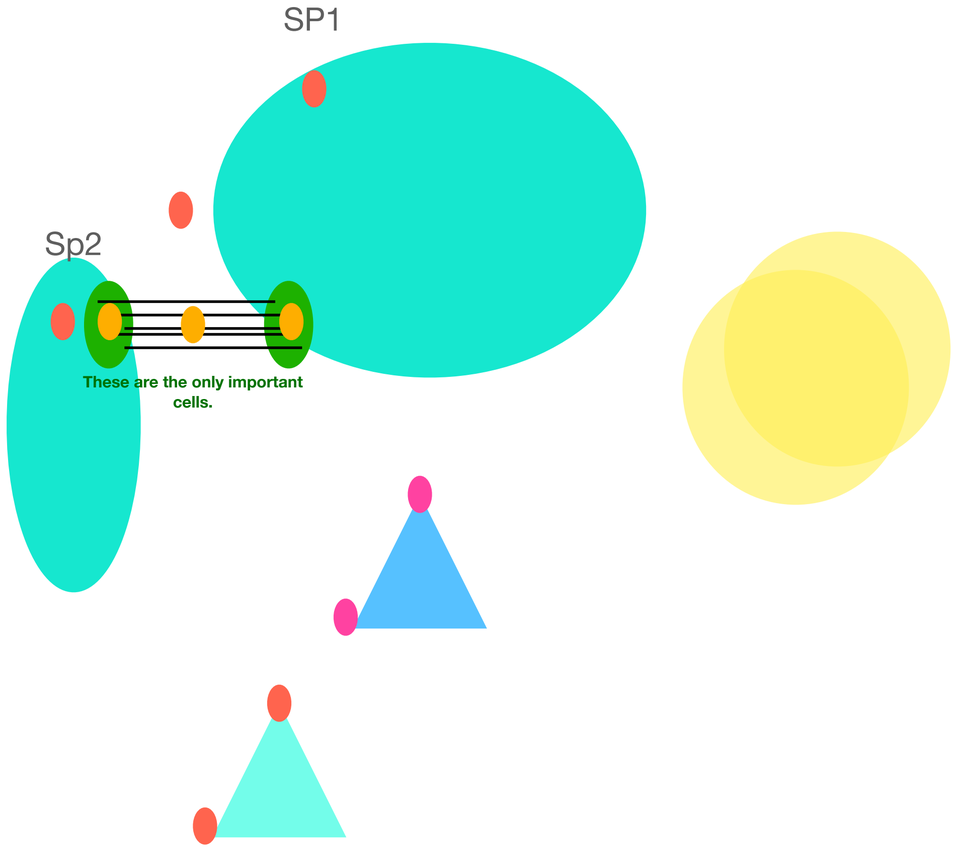
What is cost?

- Accumulated cost on a path.

How do you summarize per species / pair?

- **1 path per pair (prone to anomalies, and not biologically realistic)**
- **Summarize cost per pair using a subset of dispersal paths**
  - **Pair cost = mean(Mean(sp1) , mean(sp2)) — this assumes dispersal form all cells equally. AND its sensitive to large values**
  - **Pair cost = mean(mean(btm 25percentile sp1), mean(btm 25percentile sp2))* * explicitly weights sp1 and sp2 equally in calculation**
  - **Pair cost = mean(c(btm 25percentile sp1, btm 25percentile sp2))* *Vicariance by budding — weight bigger range higher.***
  - **No sympatry, minimum niche overlap of >= 75% in ELEVATIONAL RANGE, THERMAL RANGE depending on cost metric.**
  -

*doing this would REQUIRE weightings on all other sp-sp calculations used to get pair metrics too.
We need to see through the assumption that contribution is unequal if we go with it here.



Look at cost ~ steepness ~ path length
as a SEPARATE discussion pt.

Elevation models only have elevation covariates,
MAT models only have mat covariates,
etc…

Is there a PATTERN that matches Janzen?

DISPERSAL COST ~ (ele, MAT, VarT) **Latitude (from green)**
Latitude^2 (from green)

Account for space. However we do that.

LatitudeXage
Latitude^2Xage

Signal stronger in
more recent species

If yes…. What is the MECHANISM?

DISPERSAL COST ~ (ele, MAT, VarT)

One of (cyan)…..
Elevational Range
Thermal range
***Number of origins (cyan)**
***Distance between centroids (green)**
Mountain Mass (green)
Distance to cost (green)

*can potentially go in top model

Don’t forget about potentially including in mechanism model…
mean elevation
Mean MAT