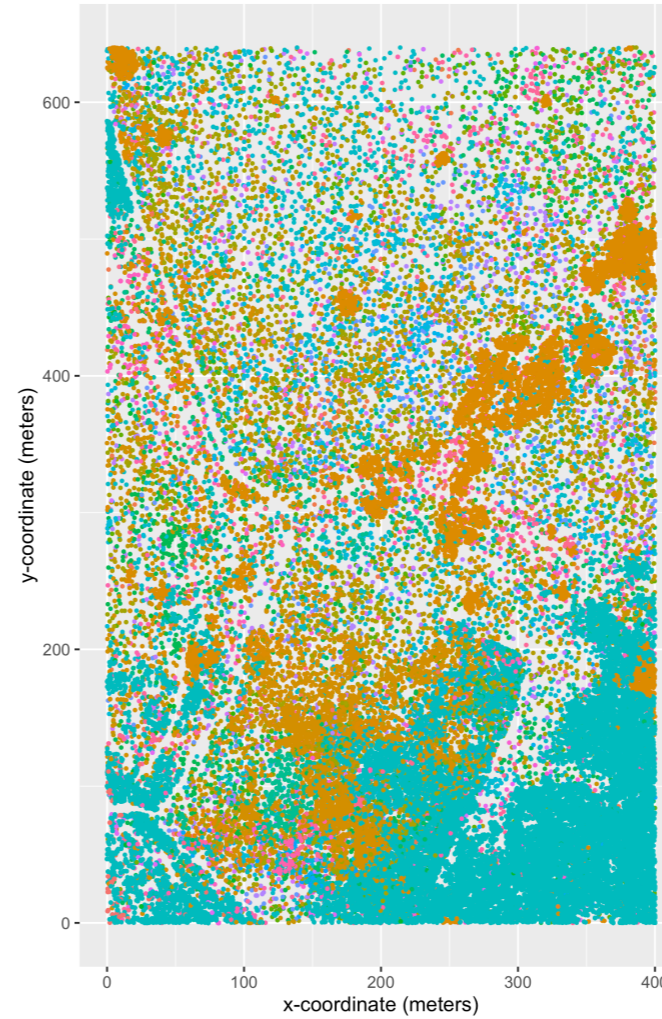
Wednesday, January 12 2022



Smithsonian Conservation Biology Institute



Census 2018: 72,555 cataloged trees



species

- | | | | |
|---------|--------|--------|--------|
| • acne | • coam | • loma | • rhpe |
| • acpl | • cofi | • nysy | • romu |
| • acru | • crpr | • pato | • rops |
| • acsp | • crsp | • pipu | • rual |
| • aial | • divi | • pist | • rupe |
| • amar | • elum | • pivi | • ruhp |
| • astr | • eual | • ploc | • saal |
| • beth | • fagr | • prav | • saca |
| • caca | • fram | • prpe | • tiam |
| • caco | • frni | • prse | • ulam |
| • cade | • frpe | • prsp | • ulru |
| • cagl | • frsp | • qual | • ulsp |
| • caovl | • havi | • quco | • unk |
| • casp | • ilve | • qufa | • viac |
| • cato | • juci | • qumi | • vipr |
| • ceca | • juni | • qupr | • vire |
| • ceoc | • juvi | • quru | |
| • chvi | • libe | • qusp | |
| • coal | • litu | • quve | |



Tag 082422

25.6 ha = 35.85 soccer fields

Data on GitHub

The screenshot shows the GitHub interface for the repository `SCBI-ForestGEO / SCBI-ForestGEO-Data`. The repository is public and has 5 unwatchers, 6 forks, and 6 stars. The main content area displays a list of files and folders, including `R_scripts`, `leaf phenology`, `plot disturbances`, `seedlings`, `soils`, `spatial_data`, `species traits`, `species_lists`, `summary_data`, `tree_cores`, `tree_dimensions`, `tree_main_census`, `tree_mortality`, `.gitignore`, `DESCRIPTION`, `README.md`, `SCBI-ForestGEO-Data.Rproj`, `_config.yml`, and `license.txt`. The repository is managed by `teixeirak` and has 857 commits. The README snippet shows the title `Smithsonian Conservation Biology Institute (SCBI) ForestGEO Data` and the DOI `10.5281/zenodo.4070038`.

Repository Details:

- Repository: SCBI-ForestGEO / SCBI-ForestGEO-Data (Public)
- Unwatch: 5
- Fork: 6
- Star: 6
- Code: <>
- Issues: 8
- Pull requests
- Actions
- Projects
- Wiki
- Security
- Insights

File List:

File/Folder	Last Update	Time Ago
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 SCBI mortality 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

Repository Information:

- Public data repository of the SCBI ForestGEO plot
- 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%

README Snippet:

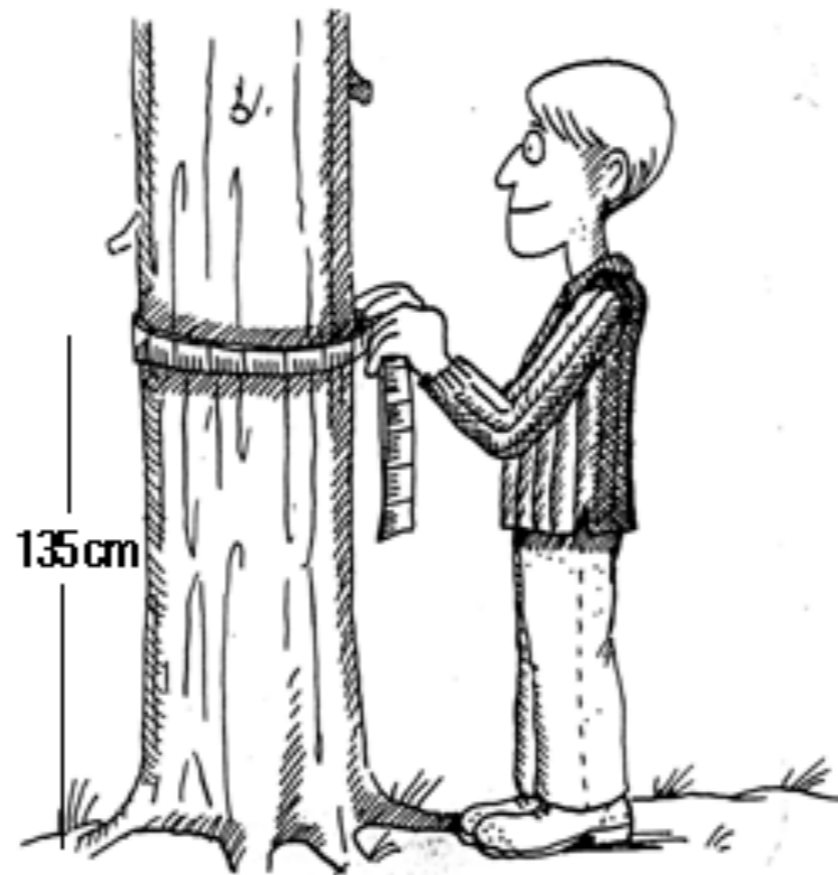
Smithsonian Conservation Biology Institute (SCBI) ForestGEO Data

DOI [10.5281/zenodo.4070038](https://doi.org/10.5281/zenodo.4070038)







This is the public data portal for the [SCBI ForestGEO plot](#), which points to archive locations for our

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  technique
	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	

Dendroband measures are highly precise



Dendrometer band measurements

