Skeleton

Lim Jia Le

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1 Introduction

What is a network?

What is turnover?

Previous studies

Why study turnover?

Why is it important to know climate impacts on turnover?

Why pollinator, why bees ?

WHy Cerrado?

Flowchart

short summary of paper & results

2 Methods

Two datasets. How data was collected?

Climate data from?

Why use β-dissimilarity measure?

Explain β-dissimilarity measure?

How the different turnover measures are calculated - use table

why use sum of precipitation, the rest medians used due to skrewed distributions.

why do not use humidity, only use avg temps

two climate models, test to see which climate model is better

Model fitting

Why use spearman to calculate correlation

Use Randomization/Monte Carlo to check p-value to show results correlation not random

Does not correlate with p-values due to datapoints not being independent of each other

How Monte Carlo was simulated

3 Results

Abundance of bees, plants in both sites

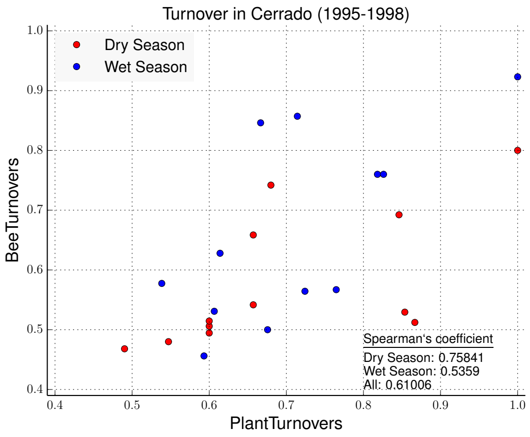
Amt of data points, amount of interactions, amount of unique interactions

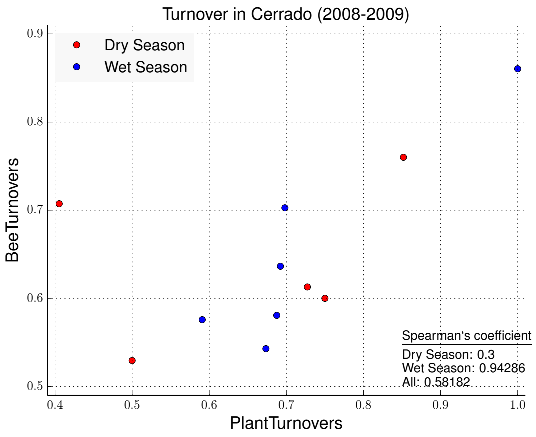
Small sample size , use randomization to reduce sample bias, show that p-values of spearman test does not correspond with p-values generated from MonteCarlo

High turnover

Bbee correlates with Bplant

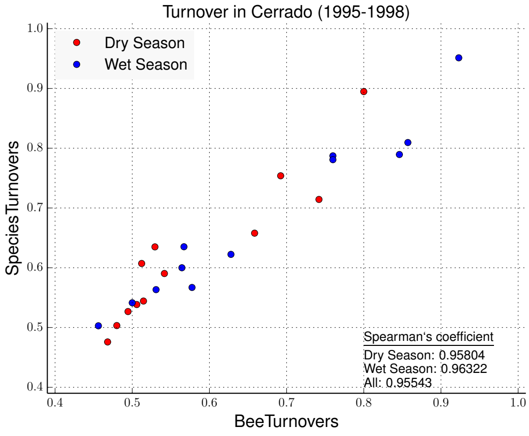
Low correlation in Cerrado (2008-2009) Dry Season, probably due to outlier and few data points.

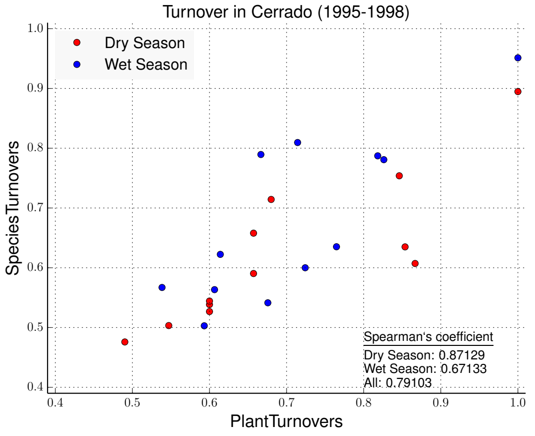


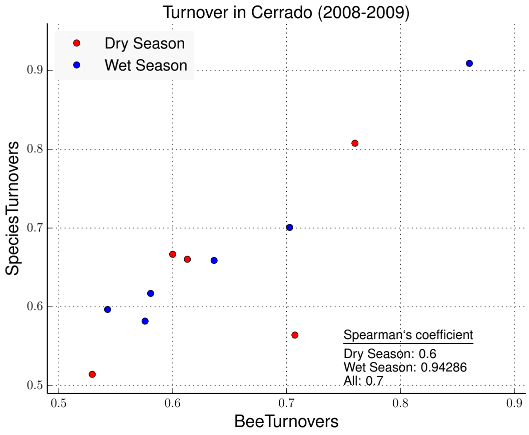


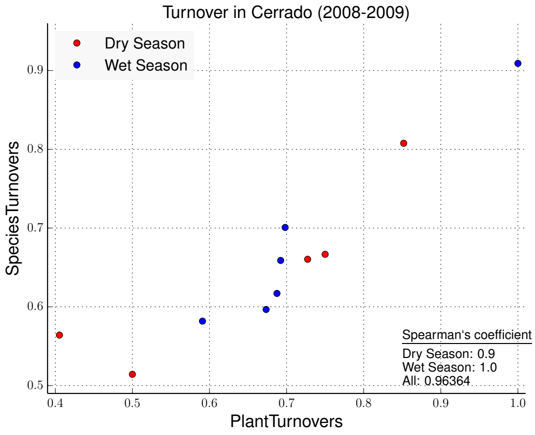
Bbee or Bplant drives Bs

seems to be both



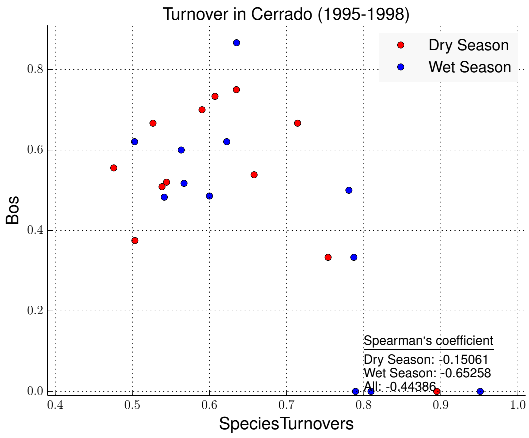


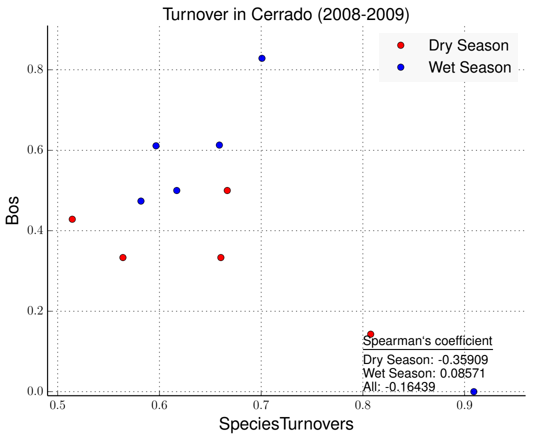




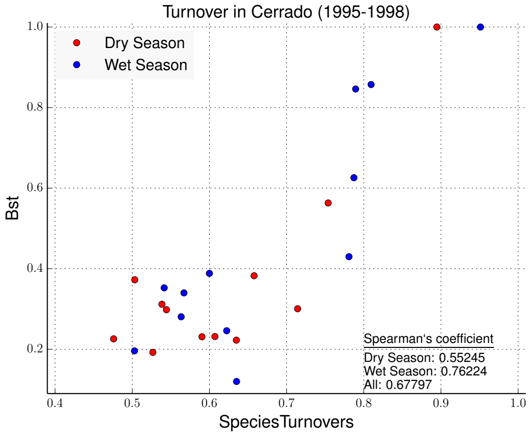
As expected, no clear pattern linking Bs to Bos

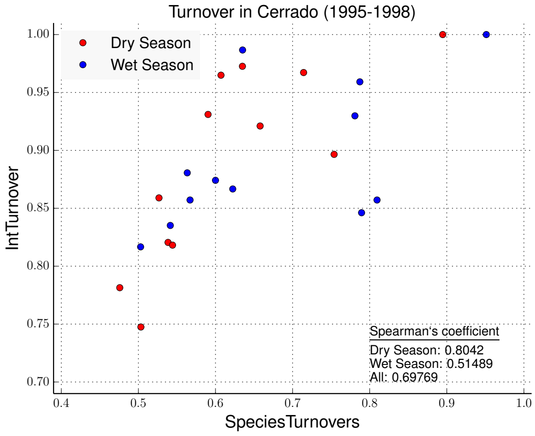
Interaction rewiring driven by factors different from those driving species turnover.

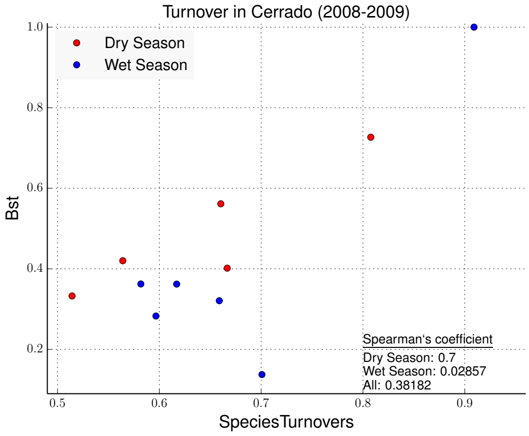


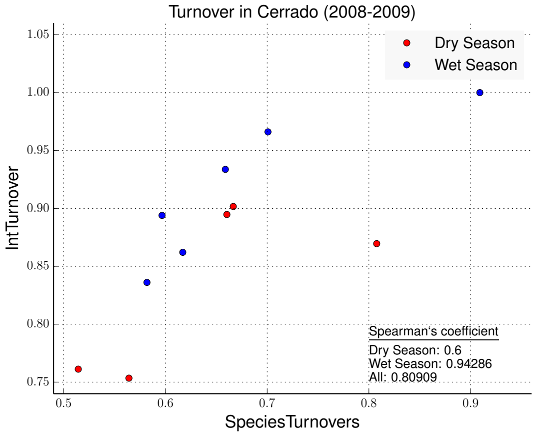


As expected, Bs correlates with Bst & Bint









3.1 climate and turnovers

Difference in Climate between months and Average Climate between months show different patterns

Figure ?? Figure ?? Refer to supplementary figures of trends across time

Different measures, different variables/drivers

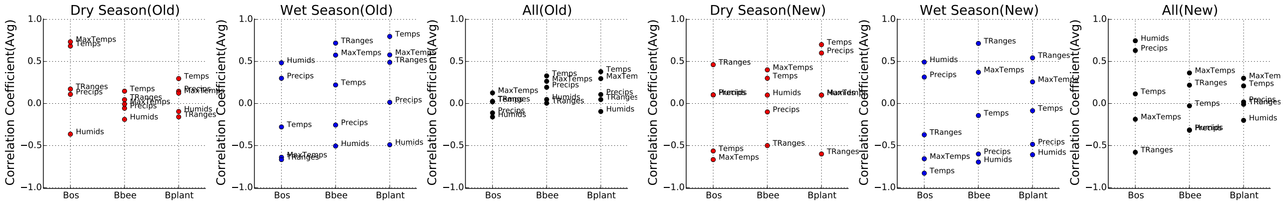
do i have to do correlation or just refer to supplementary?

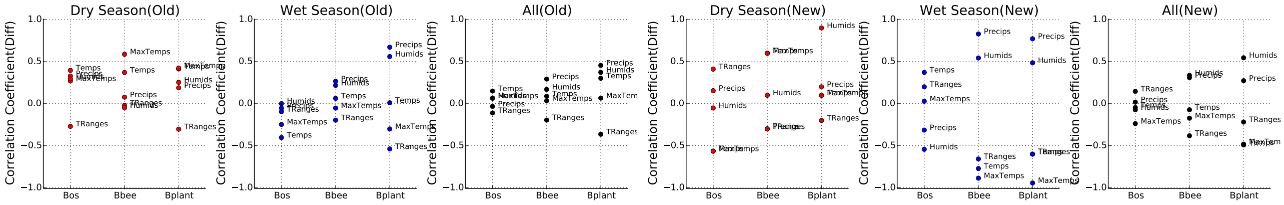
clarify the two different models

Which model is better?

Bplant, Bbee and Bos correlate better with climate diff or climate Avg

model fitting





Which climatic factor best for Bplant, Bbee and Bos

Climatic factor best for Bplant and Bbee, same for Bs and Bst

diff climate factor for Bos vs Bst?

Can we use a climatic factor as predictor for Bint?

4 Discussion

Discuss results, why climatic factor would explain turnover

Limitations: Correlation does not relate to causation, but diff to conduct such experiments,

Future Research: more data, artic temperature comparisons

Supplementary Data

spearman test p-value & monte carlo p-values

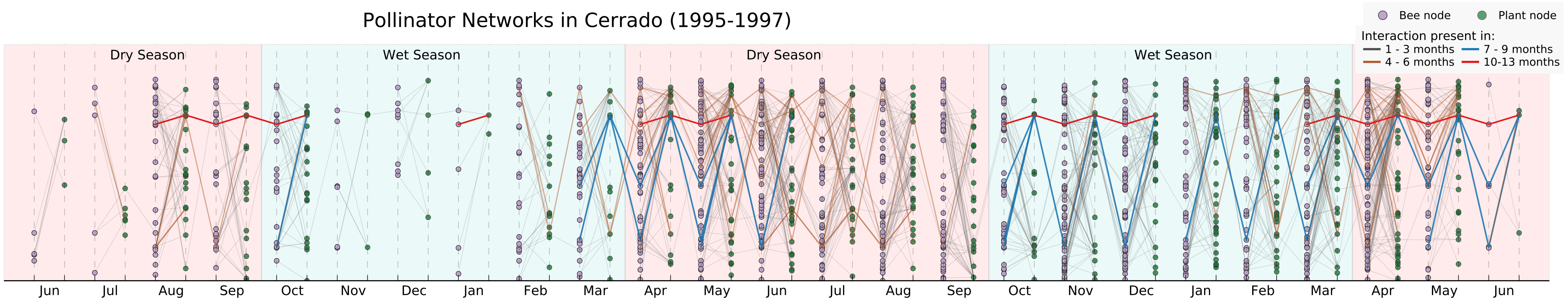
add poster figure, how B-diversity is calculated example

all networks

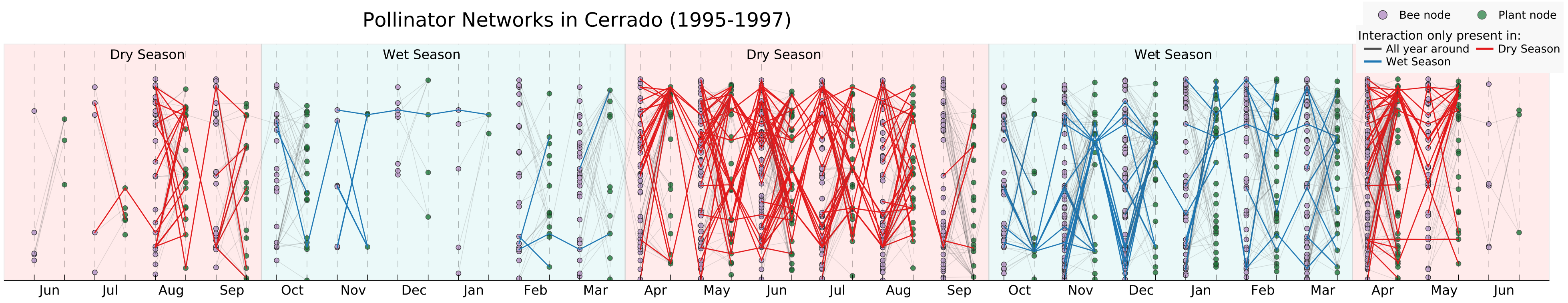
correlation plots

all turnover values

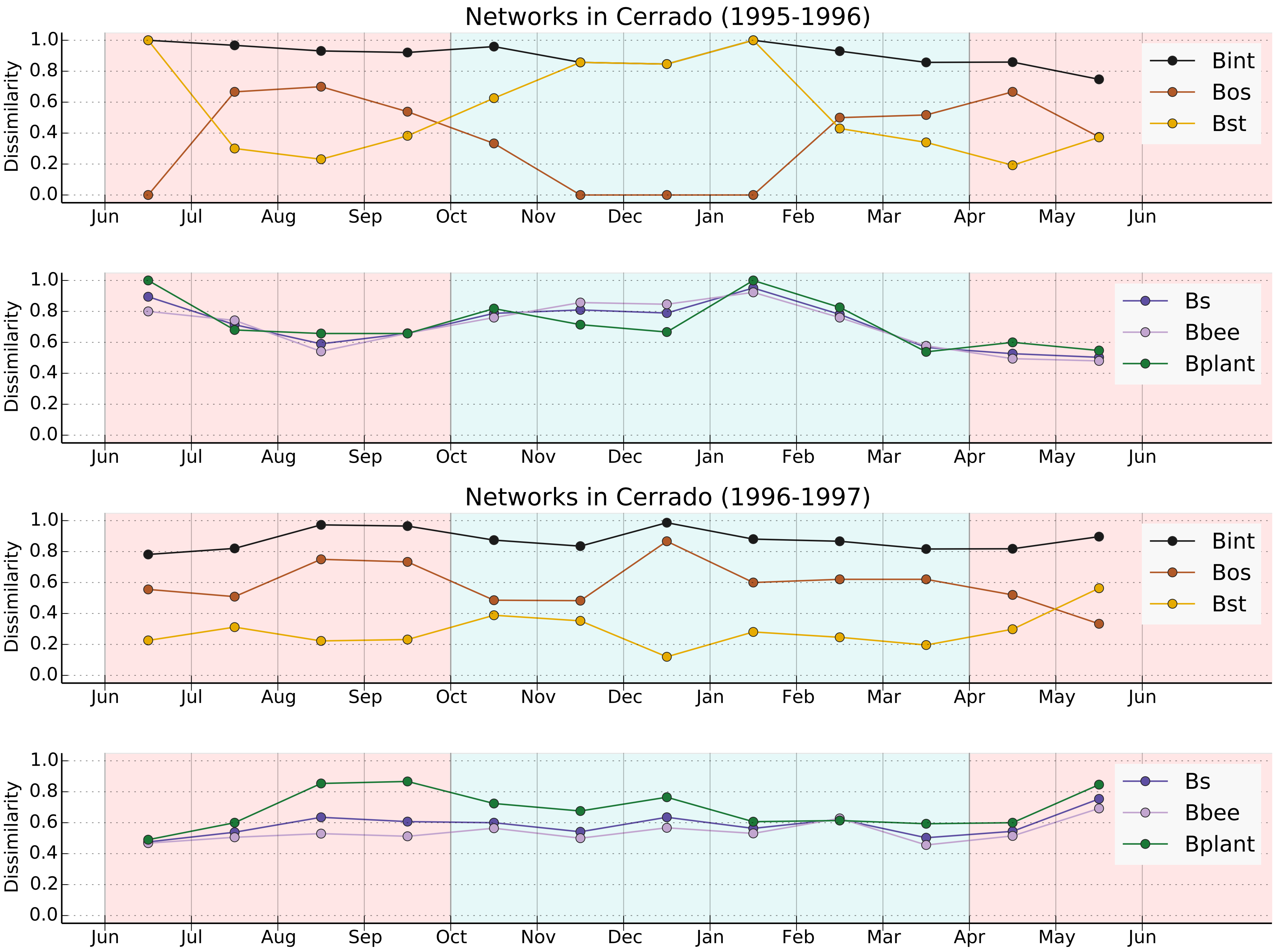
all correlation values

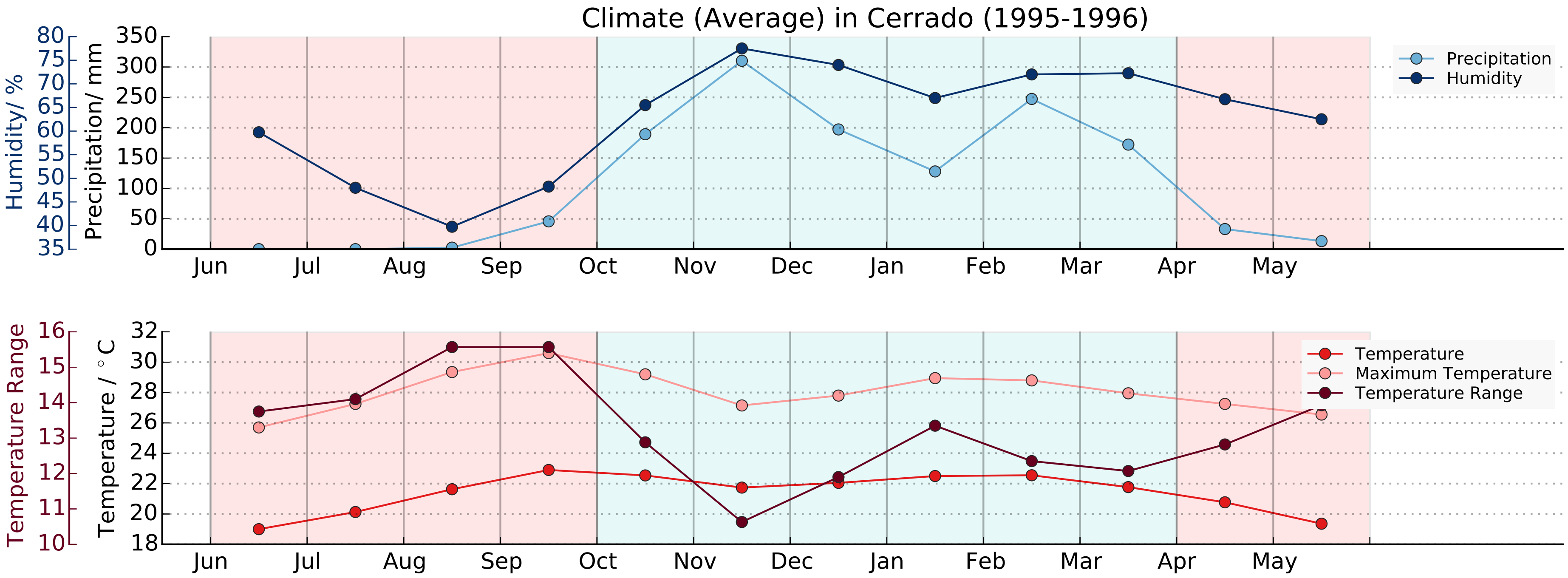


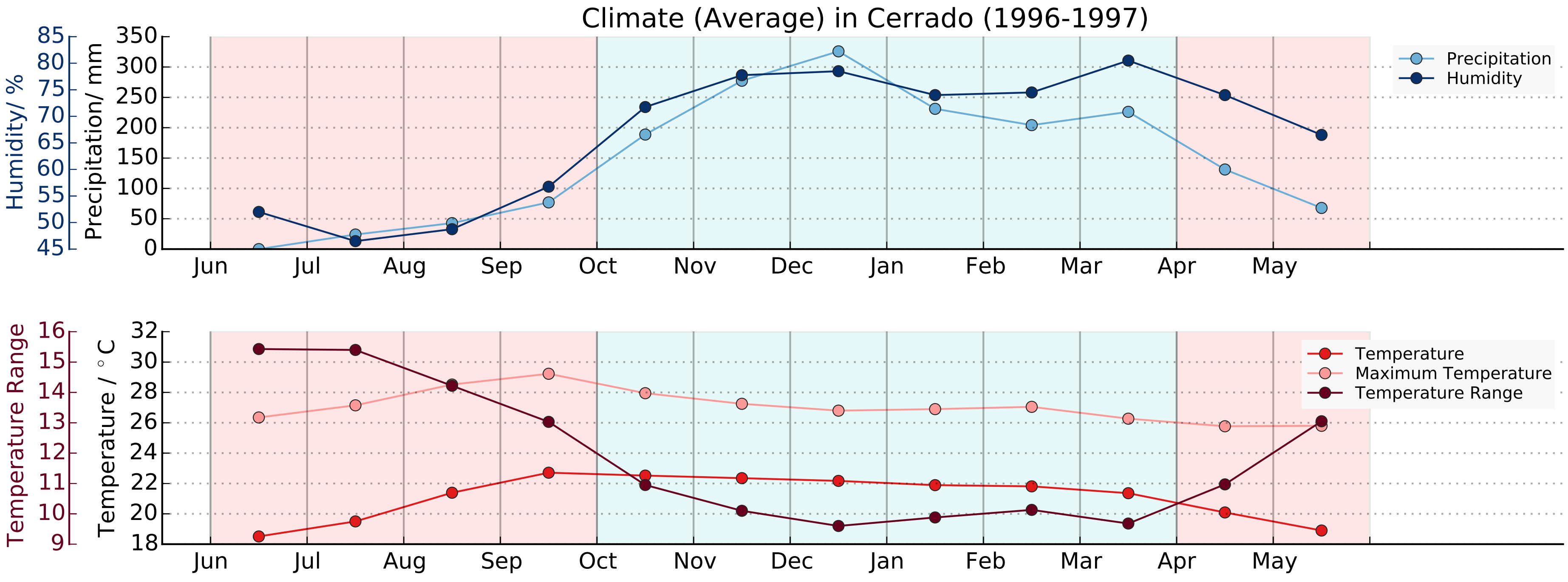
Pollinator Networks in Cerrado (1995-1997)

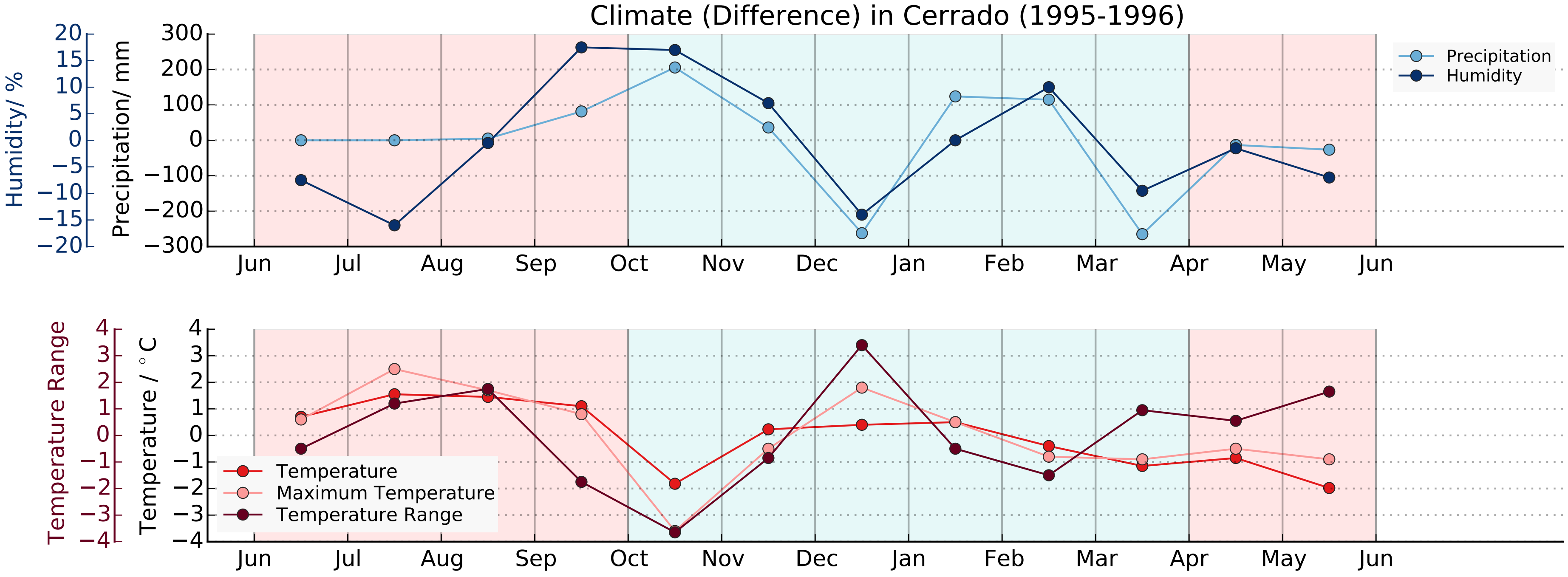


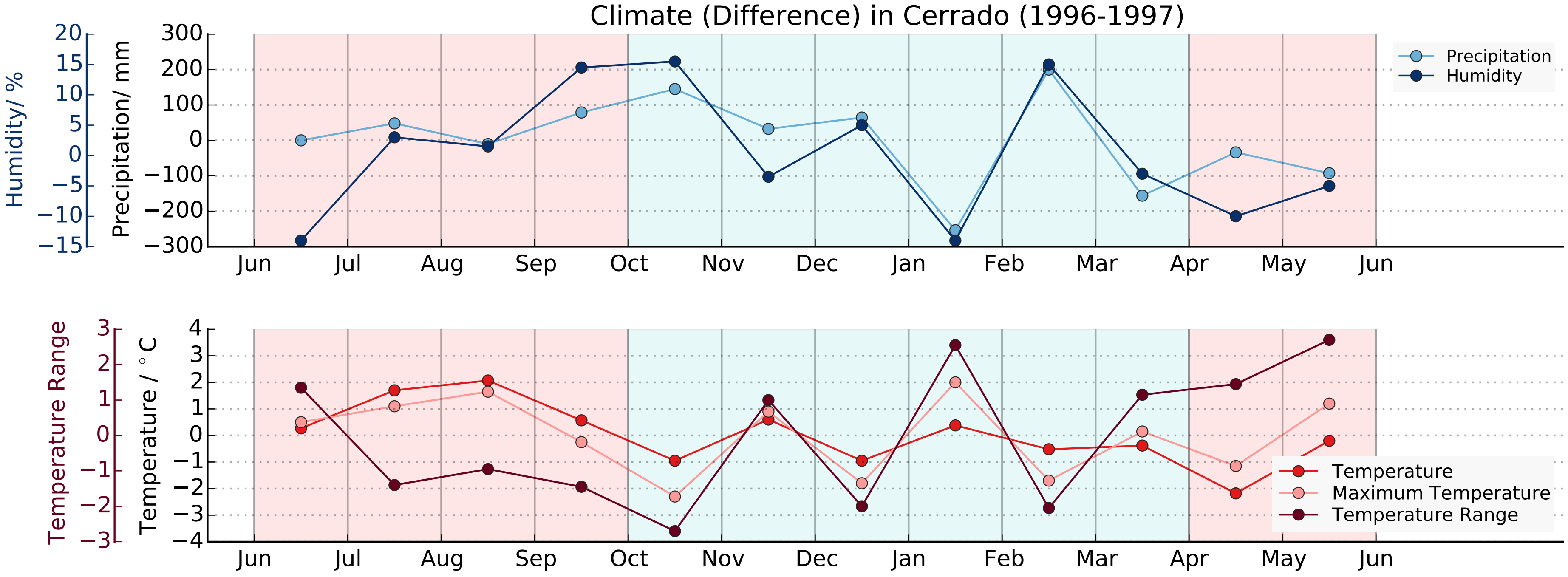
Pollinator Networks in Cerrado (1995-1997)


Networks in Cerrado (1995-1996)
Dissimilarity
1.0
0.8
0.6
0.4
0.2
0.0
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Bint
Bos
Bst
Bs
Bbee
Bplant
Networks in Cerrado (1996-1997)


Climate (Average) in Cerrado (1995-1996)
Humidity/ %
80
75
70
65
60
55
50
45
40
35
Precipitation/ mm
350
300
250
200
150
100
50
0
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Precipitation
Humidity
Temperature Range
16
15
14
13
12
11
10
Temperature / °C
32
30
28
26
24
22
20
18
Temperature
Maximum Temperature
Temperature Range


Climate (Average) in Cerrado (1996-1997)
Humidity/ %
85
80
75
70
65
60
55
50
45
Precipitation/ mm
350
300
250
200
150
100
50
0
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Precipitation
Humidity
Temperature Range
16
15
14
13
12
11
10
9
Temperature / °C
32
30
28
26
24
22
20
18
Temperature
Maximum Temperature
Temperature Range


Climate (Difference) in Cerrado (1995-1996)
Humidity/ %
20
15
10
5
0
−5
−10
−15
−20
Precipitation/ mm
300
200
100
0
−100
−200
−300
Precipitation
Humidity
Temperature Range
4
3
2
1
0
−1
−2
−3
−4
Temperature / °C
Temperature
Maximum Temperature
Temperature Range
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun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−5
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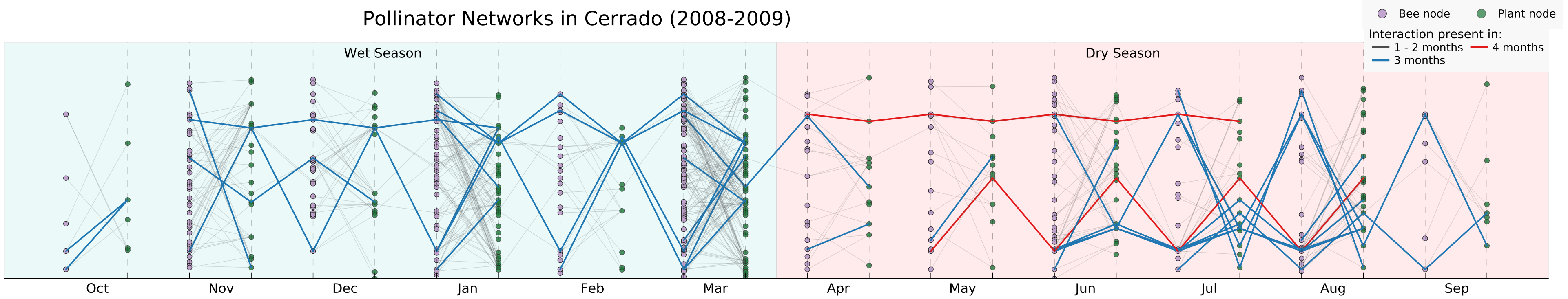
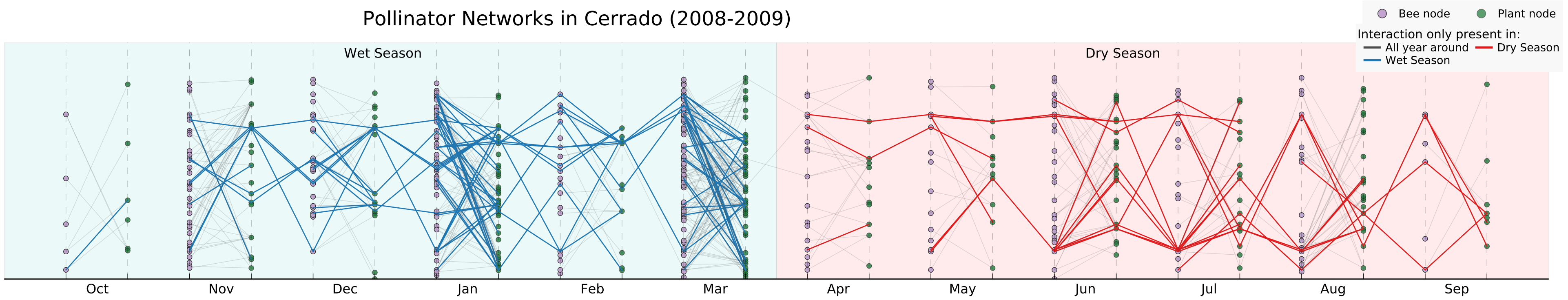
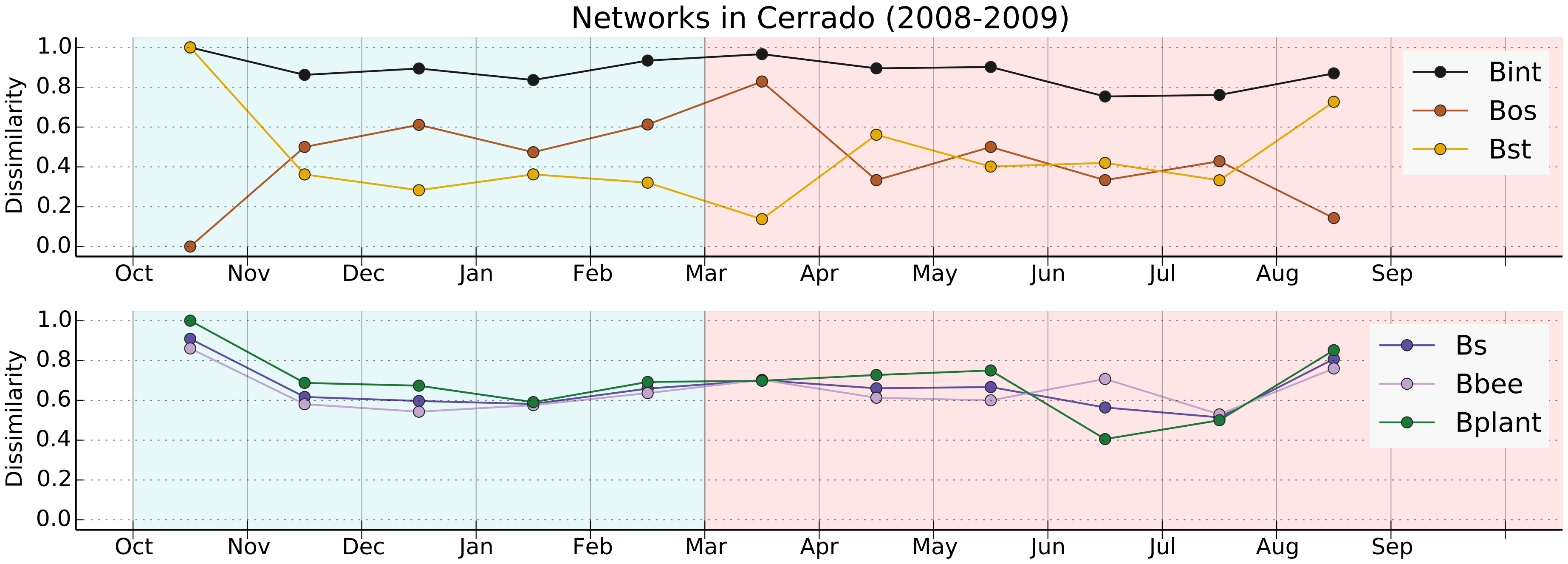
−15
Precipitation/ mm
300
200
100
0
−100
−200
−300
Precipitation
Humidity
Temperature Range
3
2
1
0
−1
−2
−3
Temperature / °C
4
3
2
1
0
−1
−2
−3
−4
Temperature
Maximum Temperature
Temperature Range
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun


Pollinator Networks in Cerrado (2008-2009)
Bee node
Plant node
Interaction present in:
1 - 2 months
4 months
3 months
Wet Season
Dry Season
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep


Pollinator Networks in Cerrado (2008-2009)
Bee node
Plant node
Interaction only present in:
All year around
Dry Season
Wet Season
Wet Season
Dry Season
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep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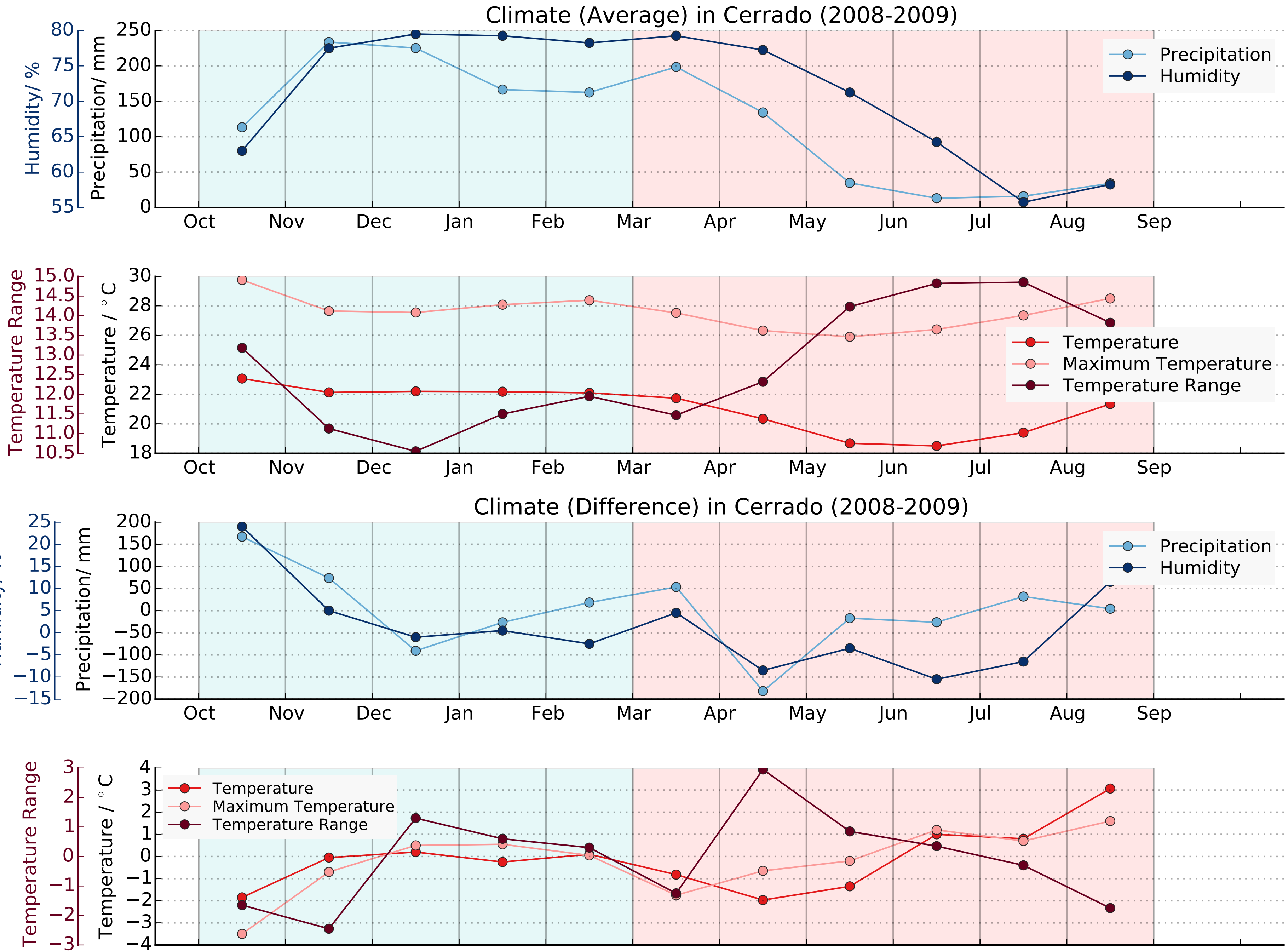
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Bint
Bos
Bst
Dissimilarity
1.0
0.8
0.6
0.4
0.2
0.0
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Bs
Bbee
Bplant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50
0
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Precipitation
Humidity
Temperature Range
15.0
14.5
14.0
13.5
13.0
12.5
12.0
11.5
11.0
10.5
Temperature / °C
30
28
26
24
22
20
18
Temperature
Maximum Temperature
Temperature Range
Climate (Difference) in Cerrado (2008-2009)
Humidity/ %
25
20
15
10
5
0
−5
−10
−15
Precipitation/ mm
200
150
100
50
0
−50
−100
−150
−200
Precipitation
Humidity
Temperature Range
3
2
1
0
−1
−2
−3
Temperature / °C
4
3
2
1
0
−1
−2
−3
−4
Temperature
Maximum Temperature
Temperature Range