CoringTreespotters Model notes

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Quick notes after meeting with Victor where we talked about preliminary steps of building a model to answer the question of how juvenile trees respond to climate change. I would like to approach this as a recruitement capacity of tree saplings and how their growth varies across years and how it's impacted by temperature and growing season length (or maybe not length... more on that below)

What are my predictors?

We discussed which of the following would be the most relevant variable that relates to growth:

1. **Growing Degree Days (GDD)** which would be calculated between the budburst and budset date of each individual.
2. **Growing Season Length (GSL)** which could be calculated by:
   (a) Substracting budset DOY by budburst DOY or
   (b) By taking the number of days of each year when the mean (or max/min) was above 5°C (or maybe the nb of consecutive days when the temperature was above 5 or something like that).

Preliminary model

$$\log(w_{i,t}) \sim \text{normal}(\text{X}, \sigma) \tag{1}$$
$$\alpha + \alpha_{sp[i]} + \beta_{spp[i]} X_{i,t} + \cdots \tag{2}$$

What kind of pooling? Partial pooling since they are all within the same family?
Where:

-
- alpha