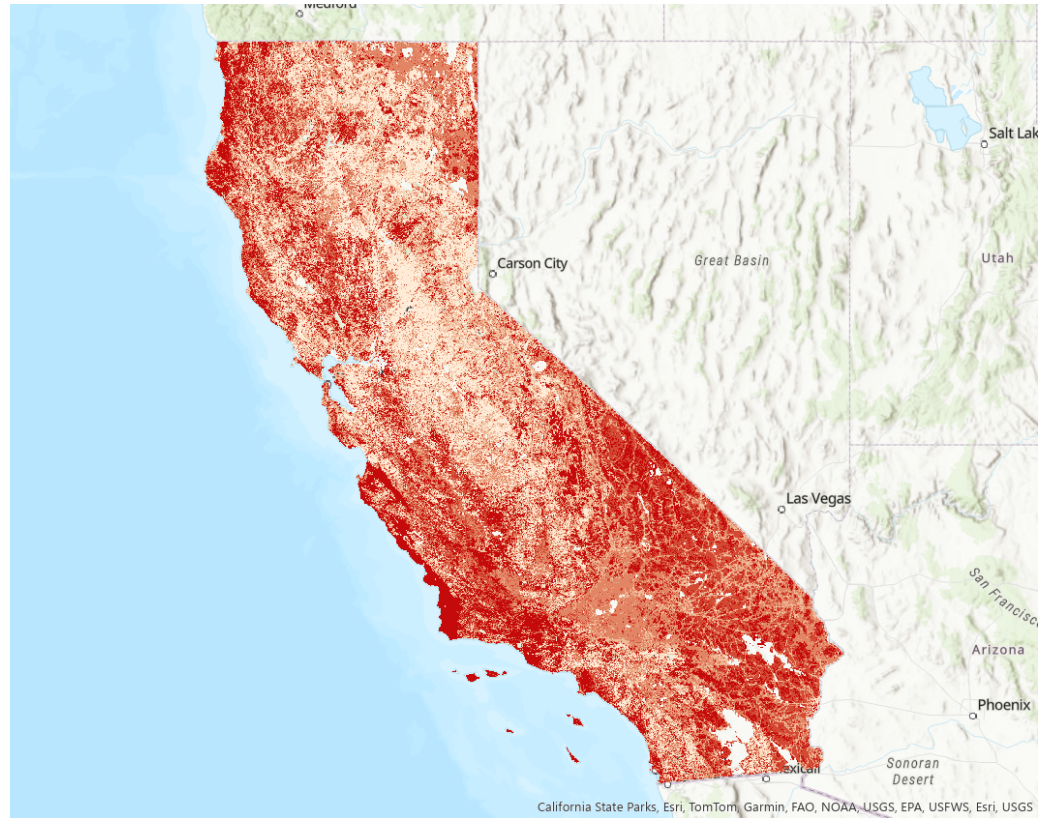


Settings

1. Beta diversity script: https://github.com/levisimons/CIB/blob/main/CIB_BetaDiversity.R
2. Primer: ITS1_Fungi
3. Taxonomic agglomeration: None
4. Beta diversity metric: chao
5. Filtering
 - a. Decontamination
 - i. Remove taxa with fewer than two reads
 - ii. Remove samples with fewer than two reads
 - b. Remove empty samples after decontamination.
 - c. Remove samples without location/date information.
 - d. Retain taxa within the genus Pyronema
6. Final filtered data set statistics
 - a. 41 samples
 - b. 5 taxa
 - c. 11 projects
7. Percent variation attributed to principal components:
 - a. PC1: 8.5%
 - b. PC2: 3.5%
 - c. PC3: 2.5%
8. Environmental layers used
 - a.  CIB_EnvironmentalLayers
9. Random forest modeling to predict the values of the first three principal components using environmental variation.
 - a. 80/20 training/testing split
 - b. 100 models with results averaged
10. Beta diversity PC maps.
 - a.



Pyronema_PC1.tif

Principal component 1

Top five important variables

1. NBRTVariance (Variance on burn ratio)
2. CHILI (Continuous Heat-Insolation Load Index)
3. Walking_Friction (How inaccessible locations are on foot)
4. BIO03 (Isothermality)
5. BIO15 (Precipitation Seasonality)

Pearson correlations between predicted and actual principal component values
0.25 +/- 0.23

b.



Pyronema_PC2.tif

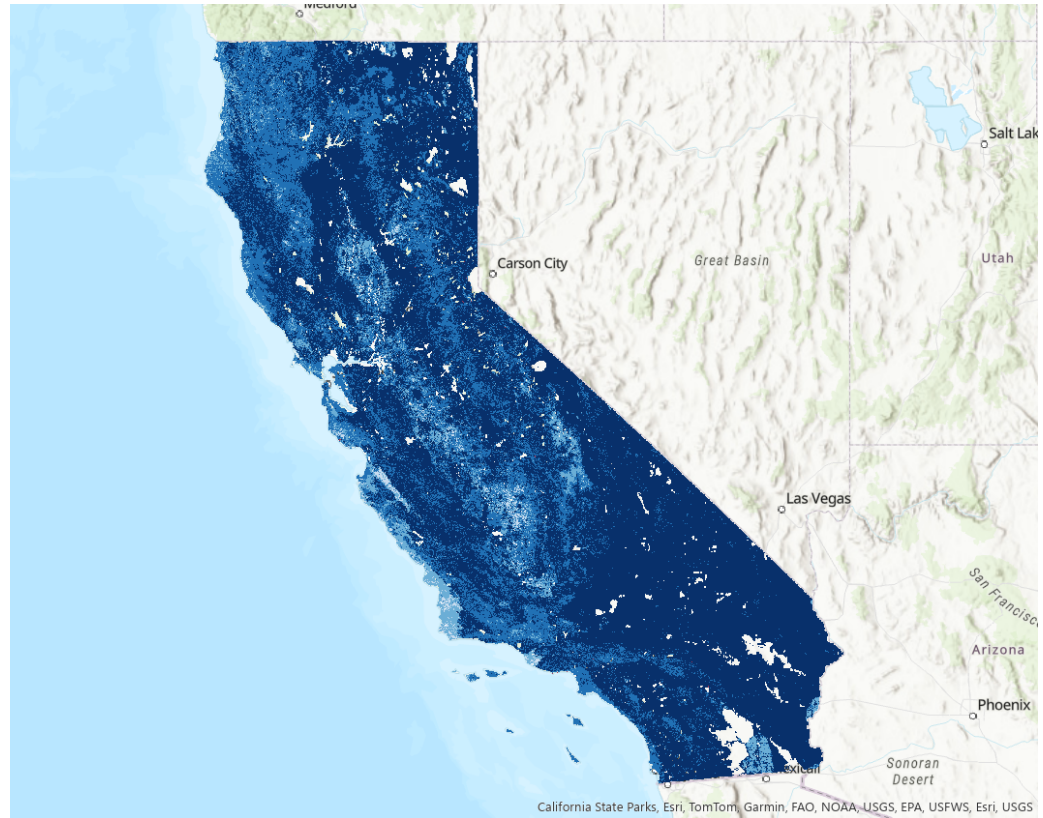
Principal component 2

Top five important variables

1. BIO03 (Isothermality)
2. NBRTVariance (Variance on burn ratio)
3. Sentinel2Mean_B10 (Mean in the 1373.5nm (S2A) / 1376.9nm (S2B) band)
4. BIO02 (Mean Diurnal Range (Mean of monthly (max temp - min temp)))
5. CHILI (Continuous Heat-Insolation Load Index)

Pearson correlations between predicted and actual principal component values
0.22 +/- 0.28

c.



Pyronema_PC3.tif

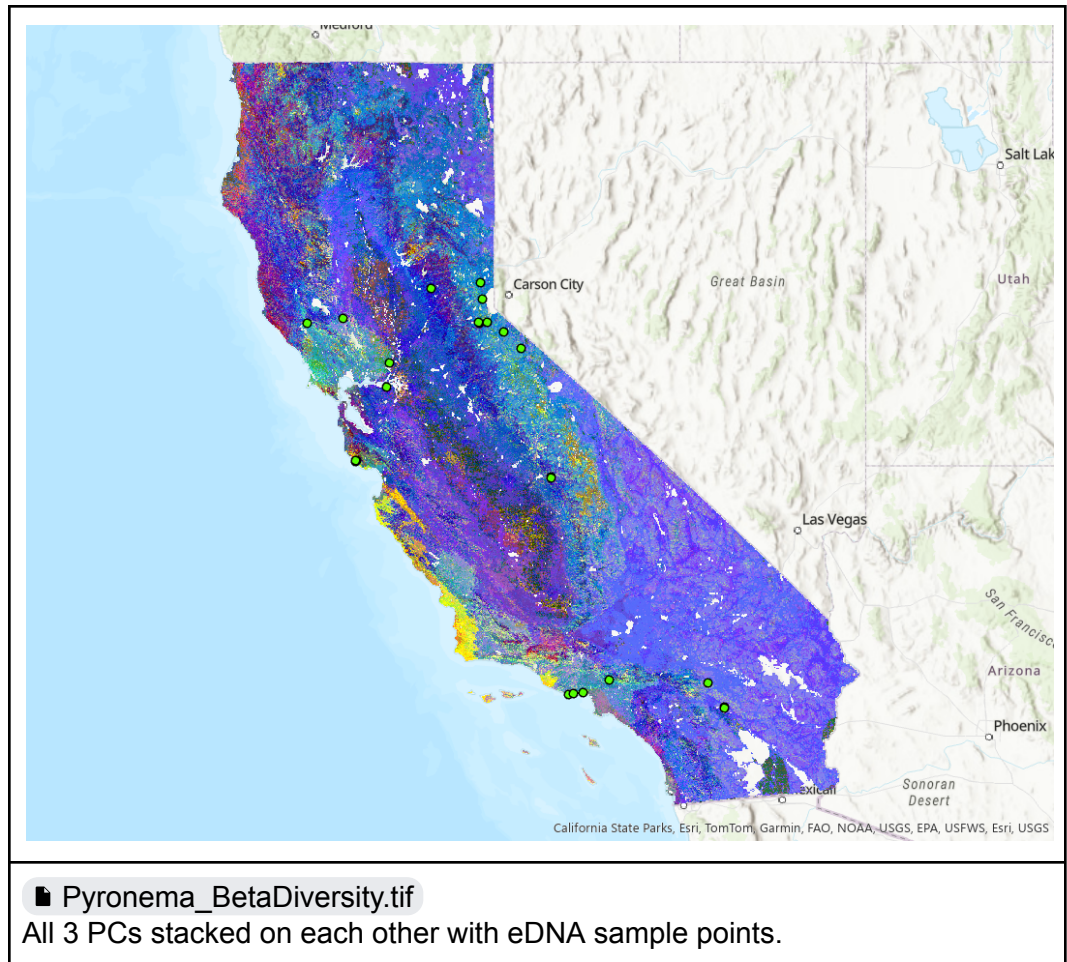
Principal component 3

Top five important variables

1. BIO03 (Isothermality)
2. BIO02 (Mean Diurnal Range (Mean of monthly (max temp - min temp)))
3. BIO15 (Precipitation Seasonality (Coefficient of Variation))
4. EVIVariance (Variance on the Enhanced Vegetation Index)
5. CHILI (Continuous Heat-Insolation Load Index)

Pearson correlations between predicted and actual principal component values
0.33 +/- 0.28

d.



e.