

Chapter 2 Draft

Here I'm going to try to understand our data a bit better and state our hypothesis.

First I start with an abstract that could be our guide for hypothesis testing and analyses.

Abstract (draft)

Plant pollinator interactions are a keystone process for ecosystem functioning. However, we lack comprehensive information from both plants and pollinators that can inform from this mutualistic interaction worldwide. In order to tackle this, we have selected 30 networks distributed across the world and looked for key floral traits of plant-pollinator interactions for a total of 1600 species. Here we look how these floral traits shape the different plant-pollinator networks and the main functional groups of insect pollinating species. Given the different nature of the data collated we do not compare across networks and we focus on the main general patterns/results within network. We have conducted our analysis at 3 levels, 1) unique networks, 2) metawebs and by 3) grouping both. We find that specific traits are associated with different guilds of floral visitors within these networks. We also highlight the lack of information about traits and the reproductive biology of the plant species of these networks. Our work shows the importance of deepening species traits in order to understand key processes that can be seen with network metrics and highlights the importance of elemental ecology for species conservation.

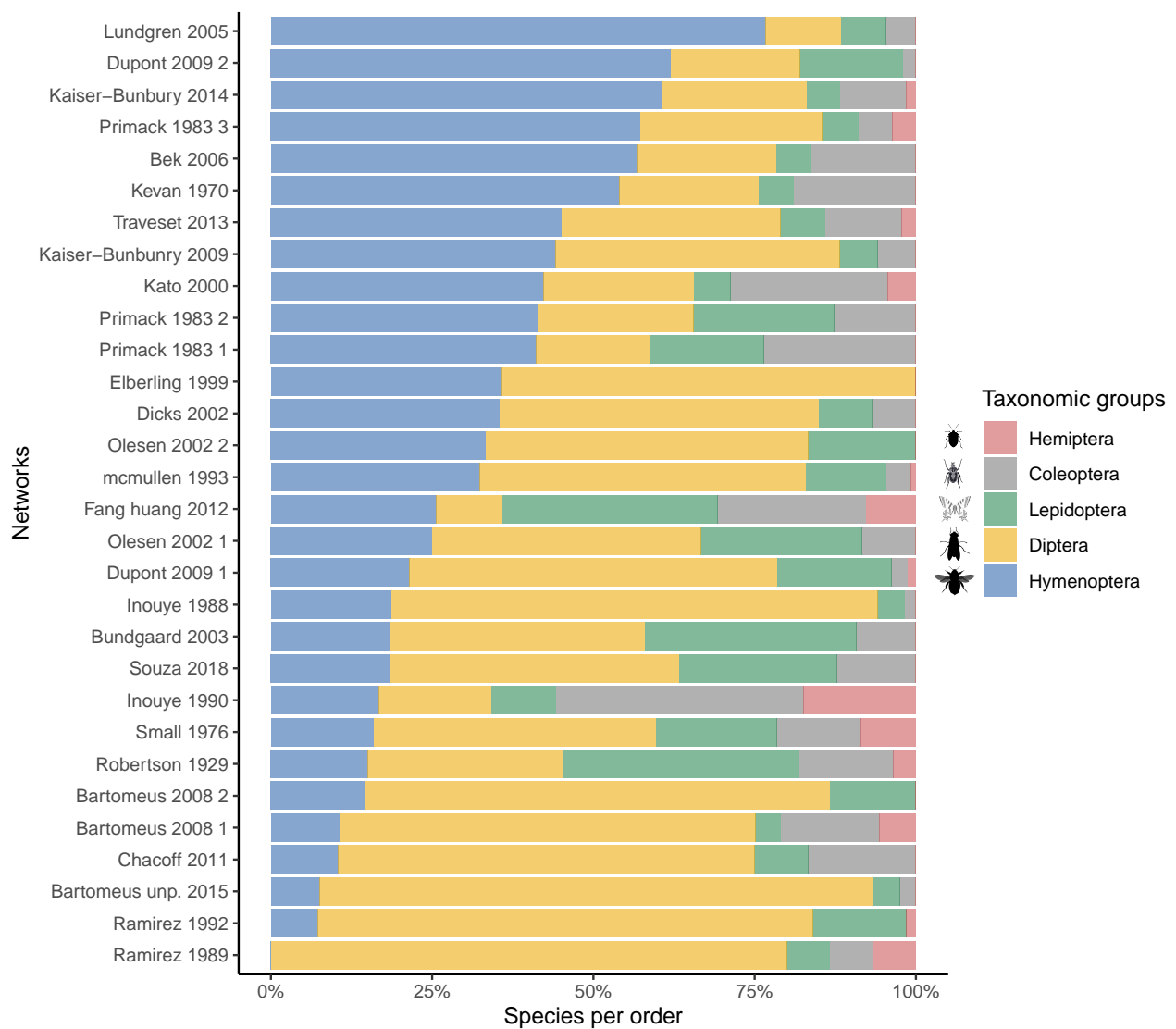
What sort of data do we have?

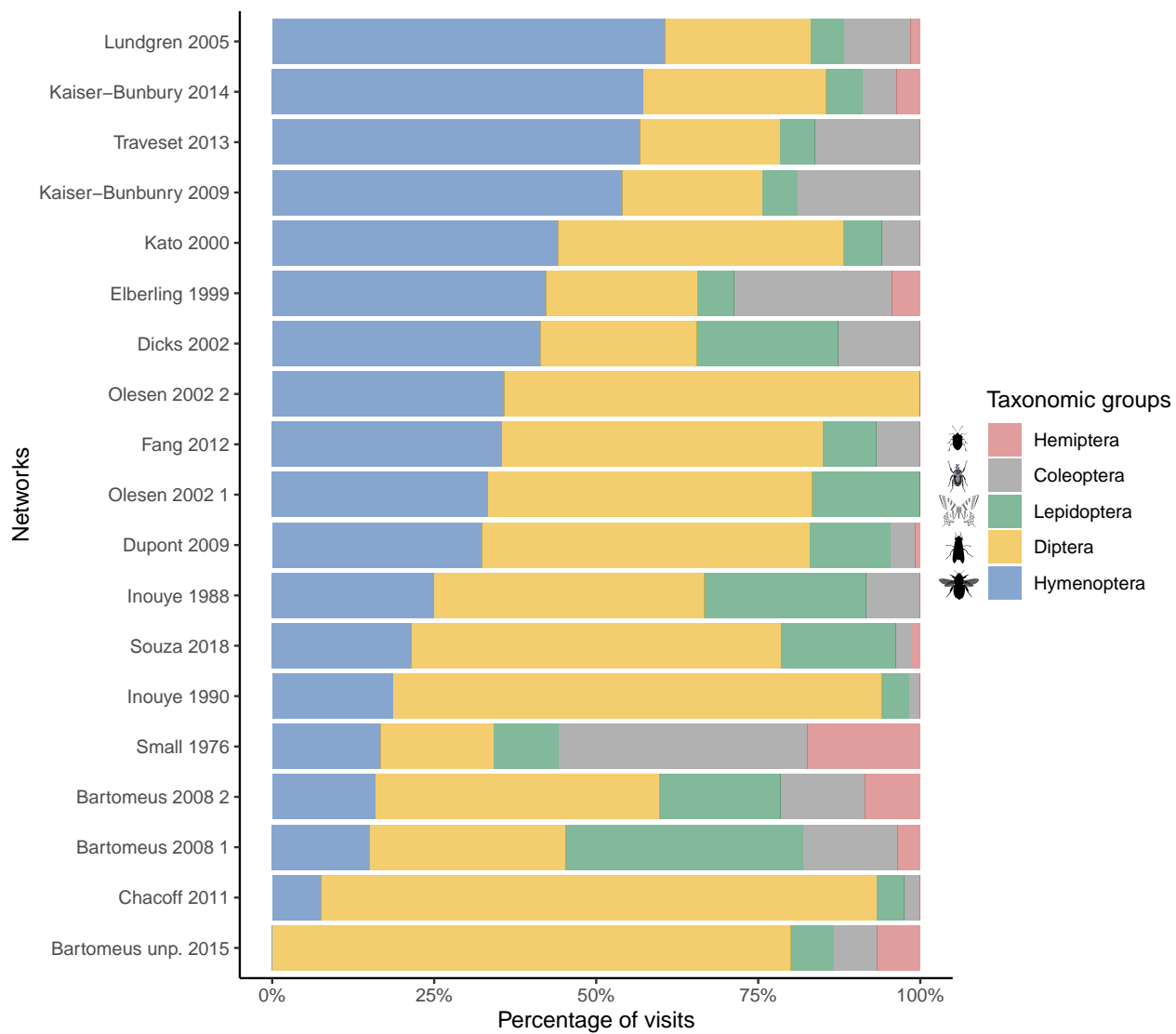
There are approximately 1600 species from 30 different networks. All of these networks are phytocentric (built from plants). The different plant-pollinator communities have been studied with very different sampling effort and methodologies. Therefore, our aim is not to compare across studies but to create a general picture of how floral traits shape the different pollinator taxa and network metrics. Here, we combine the studies with multiple years of sampling and multiple sites within an area in metawebs. These networks give a broader perspective of the sampling area and inform about the regional species pool (Noreika et al. 2019). The data of these networks is quantitative (visitation) or qualitative (binary), there are in total 19 and 11 networks/metawebs of each, respectively.

X	BIBTEXKEY	Id_number	longitude
1	1_metaweb_carpobrotus_Bartomeus_2008	1	3.296797
2	10_metaweb_fang_huang_2012	10	99.63806
3	11_metaweb_inouye_1990	11	135.866667
4	12_inouye_1988	12	148.266667
5	13_metaweb_kaiser_bunbury_2009	13	57.443254
6	14_metaweb_kaiser_bunbury_2014	14	55.43333
7	15_metaweb_kato_2000	15	129.493741
8	16_kevan_1970	16	-71.3
9	17_lundgren_2005	17	-52
10	18_olesen_2002_mauritius	18	57.43
11	19_mcmullen_1993	19	-90.600747
12	2_metaweb_opuntia_Bartomeus_2008	2	3.296797
13	20_metaweb_arthurs_pass_primack_1983	20	171.566667
14	21_metaweb_cass_primack_1983	21	171.78466
15	22_metaweb_craigieburn_primack_1983	22	171.720224
16	23_ramirez_1989	23	-61.716667
17	24_metaweb_ramirez_1992	24	-67.416667
18	25_metaweb_robertson_1929	25	-89.8968771
19	26_small_1976	26	-75.5
20	27_chaco_souza_2018	27	-57.885
21	28_metaweb_traveset_2013	28	-91.012863
22	29_metaweb_bartomeus_unpublished_data_2015	29	-6.16895, -6.304244, -6.280883, -6.371844, -6.43311, -6.428801, -6.555233, -6.555236, -6.506789, -6.761136, -6.660927, -6.667992, -6.667992
23	3_bek_2006	3	10.216667
24	30_olesen_2002_azores	30	-31
25	4_bundgaard_2003	4	10.233333
26	5_metaweb_chacoff_2011	5	-68.015892
27	6_metaweb_dicks_2002	6	1.575532; 1.097873
28	7_metaweb_dupont_2009	7	9.1; 9.266667
29	8_elberling_1999	8	18.5
30	9_dupont_2009_zackenberg	9	-20.5

PLOT 1

Here I show the percentage of orders from the different species without considering visitation and just richness of species. Therefore, if we have a network with 4 species from different orders, each will appear as 25% within the stack bar of the barplot.

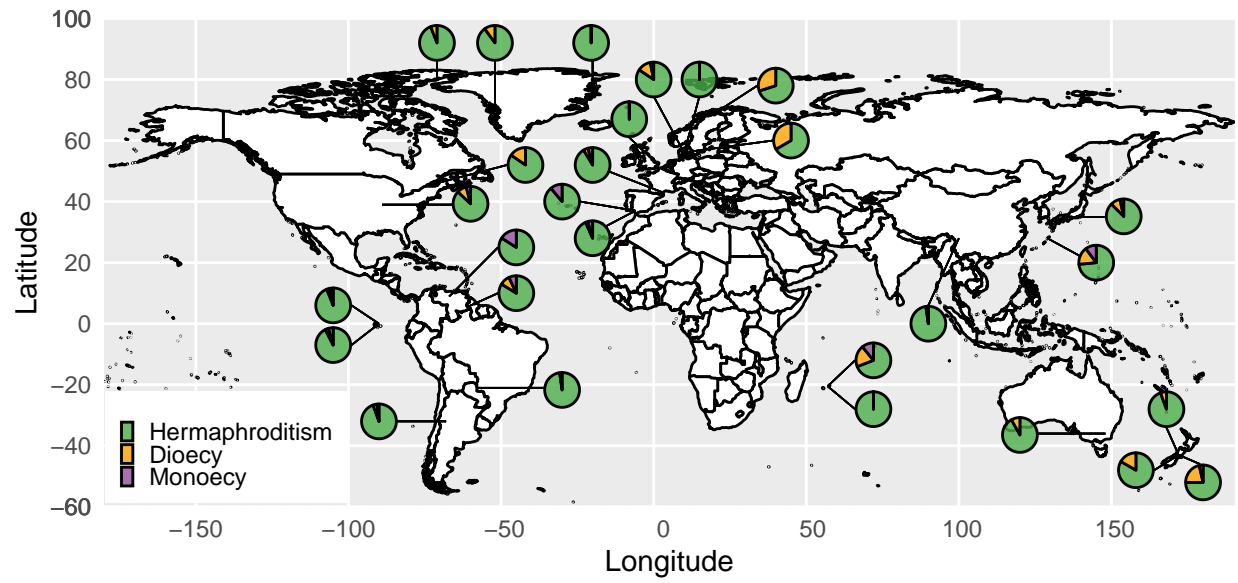




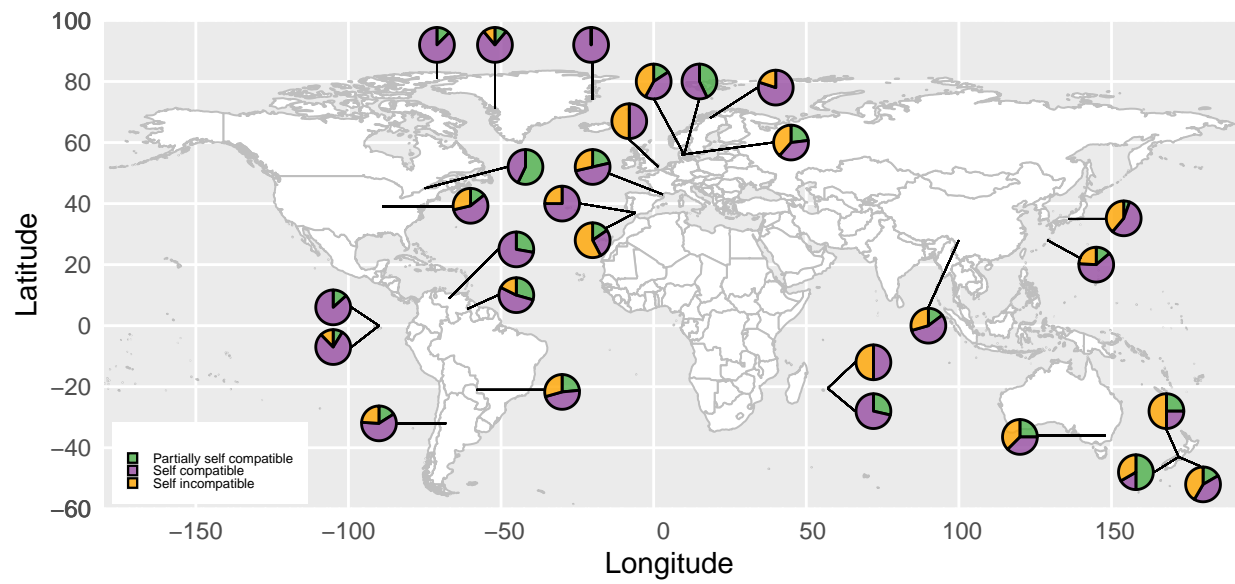
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*PLOT 2**

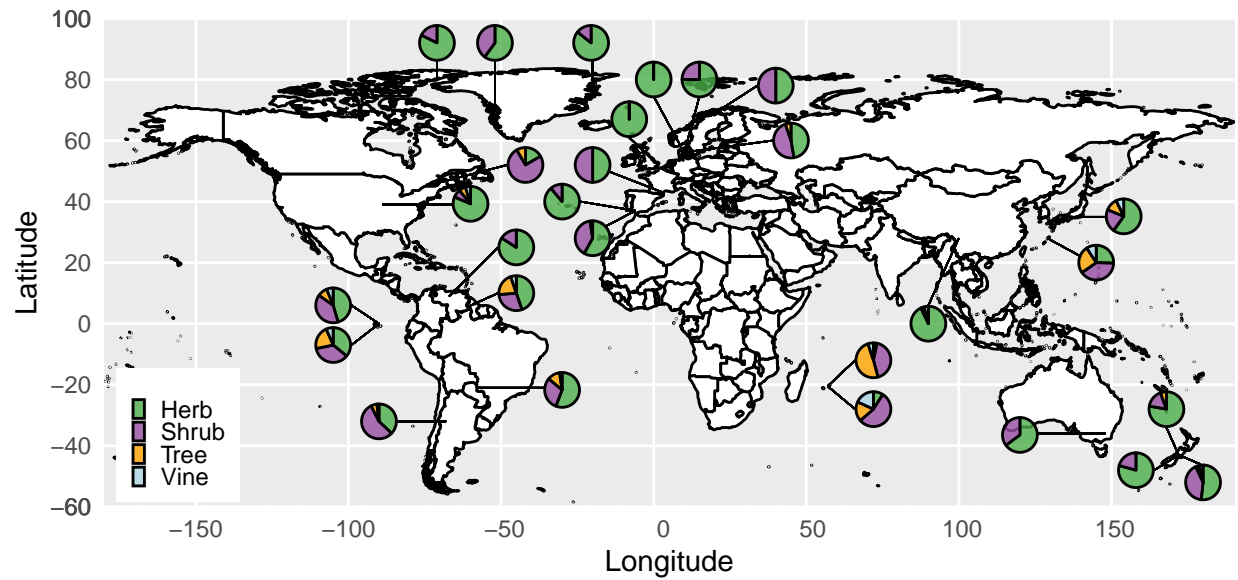
Breeding systems



PLOT 3
Compatibility system



PLOT 4
Life form



REFERENCES

Noreika, Norbertas, Ignasi Bartomeus, Marie Winsa, Riccardo Bommarco, and Erik Öckinger. 2019. "Pollinator Foraging Flexibility Mediates Rapid Plant-Pollinator Network Restoration in Semi-Natural Grasslands." *Scientific Reports* 9 (1). Nature Publishing Group: 1–11.