



Assessment of the potential for long-term soil carbon sequestration and stabilization in contrasting soils after native forest conversion to planted forests.

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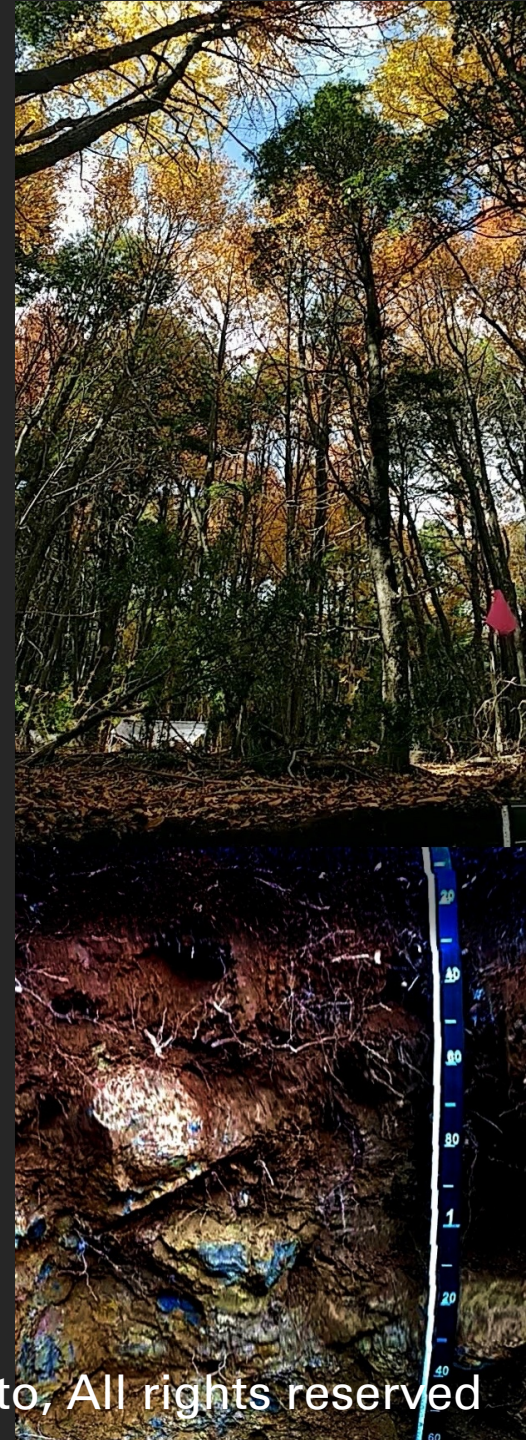


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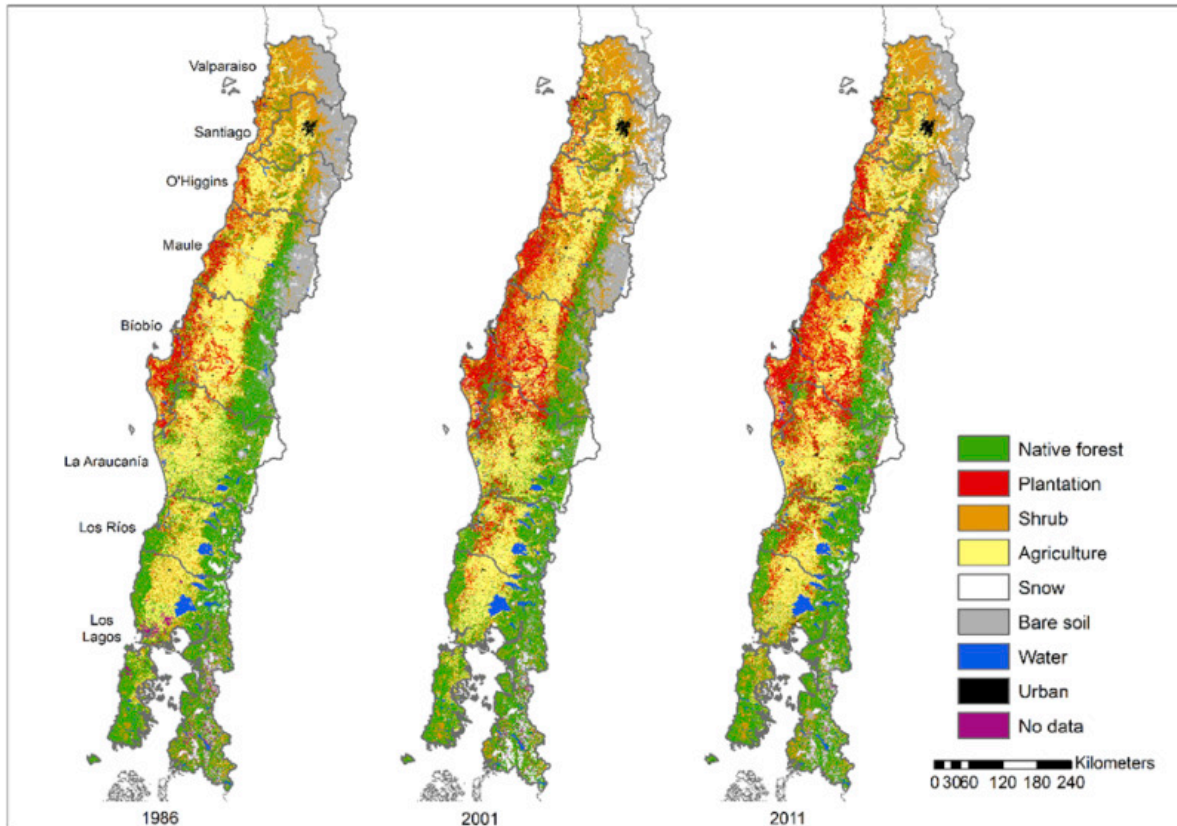


Outline

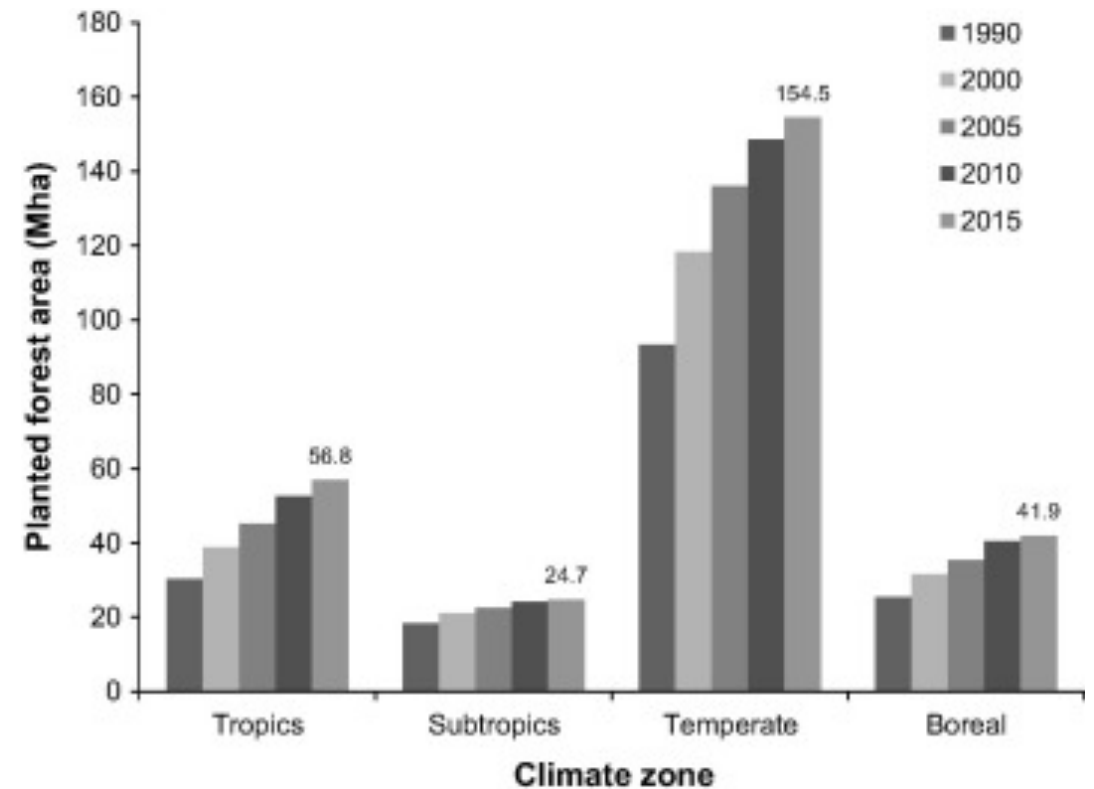
1. Introduction
2. Experiment and sampling desing
3. Preliminary Results
4. Future work



1. Relevance Forest Plantations and LUC

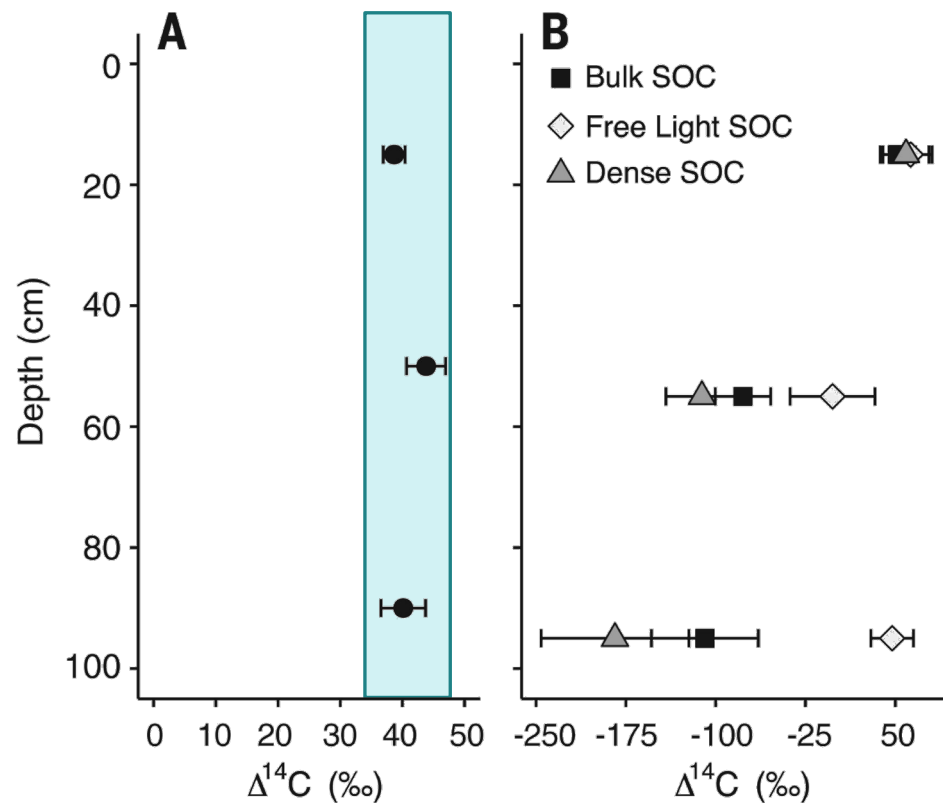


Heilmayr *et al.*, 2016, App.Geog.

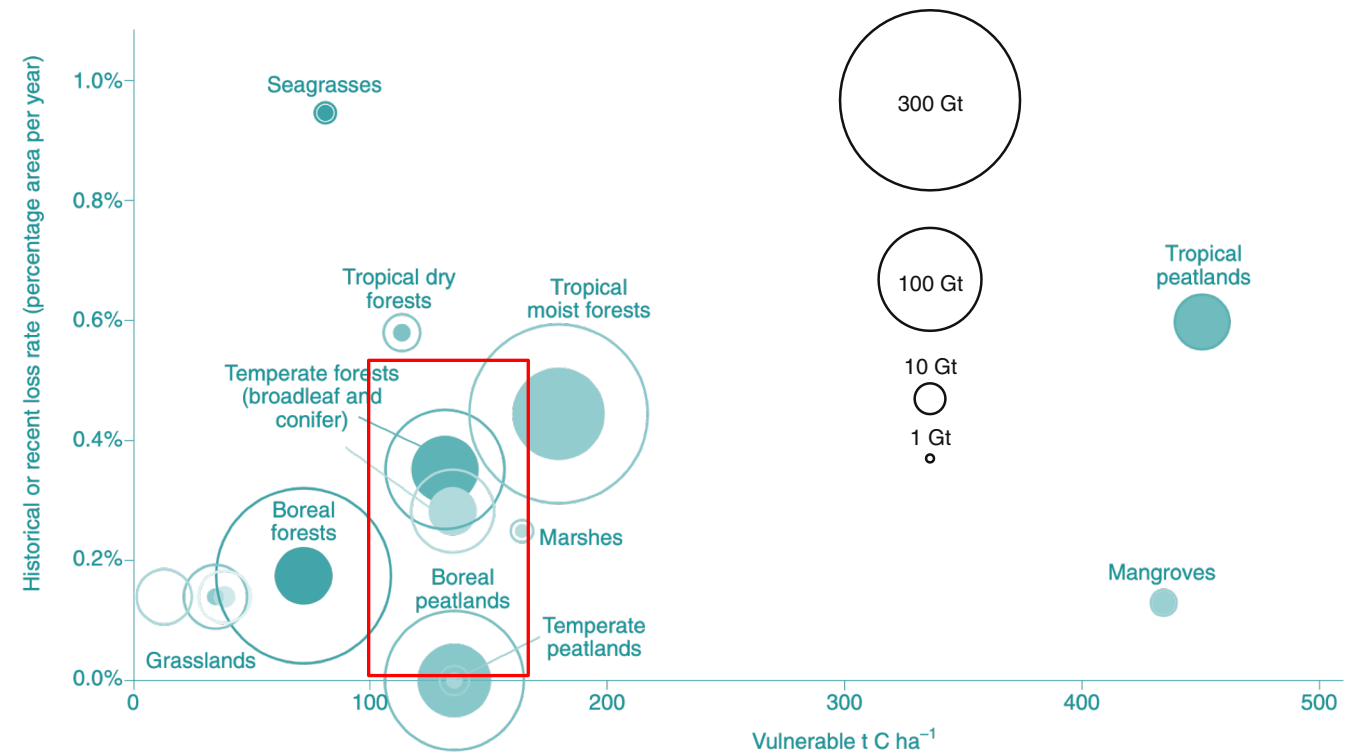


Payn *et al.*, 2015, FEM

1. SOC forest disturbance and warming

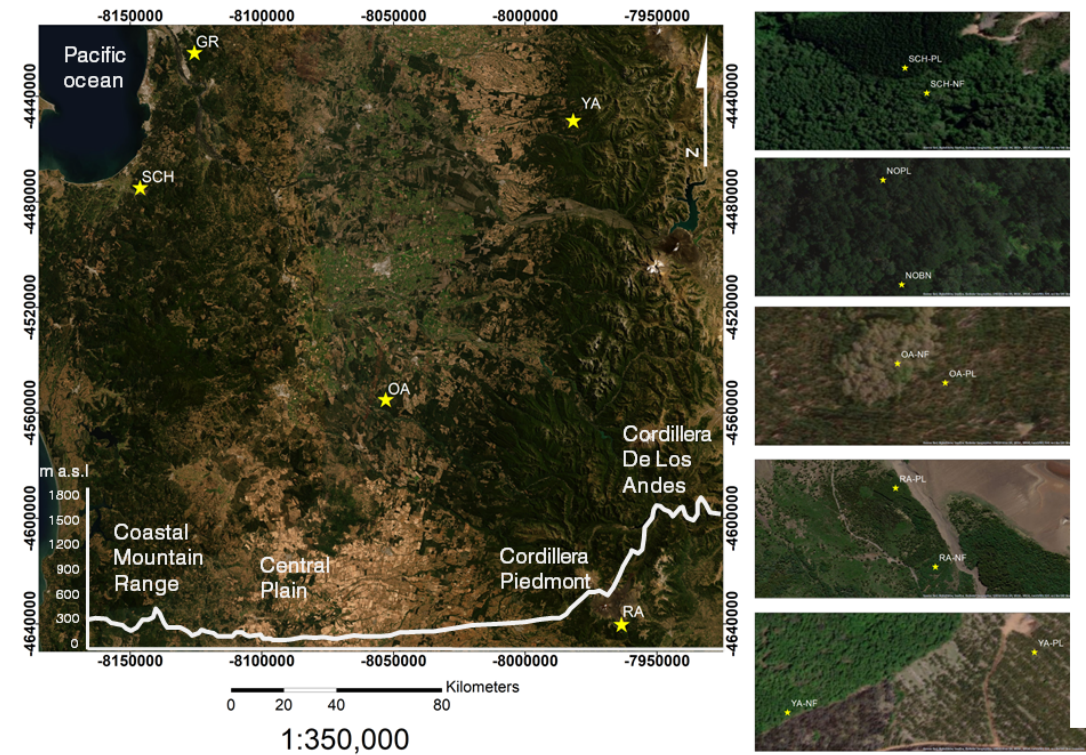
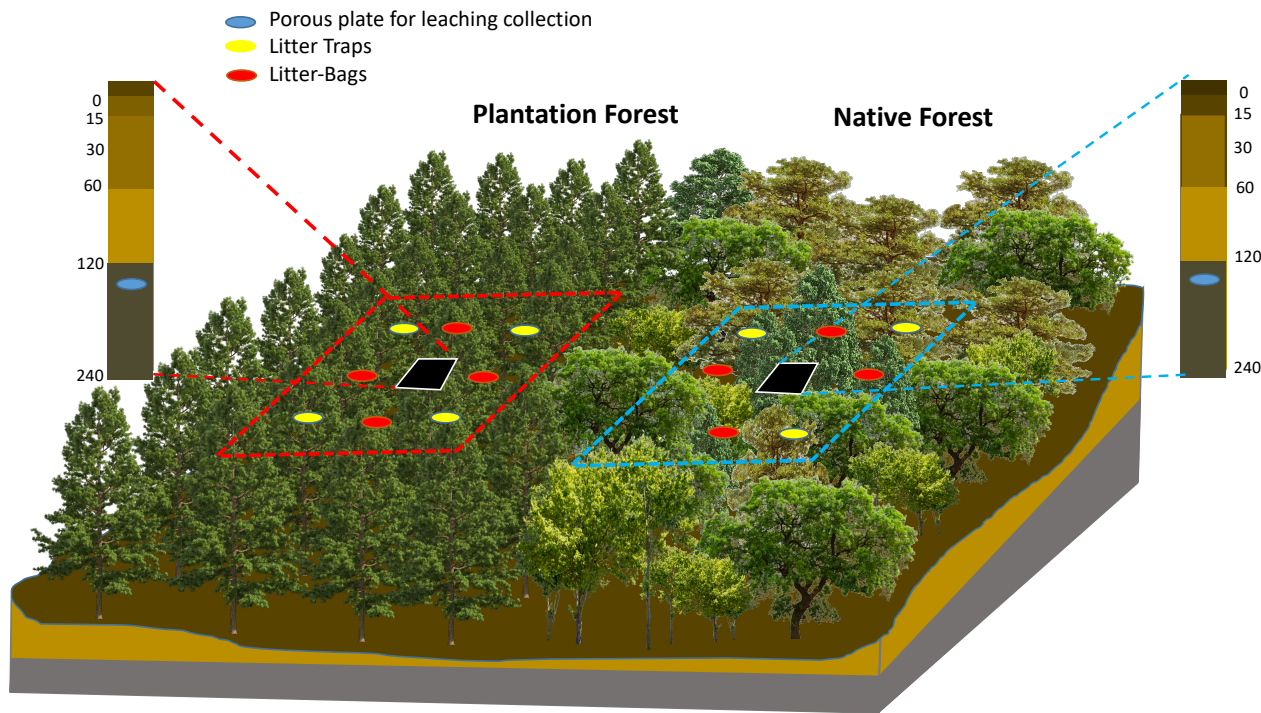


Hicks Pries (2018) Science



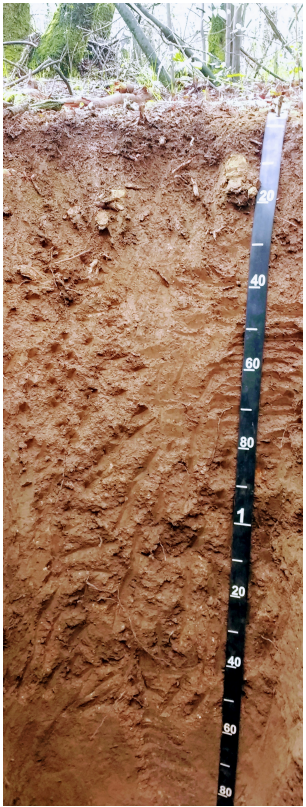
Goldstein, et al 2020 (Nature Climate Change)

2. Sampling strategy and desing



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2. Mineral Protection - LUC



**Natural
Temperate Forest**



**Plantation
Forest**



**Recent
Volcanic
<0.5 Kyrs
Entisol**



**Young
Volcanic
<8 Kyrs
Andisol**



**Old
Volcanic
>120 Kyrs
Ultisol**

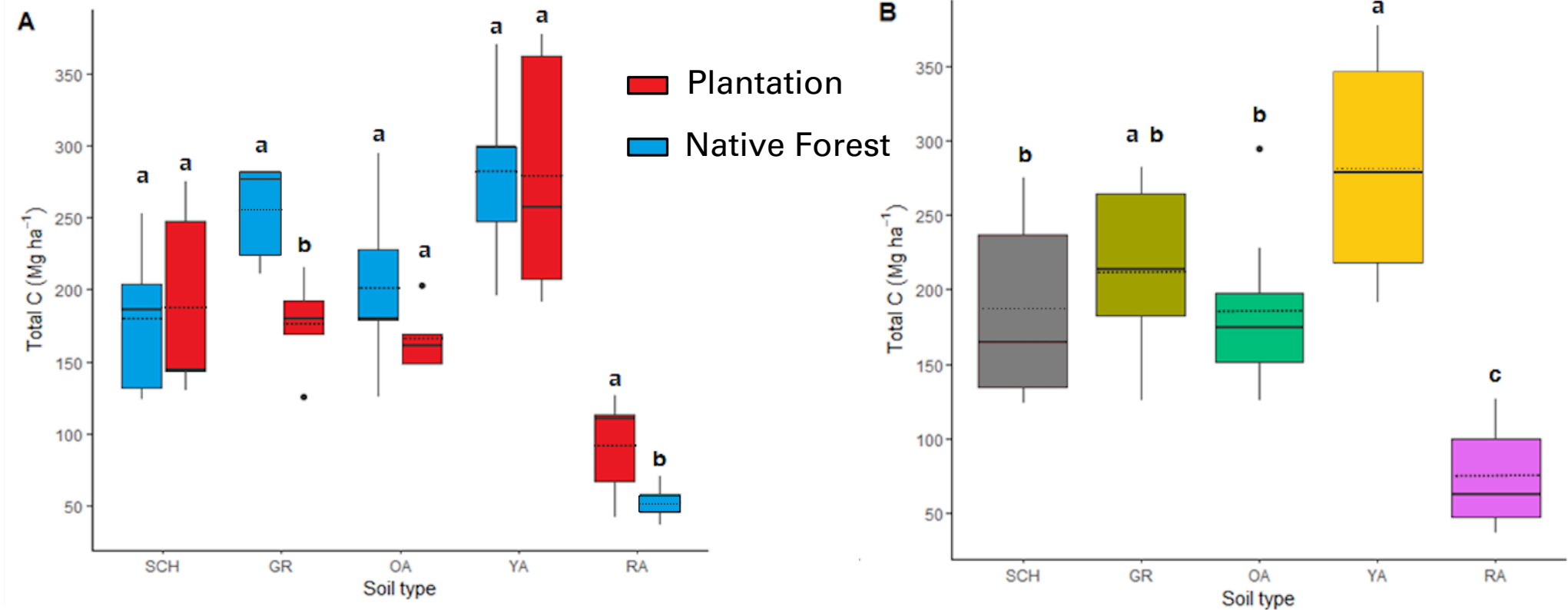


**Granodiorite
Alfisol**



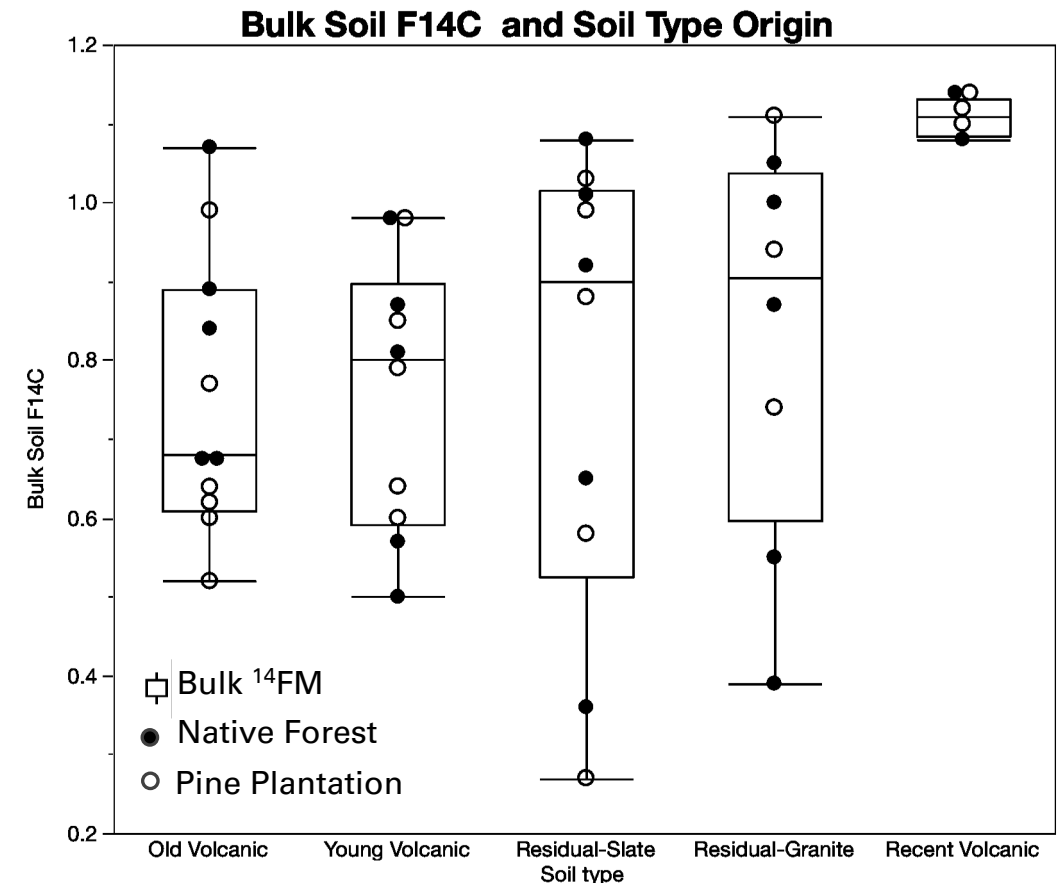
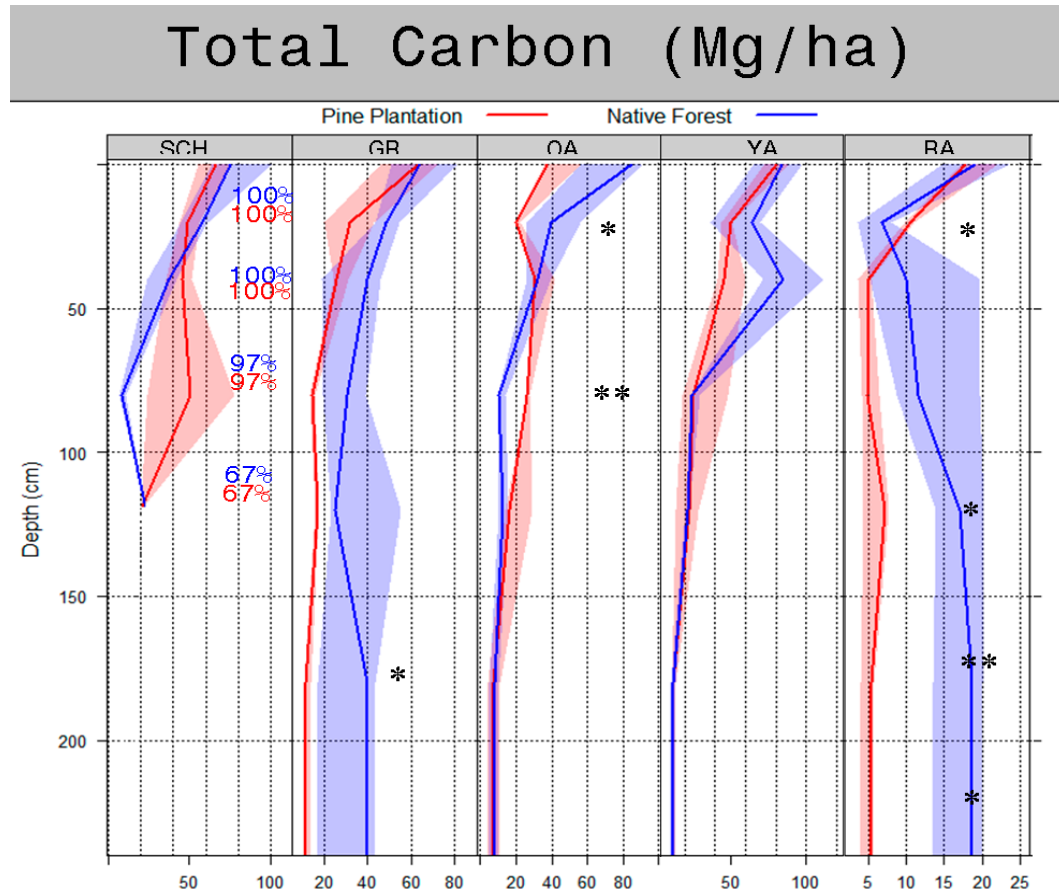
**Slate
Ultisol**

3. Soil type and forest type effects on C inventories

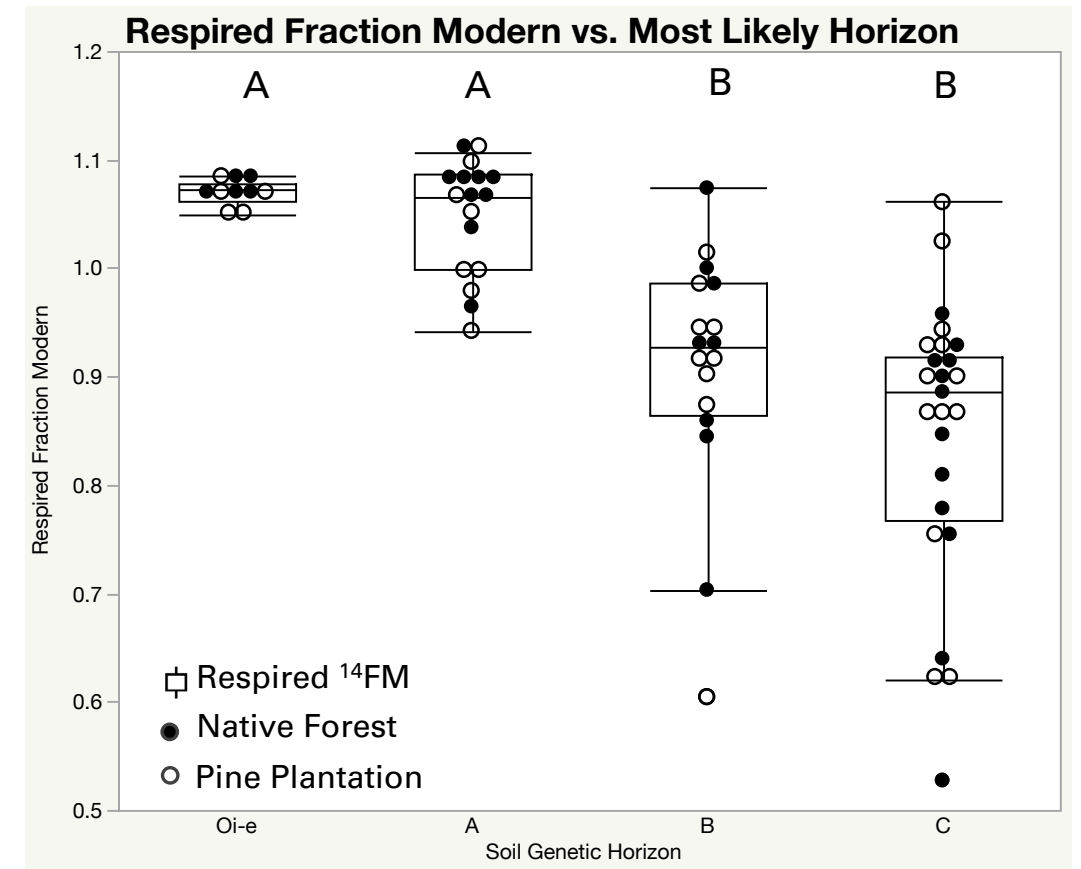
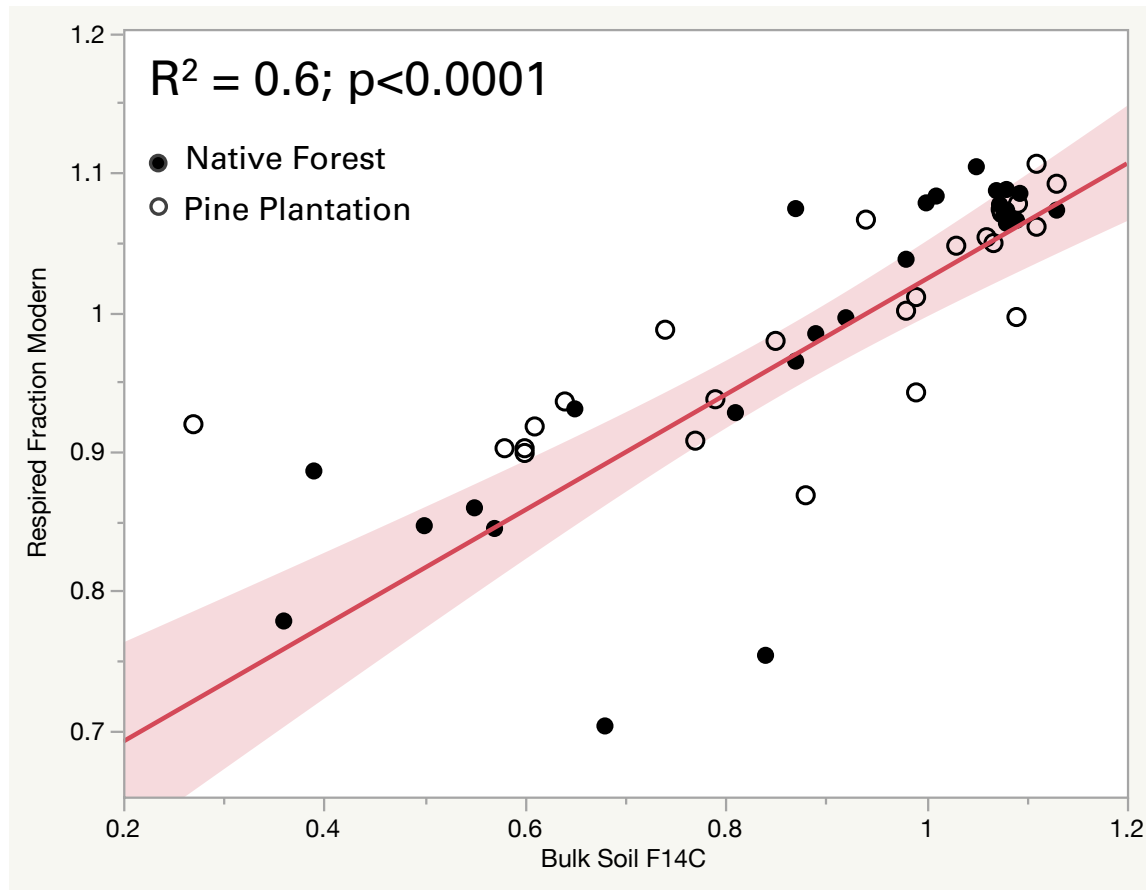


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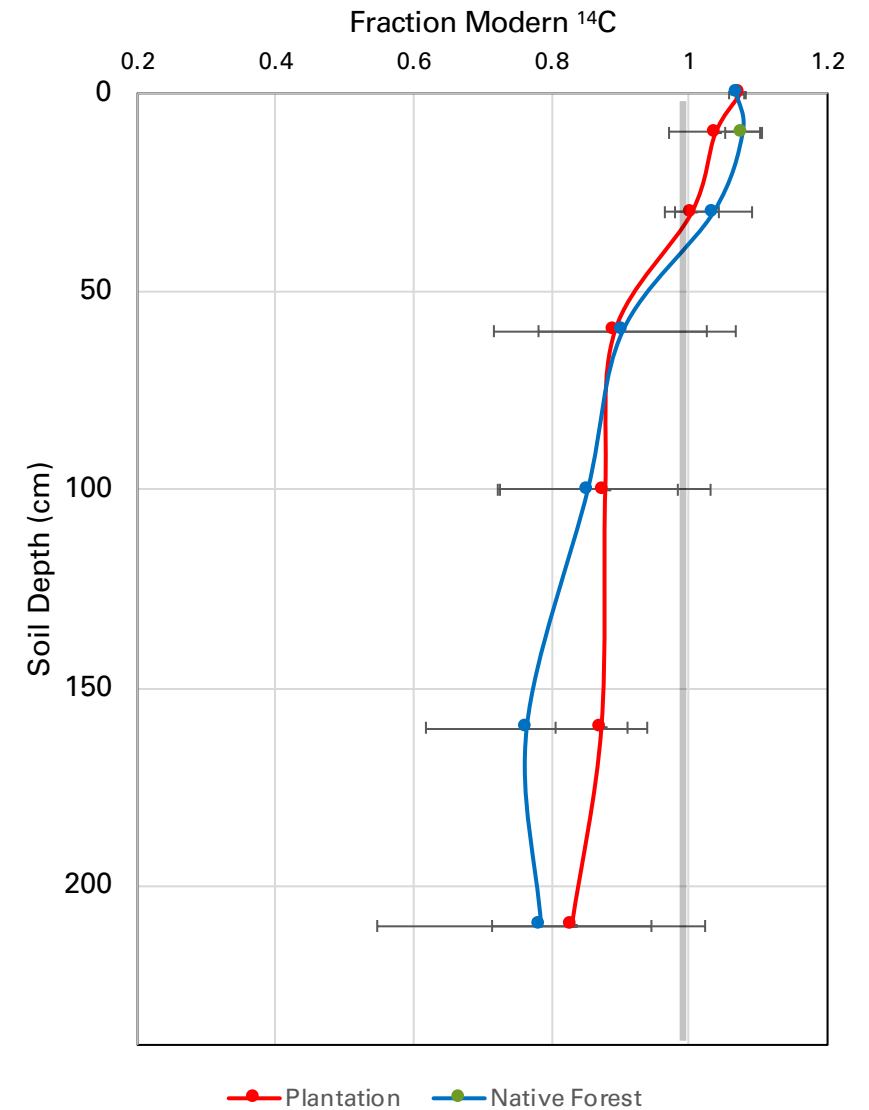
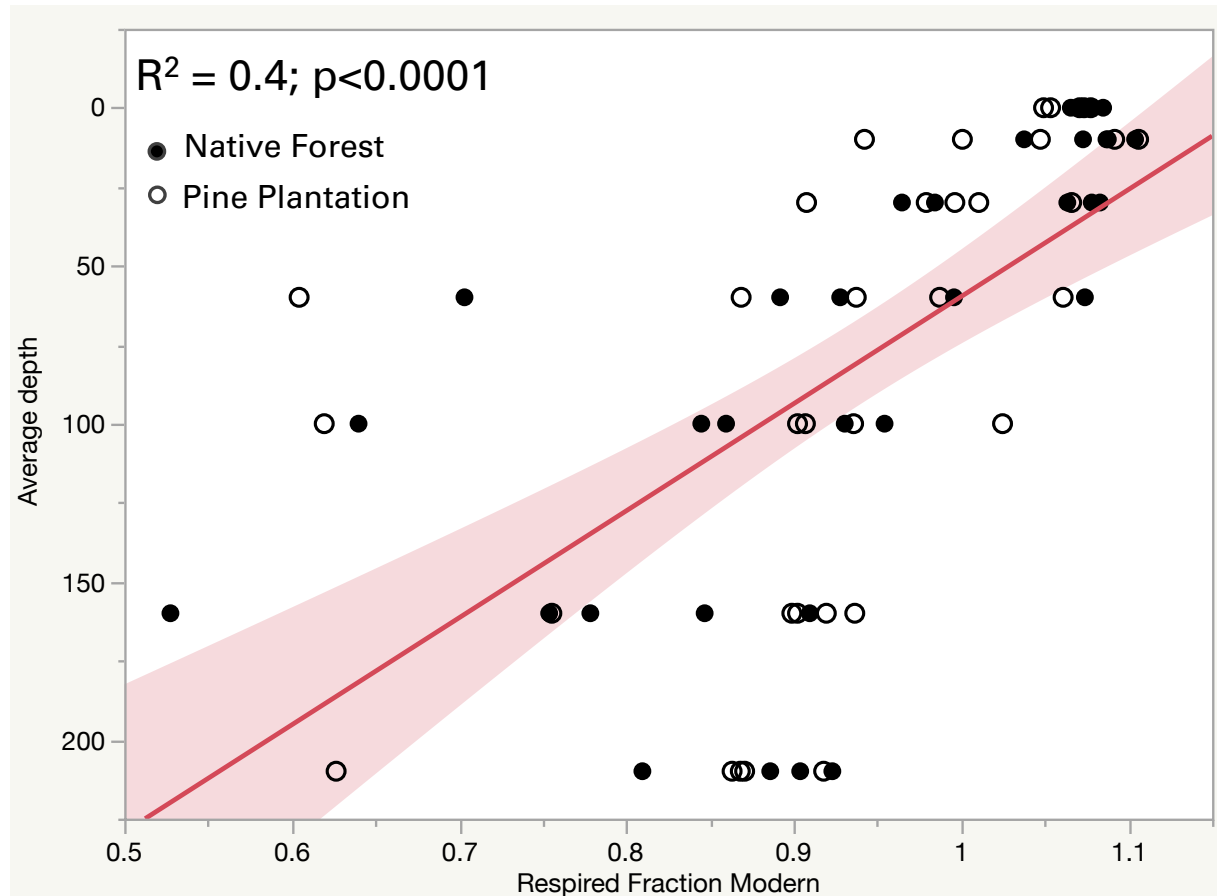
3. LUC and Bulk SOC and ^{14}C FM



3. Respired FM Carbon – Depth Distribution



3. Respired 14 and LUC



4. What is coming next....

- Determine $^{14}\Delta\text{C}$ in soil density fractions
- In situ respired $^{14}\Delta\text{C}$ in the same sites.
- New long term incubation including more sites (60 days) and litter swap experiments.
- Increase sampling sites for carbon inventories.

