APPENDIX S1 – Additional tables and figures.

Table S1 – Loadings of the 19 climatic variables and altitude in the principal components analysis across the 406 0.5º cells in Egypt. The four components (PC1-4) with mean eigenvalues greater than 1 are shown. The five highest loadings for each principal component are displayed in bold.

Variable	PC1	PC2	PC3	PC4
Altitude	0.020	-0.037	**0.472**	0.143
Annual Mean Temperature	0.070	**0.178**	**-0.108**	0.087
Mean Diurnal Temperature Range	0.093	-0.093	-0.040	0.029
Isothermality	0.069	0.004	-0.071	**-0.270**
Temperature Seasonality	0.086	**-0.122**	-0.013	0.185
Max Temperature of Warmest Month	**0.099**	0.048	-0.078	0.113
Min Temperature of Coldest Month	-0.023	**0.240**	-0.066	-0.033
Annual Temperature Range	0.091	-0.112	-0.019	0.107
Mean Temperature of Wettest Quarter	0.034	**0.196**	**0.158**	0.137
Mean Temperature of Driest Quarter	-0.083	0.006	-0.032	**-0.344**
Mean Temperature of Warmest Quarter	0.088	0.119	-0.107	0.128
Mean Temperature of Coldest Quarter	0.028	**0.238**	-0.108	0.002
Annual Precipitation	**-0.097**	0.001	-0.055	0.257
Precipitation of Wettest Month	**-0.096**	0.019	-0.059	0.233
Precipitation Seasonality	-0.089	0.040	0.049	-0.228
Precipitation of Wettest Quarter	**-0.096**	0.005	-0.071	**0.262**
Precipitation of Driest Quarter	-0.008	0.070	**0.281**	**-0.303**
Precipitation of Warmest Quarter	0.002	0.089	**0.399**	0.205
Precipitation of Coldest Quarter	**-0.094**	-0.014	-0.084	**0.277**

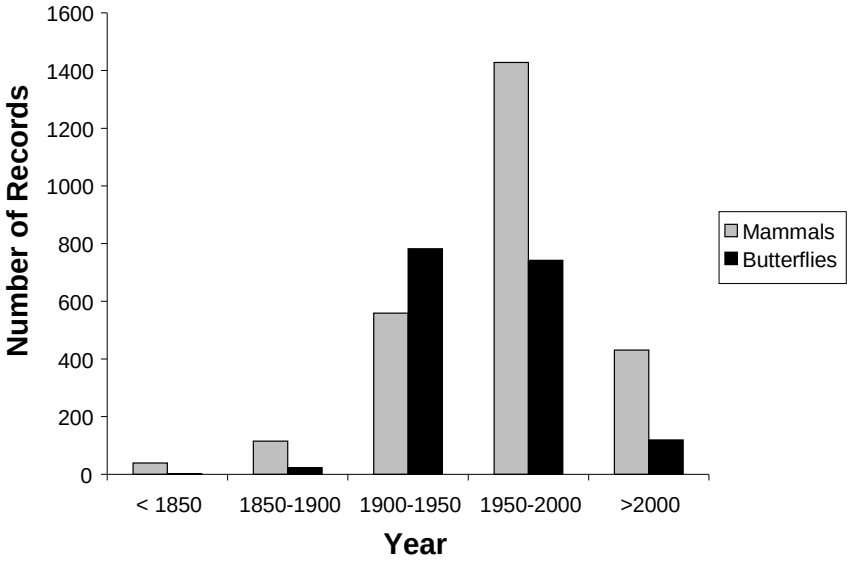

Figure S1 - Frequency distribution of butterfly and mammal records across the years during which the data were collected.

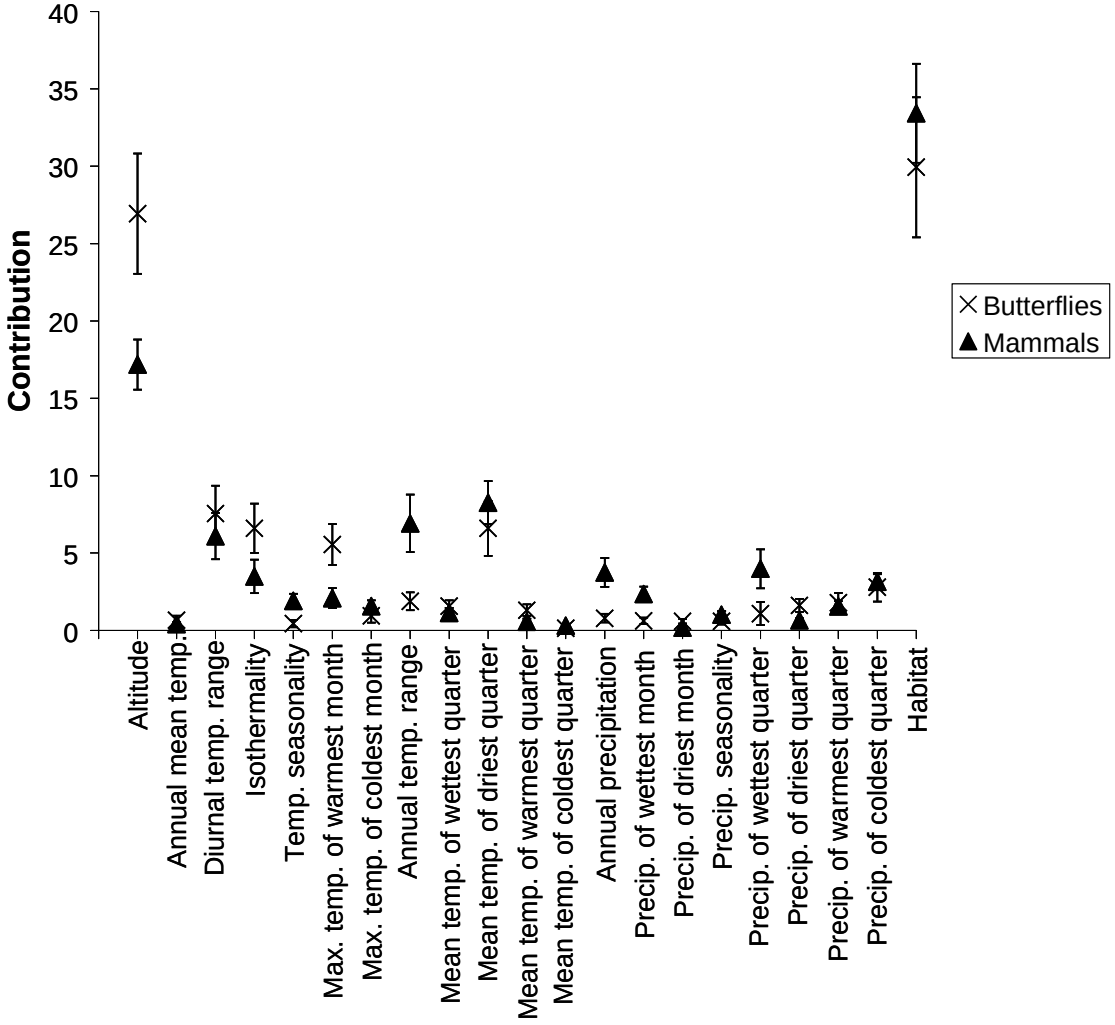

Figure S2 – Mean contribution (%) of each of the environmental variables to the species distribution models, averaged across all species. A complete breakdown of variable importance by species is given in Table 1 in Appendix S2 in the supporting information.

APPENDIX S2 – Contributions of each of the environmental variables to the species distribution models.

Table S1 – Number of presence records used to build the Maxent distribution models and contribution (%) of each of the 19 climatic variables, altitude and habitat to the models for each of the species. A key to the variables used is given at the bottom of the table.

Species	Number of Presence Records	Variable Contributions																				
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Butterflies:																						
Agrodiaetus loewii	28	46	0	26	1	0	0	0	2	3	1	2	0	0	5	0	0	0	0	0	5	8
Apharitis acamas	15	59	0	13	0	1	10	0	6	1	2	1	0	1	1	0	0	1	0	2	1	3
Azanus jesous	8	1	8	24	32	0	0	0	1	1	0	0	0	0	1	0	0	0	0	7	0	25
Azanus ubaldus	18	0	0	2	1	0	0	1	14	0	6	0	0	0	0	1	0	0	3	0	30	44
Borbo borbonica	19	1	0	0	0	0	0	3	0	0	5	0	0	0	0	0	0	24	6	0	6	56
Carcharodus alceae	14	55	0	1	13	0	13	0	3	1	0	3	0	0	0	0	0	0	0	0	0	10
Carcharodus stauderi	16	40	1	2	22	0	15	0	0	1	0	3	0	3	0	1	1	0	0	0	0	11
Colias croceus	60	30	0	6	0	0	5	0	13	2	3	2	0	0	0	0	0	0	1	0	2	35
Colotis fausta	23	53	1	26	5	0	0	0	4	0	0	0	0	0	0	1	0	0	0	1	6	3
Danaus chrysippus	51	18	0	0	0	0	1	0	0	0	6	0	0	0	4	1	1	0	3	0	0	66
Deudorix livia	51	3	0	0	0	0	0	0	0	0	3	0	0	0	0	1	0	0	2	0	4	84
Euchloe aegyptiaca	20	27	0	24	2	0	12	0	7	0	0	0	0	0	0	2	0	11	0	0	0	16
Euchloe belemia	6	14	0	0	0	0	0	13	0	0	24	0	0	0	0	0	4	0	0	18	0	27
Euchloe falloui	12	48	0	8	19	0	11	0	1	4	0	2	0	0	2	0	0	0	0	0	4	2
Freyeria trochylus	32	24	0	0	0	2	0	0	1	0	11	0	0	3	0	0	0	0	0	1	3	53
Gegenes nostrodamus	37	3	0	0	0	0	1	0	0	0	35	0	0	1	1	0	0	0	2	0	1	54
Hypolimnas misippus	10	0	0	1	9	8	0	0	0	0	0	0	0	0	0	0	4	0	1	0	8	68
Iolana alfierii	12	32	4	4	6	0	34	0	0	9	0	8	0	1	0	0	0	0	0	1	0	1
Lampides boeticus	50	11	0	0	1	0	0	0	0	2	12	0	0	0	0	2	0	0	5	0	0	65
Lycaena phlaeas	8	1	0	40	28	0	6	0	2	1	0	8	1	3	0	0	0	0	7	0	0	3
Melitaea deserticola	34	52	0	27	3	1	0	0	1	0	0	2	0	0	4	2	0	0	0	1	2	5
Melitaea trivia	11	42	0	2	23	0	13	0	1	6	0	0	2	0	2	3	0	0	0	0	2	4
Papilio saharae	11	33	0	2	24	0	25	0	2	2	0	3	0	0	0	0	5	0	0	0	0	3

Pelopidas thrax	29	13	0	0	0	0	2	2	0	0	25	0	0	0	0	0	0	0	9	0	0	49
Pieris rapae	43	4	0	0	0	0	3	0	0	0	5	0	0	0	0	1	1	0	1	9	3	73
Plebejus philbyi	14	55	0	4	19	0	13	0	1	2	0	1	0	0	1	0	0	0	0	0	0	4
Pontia daplidice	35	56	0	16	2	0	0	0	4	0	0	0	0	0	0	0	1	2	0	3	0	15
Pontia glauconome	49	39	0	15	2	0	1	5	0	3	8	0	0	2	0	0	0	0	0	10	2	14
Pseudophilotes sinaicus	9	79	1	1	3	0	9	1	0	1	0	4	0	0	0	0	0	0	0	0	0	3
Pseudotergumia pisidice	16	64	4	8	3	0	10	0	0	5	0	0	1	0	0	0	0	0	0	3	0	1
Spialia doris	23	0	0	8	2	3	0	7	4	3	41	0	0	0	0	2	0	0	7	0	4	19
Tarucus rosaceus	37	8	0	0	5	1	4	0	0	0	23	0	0	1	1	2	0	0	6	1	0	48
Vanessa atalanta	17	8	4	0	0	0	1	0	0	0	10	0	0	8	1	0	0	0	0	0	0	67
Vanessa cardui	63	18	0	1	0	0	0	0	0	7	2	0	0	0	0	2	2	0	0	1	3	64
Zizeeria karsandra	41	8	0	3	4	0	5	0	0	0	9	6	0	4	0	0	0	0	2	4	11	42
Mammals:																						
Acinonyx jubatus	35	23	3	0	0	3	7	3	4	0	22	0	1	7	3	0	3	0	0	0	14	7
Acomys cahirinus	106	9	5	1	0	1	3	21	0	0	6	0	2	1	5	1	2	0	2	0	0	42
Acomys dimidiatus	14	1	0	7	60	0	0	0	0	0	0	0	0	11	2	0	0	0	1	1	11	8
Acomys russatus	18	17	0	36	9	0	0	0	0	0	1	0	0	8	0	0	3	1	3	3	10	9
Allactaga tetradactyla	10	3	0	3	2	0	10	0	6	1	0	9	0	35	5	0	0	1	0	0	7	20
Arvicanthis niloticus	47	26	1	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	69
Asellia tridens	42	22	0	0	1	0	1	0	0	0	0	1	0	0	3	0	0	0	0	0	5	65
Canis aureus	17	9	0	0	0	0	3	0	0	0	5	0	0	1	0	0	0	0	0	3	0	77
Canis lupaster	58	30	0	0	0	0	2	0	1	0	9	4	0	0	0	0	0	0	2	0	0	51
Capra nubiana	105	20	0	30	6	0	2	1	4	2	2	4	0	0	1	0	1	0	1	0	11	15
Crocidura olivieri	26	11	0	0	1	1	0	0	1	4	15	0	0	0	5	0	2	0	0	0	3	58
Crocidura religiosa	9	22	0	0	0	0	0	2	0	1	0	0	0	0	3	0	0	0	0	1	0	71
Dipodillus campestris	19	9	0	0	0	0	0	5	0	0	20	0	0	7	23	0	1	4	0	6	0	25
Dipodillus dasyurus	25	26	0	41	8	0	0	1	1	0	6	0	0	2	4	0	0	0	0	0	0	10
Dipodillus simoni	13	5	0	9	2	2	2	1	5	0	0	2	0	0	3	0	0	19	0	0	8	43
Eliomys melanurus	15	30	3	8	19	0	28	0	4	0	0	0	2	0	1	0	0	0	0	0	0	6
Eptesicus bottae	8	0	0	0	0	0	27	0	7	13	0	0	4	10	3	0	0	3	2	6	3	23

Felis chaus	41	19	0	0	0	1	0	1	0	0	0	0	0	0	1	0	0	1	4	0	0	73
Felis margarita	7	0	0	49	0	0	0	0	45	0	0	0	0	0	0	0	0	0	5	0	0	0
Felis silvestris	32	7	0	29	19	0	1	2	0	0	0	0	0	6	0	0	2	0	0	10	3	19
Gazella dorcas	141	14	1	1	1	0	1	4	47	0	1	0	0	4	1	0	1	1	1	2	0	18
Gerbillus amoenus	33	38	0	0	0	1	0	0	1	0	19	0	0	0	0	0	3	0	0	0	0	38
Gerbillus andersoni	57	16	1	6	0	6	2	0	12	1	2	1	0	42	0	0	0	3	0	0	5	3
Gerbillus floweri	18	1	0	11	2	0	0	2	8	6	44	0	0	5	2	0	0	0	1	8	0	9
Gerbillus gerbillus	196	25	2	0	4	1	3	0	3	0	19	0	3	0	2	0	2	2	0	1	2	30
Gerbillus henleyi	44	3	0	7	1	7	0	3	56	2	8	0	0	0	1	0	1	0	0	0	2	9
Gerbillus perpallidus	20	29	0	0	3	1	2	3	0	1	21	0	0	0	1	0	11	16	0	0	2	10
Gerbillus pyramidum	101	40	1	0	4	0	6	4	0	2	3	0	0	4	1	0	0	1	0	0	1	32
Hemiechinus auritus	69	19	0	5	0	5	0	2	9	1	10	0	0	9	2	0	1	1	0	0	2	36
Herpestes ichneumon	29	11	0	0	1	5	0	1	1	3	8	0	1	4	0	0	1	0	0	1	1	63
Ictonyx libyca	22	14	0	1	4	8	0	7	4	0	35	0	0	0	0	0	2	2	1	1	9	12
Jaculus jaculus	124	18	0	1	0	14	3	2	0	0	21	0	3	0	0	0	0	4	1	1	3	26
Jaculus orientalis	25	0	1	6	2	2	3	0	0	1	1	1	0	3	3	0	1	39	1	0	8	28
Lepus capensis	85	14	0	0	1	2	1	2	49	0	2	0	0	1	7	1	5	0	1	2	2	9
Meriones crassus	99	11	1	3	0	0	1	2	29	2	10	0	1	2	5	1	0	1	0	7	9	14
Meriones libycus	25	36	3	3	0	1	2	0	4	0	7	5	0	0	0	0	0	27	0	1	2	9
Meriones shawi	22	11	0	10	5	3	2	0	5	0	0	3	0	0	8	0	0	38	0	0	3	12
Mus musculus	93	23	0	0	4	0	1	1	2	0	7	2	1	0	1	0	0	0	0	0	2	55
Mustela nivalis	21	13	0	0	3	0	0	0	0	0	30	0	0	1	0	0	0	0	0	1	0	52
Nesokia indica	21	27	0	0	0	4	0	0	0	0	12	0	0	0	0	0	3	0	0	1	0	53
Nycteris thebaica	28	4	1	0	0	0	0	0	0	4	2	0	0	0	0	0	0	0	0	0	0	88
Otonycteris hemprichii	16	45	0	0	0	0	0	0	0	0	25	0	0	0	0	0	0	0	0	0	0	30
Pachyuromys duprasi	24	9	0	0	11	8	0	1	1	12	39	0	0	0	0	0	0	0	0	1	1	17
Panthera pardus	22	22	0	27	13	0	2	0	0	1	2	0	0	6	0	0	3	0	1	2	4	17
Paraechinus aethiopicus	33	13	0	6	0	0	0	0	60	0	0	0	0	1	0	2	7	0	2	0	1	8
Pipistrellus kuhlii	30	24	0	0	0	3	0	0	0	0	31	0	0	0	0	0	0	4	0	1	0	36
Plecotus christii	31	42	0	0	6	0	0	0	0	0	1	0	0	0	7	0	0	0	0	3	3	36
Procavia capensis	37	11	0	6	1	0	0	2	23	2	0	0	0	3	0	2	0	0	3	0	6	41

Psammomys obesus	68	7	0	13	3	3	5	0	20	0	0	1	0	9	1	0	2	27	0	0	3	6
Rattus norwegicus	25	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	6	1	5	0	86
Rattus rattus	64	22	0	0	0	0	1	1	0	0	5	0	0	1	2	0	1	0	1	0	0	66
Rhinopoma hardwickii	26	8	0	0	0	2	0	7	0	0	0	1	0	9	0	0	0	0	0	9	10	52
Rhinopoma microphyllum	8	31	0	0	2	0	0	6	0	7	9	0	0	7	6	0	0	2	0	1	6	24
Rousettus aegyptiacus	35	0	0	5	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	91
Sekeetamys calurus	32	9	0	42	5	0	0	0	7	0	0	0	0	0	0	1	2	0	1	0	8	25
Spalax ehrenbergi	19	17	0	6	5	4	0	1	5	0	3	0	0	1	12	0	1	41	0	0	0	4
Taphozous nudiventris	13	41	0	0	0	0	0	2	0	1	9	0	0	0	7	0	0	0	0	0	4	36
Taphozous perforatus	19	1	0	0	0	1	0	2	0	0	1	0	0	6	0	0	0	0	0	12	3	74
Vulpes rueppellii	68	33	0	0	1	19	0	0	0	1	0	1	0	9	0	1	0	0	2	1	13	20
Vulpes vulpes	116	9	0	0	1	5	2	1	1	0	14	0	0	0	3	0	2	0	0	0	1	60
Vulpes zerda	36	48	0	0	0	0	0	2	1	0	12	0	0	10	8	0	1	0	0	3	0	15

Variable Key

1 Altitude
2 Annual mean temperature
3 Mean diurnal temperature range
4 Isothermality
5 Temperature seasonality
6 Maximum temperature of warmest month
7 Minimum temperature of coldest month
8 Annual temperature range
9 Mean temperature of wettest quarter
10 Mean temperature of driest quarter
11 Mean temperature of warmest quarter
12 Mean temperature of coldest quarter
13 Annual precipitation
14 Precipitation of wettest month
15 Precipitation of driest month
16 Precipitation seasonality
17 Precipitation of wettest quarter
18 Precipitation of driest quarter
19 Precipitation of warmest quarter
20 Precipitation of coldest quarter
21 Habitat