

IMPACT OF CLOUD COVERAGE ON GROWTH DYNAMICS OF *CEDRELA NEBULOSA* FROM AN AMAZONIAN PRE-MONTANE FOREST IN CENTRAL ECUADOR

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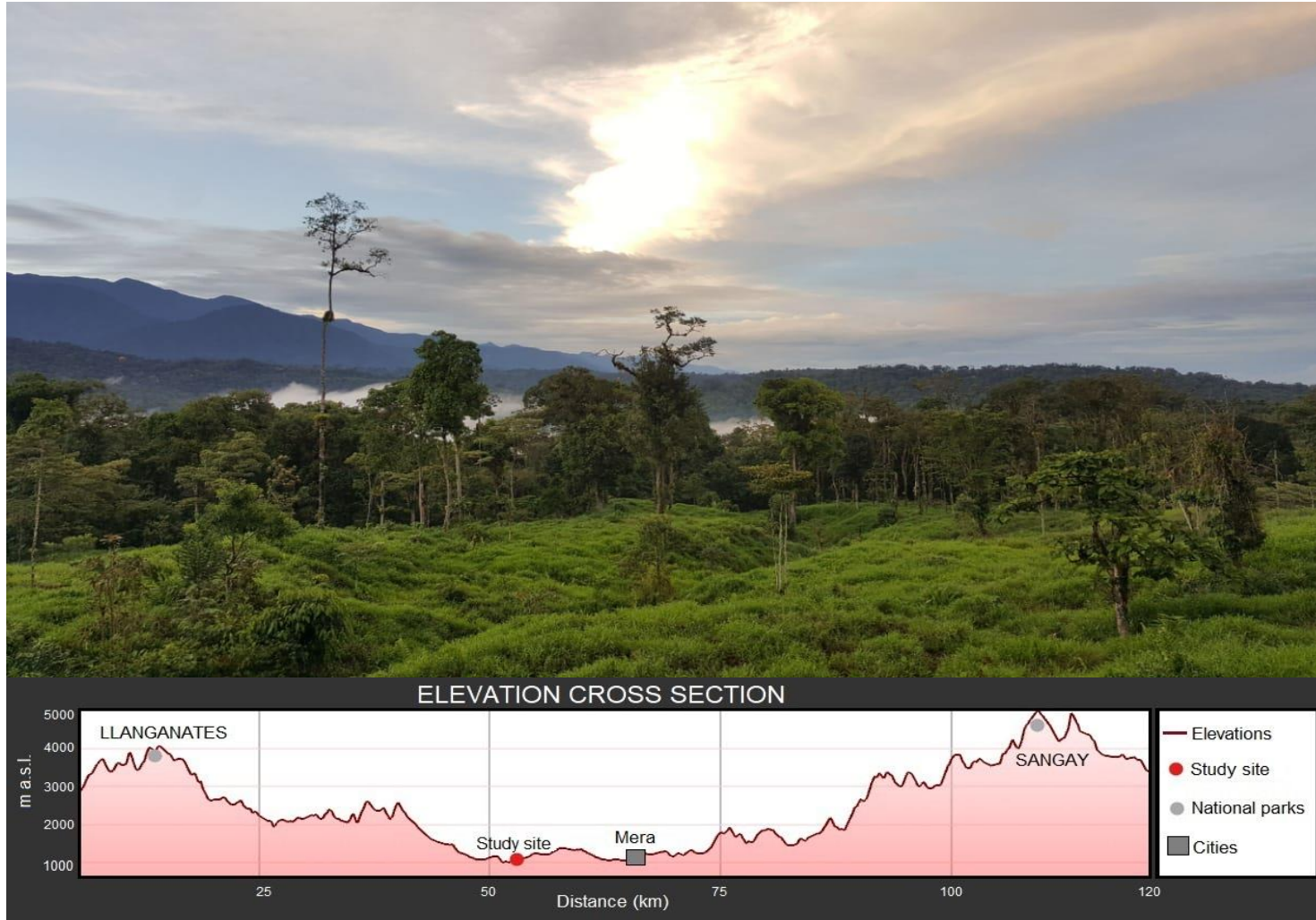
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Cedrela nebulosa pre-montane forest



-Location: Sub-Andes towards the western Amazon Basin of Ecuador

-Altitude: 1200 m a.s.l.

Annual ring formation?



Growing season



Shedding leaves

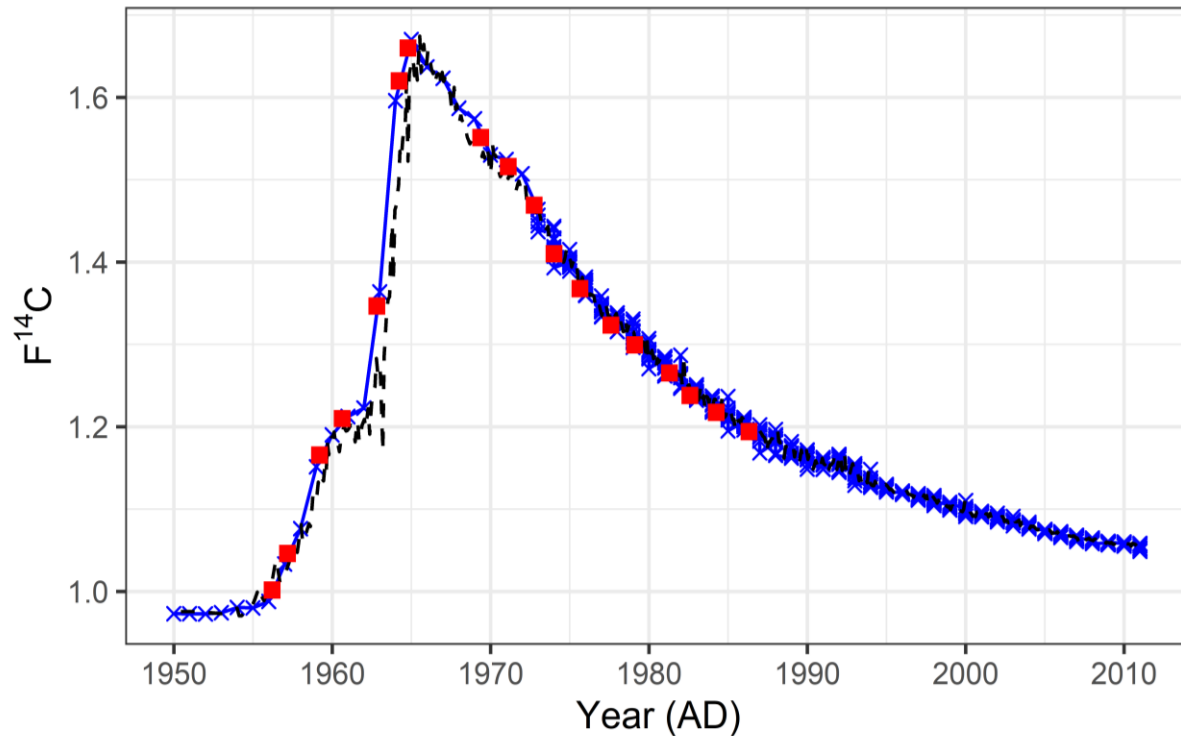


Dormancy period

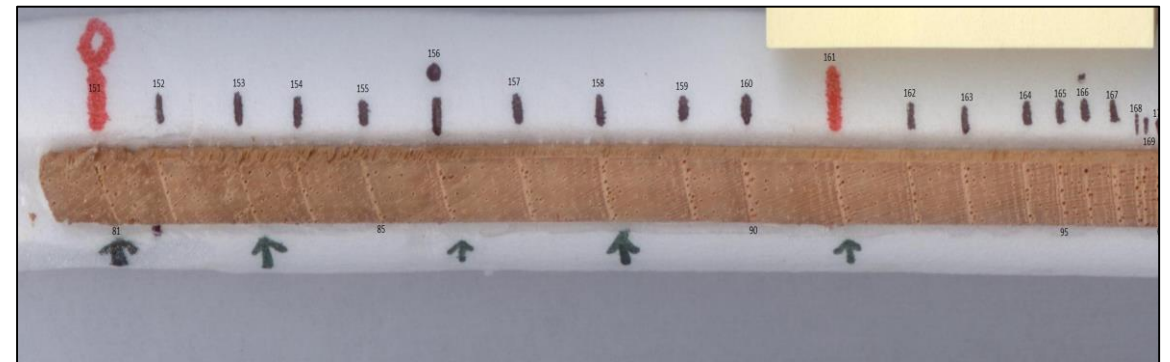
Confirmed with Radiocarbon dating

Cedrela nebulosa Mera-Ecuador

-■- SHZ3 -■- SHZ1-2 -■- *Cedrela nebulosa* Ecu



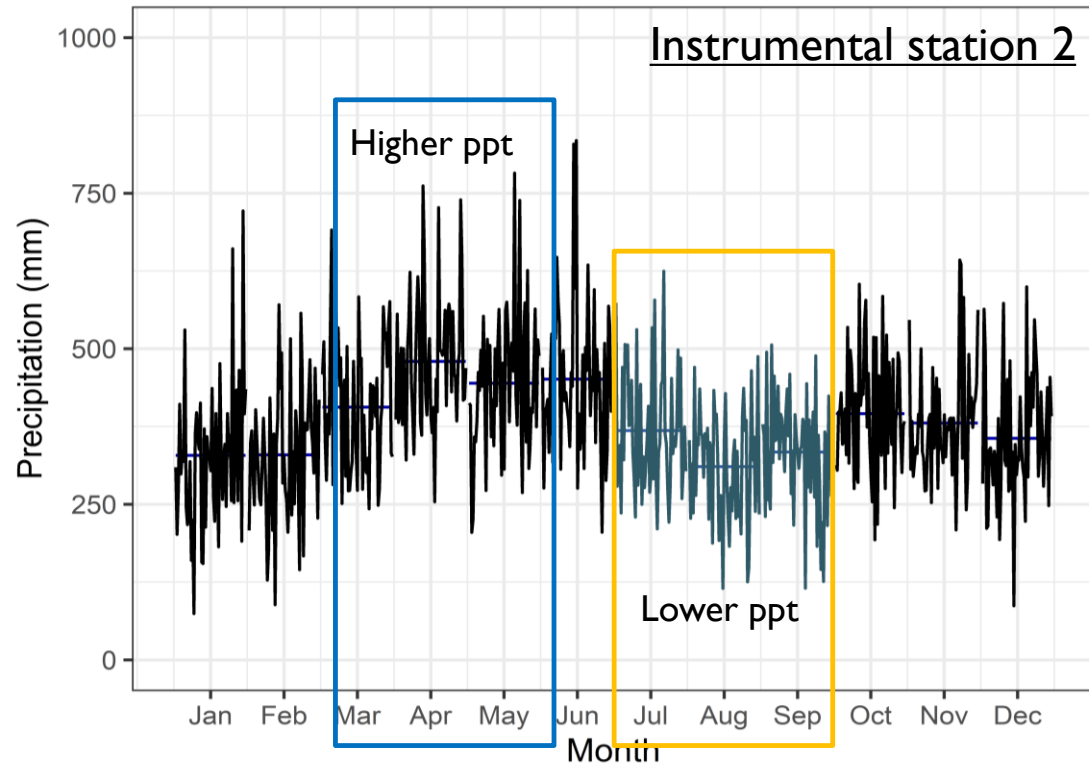
F¹⁴C datasets from Hua et al. (2013)



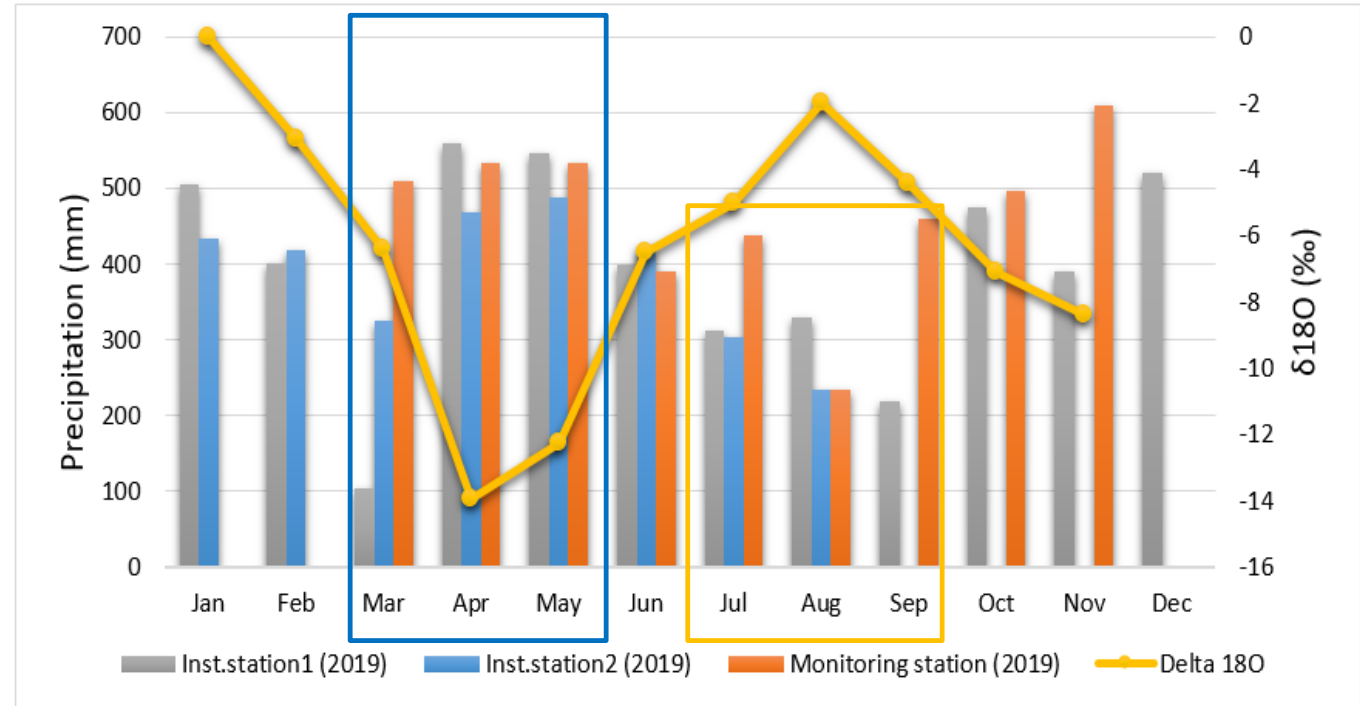
Conclusion: *Cedrela nebulosa* in our study site forms annual rings.

Oxygen stable isotopes in precipitation reflect amount effect

Average monthly precipitation
(1965-2019)

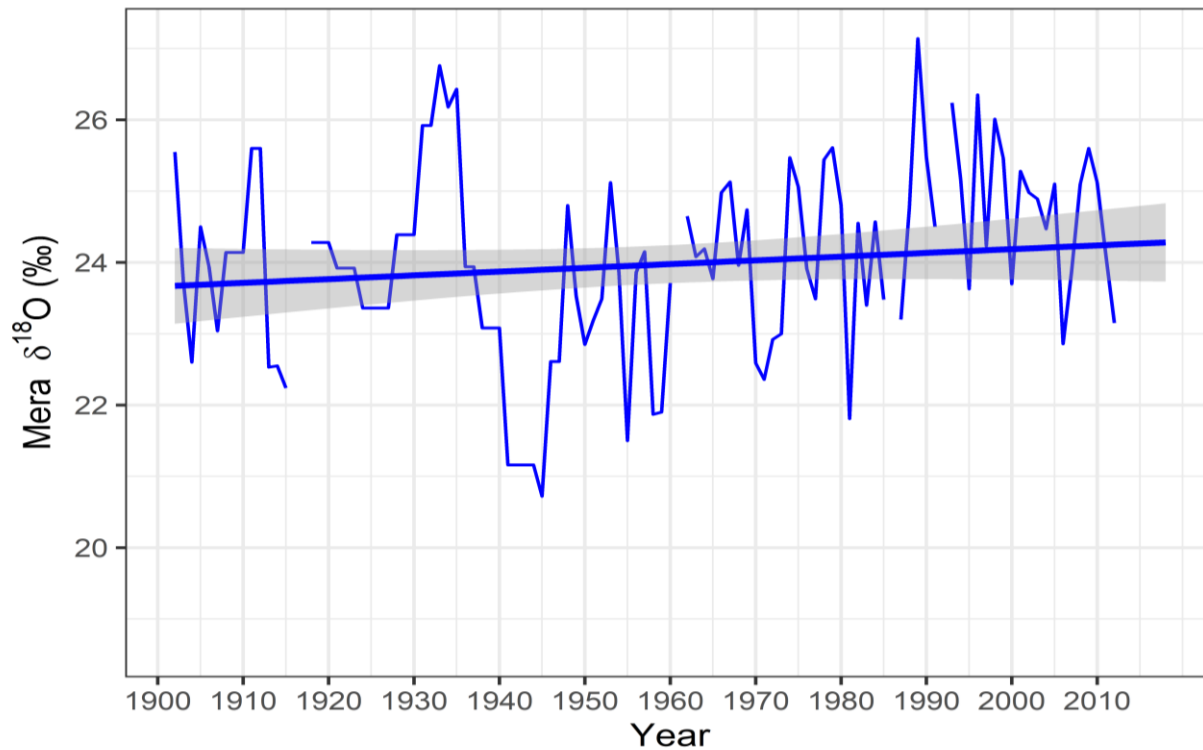


One year monitoring
(2019-2020)



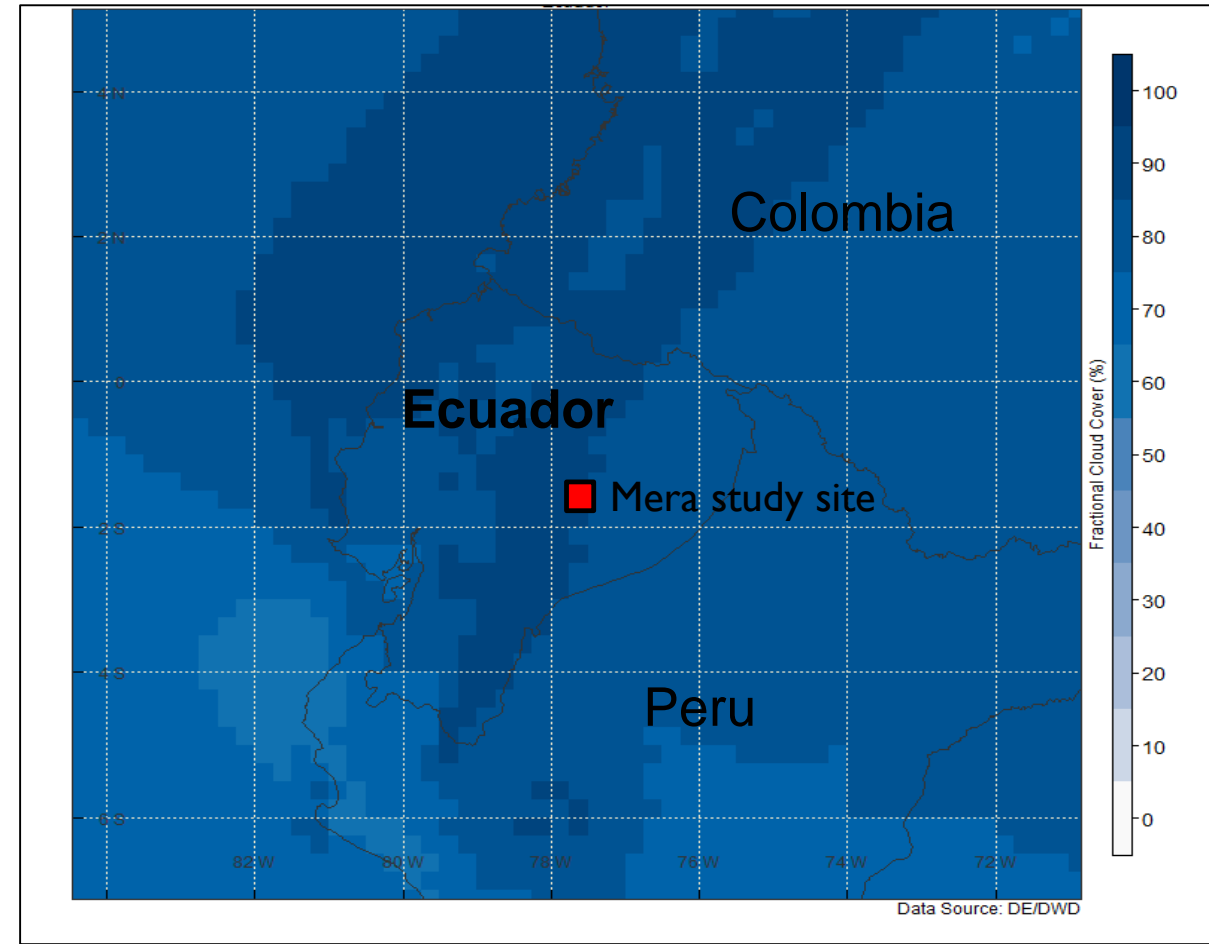
*Inst.station = Instrumental station

Oxygen stable isotopes in cellulose (preliminary results)



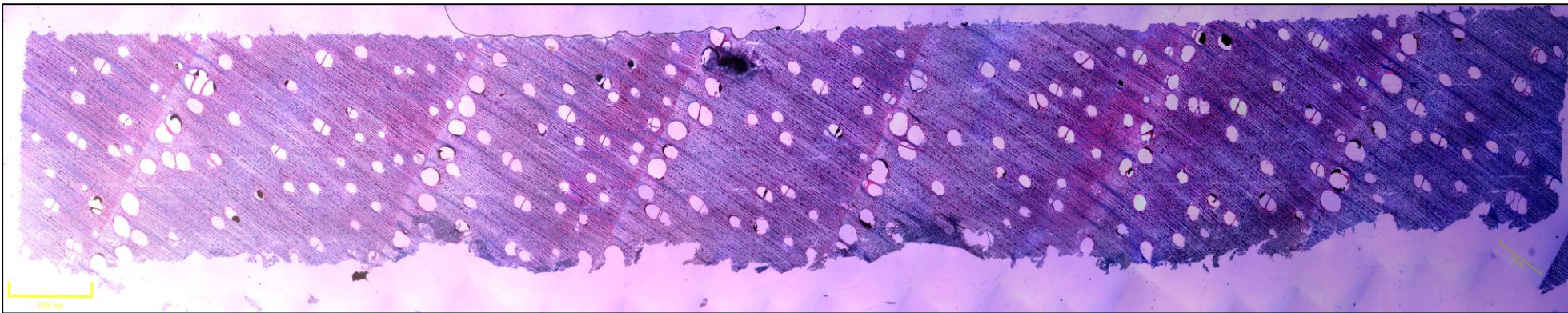
There is an increase in the isotopic signal, hence there must be a source of moisture, most likely related to fog water deposition as input in the hydrological budget in the area.

Mean Fractional Cloud cover (1982-2015)



Manuscript in preparation including:

- Tree ring width (TRW) chronology
- $\delta^{13}\text{C}$ in tree ring cellulose (4 trees)
- $\delta^{18}\text{O}$ in tree ring cellulose (4 trees)
- 1 year temperature monitoring (hourly)
- 1 year rainfall amount collection
- Wood anatomy



Thank you

