

SUPPLEMENTARY MATERIALS FOR THE ARTICLE:

**Distribution of *Drepanaphis acerifoliae* – aphid pest of *Acer* trees – faced with global climate change**

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**Supplementary Material 2: The list of bioclimatic variables considered as predictors with a correlation coefficient**

Below we present a list of bioclimatic variables that were considered for modelling the potential range of *Drepanaphis acerifoliae* occurrence. Variable names and their explanation come from the WorldClim website (<https://www.worldclim.org/data/bioclim.html>). Marked in green were used in the final modelling.

BIO1 = Annual Mean Temperature

BIO2 = Mean Diurnal Range (Mean of monthly (max temp - min temp))

BIO3 = Isothermality (BIO2/BIO7) (×100)

**BIO4 = Temperature Seasonality (standard deviation ×100)**

BIO5 = Max Temperature of Warmest Month

BIO6 = Min Temperature of Coldest Month

BIO7 = Temperature Annual Range (BIO5-BIO6)

BIO8 = Mean Temperature of Wettest Quarter

BIO9 = Mean Temperature of Driest Quarter

**BIO10 = Mean Temperature of Warmest Quarter**

BIO11 = Mean Temperature of Coldest Quarter

**BIO12 = Annual Precipitation**

BIO13 = Precipitation of Wettest Month

BIO14 = Precipitation of Driest Month

**BIO15 = Precipitation Seasonality (Coefficient of Variation)**

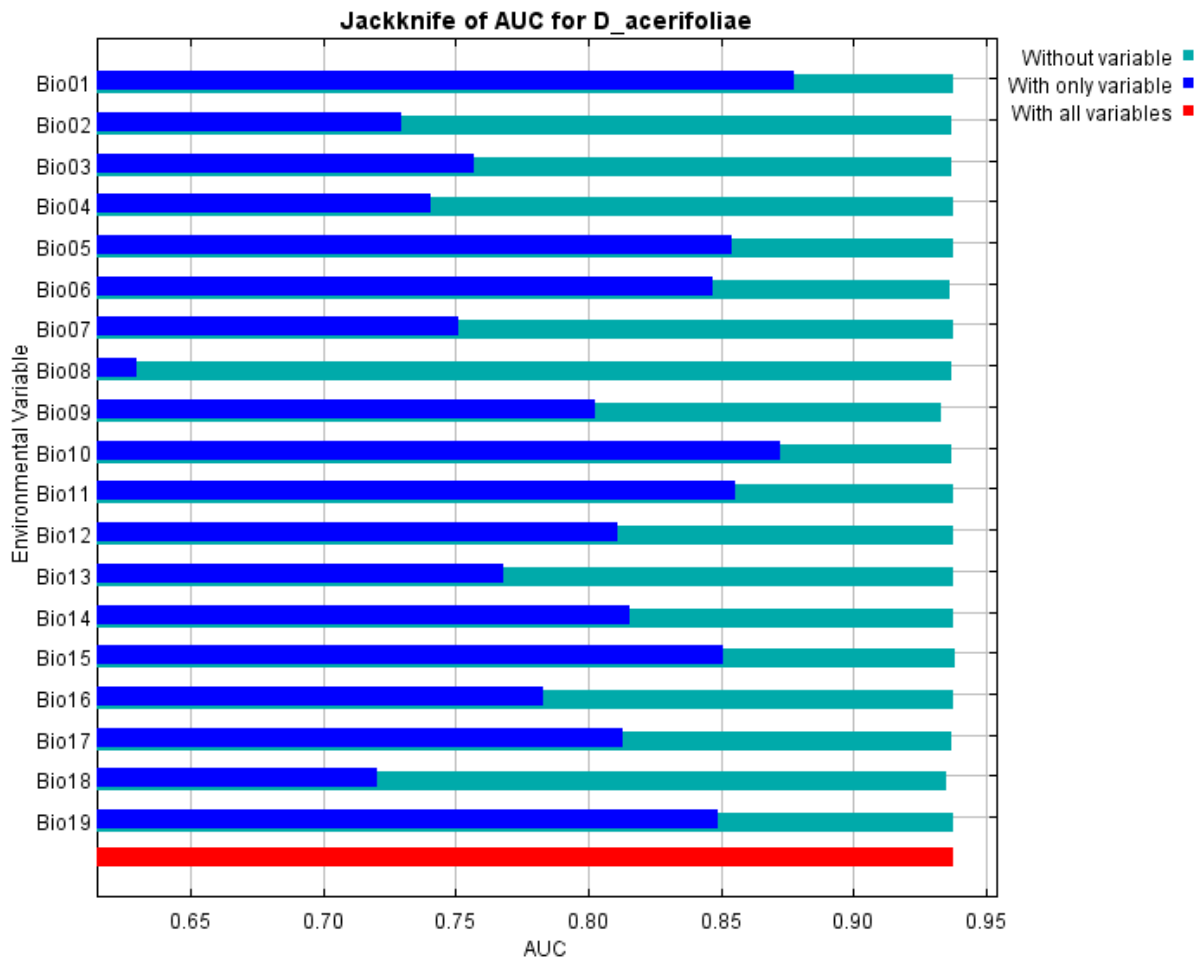
BIO16 = Precipitation of Wettest Quarter

BIO17 = Precipitation of Driest Quarter

BIO18 = Precipitation of Warmest Quarter

**BIO19 = Precipitation of Coldest Quarter**

The analysis of these data, based on correlation and initial model for all variables (see below), indicates that the temperature range of the warmest quarter, the annual precipitation ranges and those of the coldest quarter, as well as the seasonality of temperatures and precipitation, are the most important factors for the occurrence of aphids of the species *Drepanaphis acerifoliae*.



**Suppl. Mat. 2 – Fig. 1.** Results of jackknife test of all bioclimatic variable importance using AUC on data for *Drepanaphis acerifoliae*. The jackknife test in blue bars shows individual environmental variable importance relative to the red bar, which shows all environmental variables. The light blue bar shows whether a variable has any information that is not present in the other variables, and a dark blue bar shows whether a variable has any useful information by itself. Values shown are averages over replicate runs.

**Suppl. Mat. 2 – Table 1.** Results of correlation analysis of bioclimatic variables based on data collected from *Drepanaphis acerifoliae* occurrence points

	Bio01	Bio02	Bio03	Bio04	Bio05	Bio06	Bio07	Bio08	Bio09	Bio10	Bio11	Bio12	Bio13	Bio14	Bio15	Bio16	Bio17	Bio18	Bio19
Bio01	1																		
Bio02	0,463179	1																	
Bio03	0,77681	0,663943	1																
Bio04	-0,7659	-0,41678	-0,93752	1															
Bio05	0,748145	0,628518	0,42429	-0,26691	1														
Bio06	0,936779	0,420422	0,878764	-0,92598	0,555647	1													
Bio07	-0,71583	-0,16397	-0,8206	0,961499	-0,12574	-0,89469	1												
Bio08	0,452105	-0,08866	-0,00791	0,020659	0,486907	0,25141	-0,03839	1											
Bio09	0,565874	0,602978	0,761828	-0,73723	0,382233	0,681228	-0,60749	-0,36134	1										
Bio10	0,842951	0,370524	0,37577	-0,30359	0,910396	0,621333	-0,25226	0,671145	0,249587	1									
Bio11	0,959274	0,480997	0,895263	-0,91494	0,594378	0,991916	-0,86423	0,2701	0,683784	0,661954	1								
Bio12	0,138143	-0,18168	-0,0435	-0,09797	-0,15957	0,088553	-0,19139	0,095006	-0,0792	0,099409	0,117732	1							
Bio13	0,456219	-0,04793	0,346486	-0,45428	0,028	0,447454	-0,51887	0,176522	0,171116	0,261896	0,468145	0,774924	1						
Bio14	-0,04313	-0,18983	-0,22646	0,093037	-0,20621	-0,09889	0,007208	0,025763	-0,16419	0,007419	-0,07148	0,876313	0,411921	1					
Bio15	0,381361	0,210476	0,60116	-0,53361	0,172701	0,48211	-0,48248	-0,01189	0,397592	0,10435	0,464307	-0,52806	0,066792	-0,78695	1				
Bio16	0,431965	-0,09003	0,292933	-0,40884	0,01804	0,411884	-0,48178	0,197929	0,135459	0,263312	0,433132	0,800864	0,99364	0,450504	0,014413	1			
Bio17	-0,04126	-0,18142	-0,22144	0,091552	-0,20627	-0,099	0,007303	0,011899	-0,1591	0,00739	-0,07056	0,899394	0,441523	0,992197	-0,78196	0,478113	1		
Bio18	0,239843	-0,16232	-0,09553	0,02291	0,058222	0,072933	-0,05574	0,425152	-0,24152	0,339995	0,127378	0,83093	0,696046	0,70967	-0,46991	0,726309	0,726306	1	
Bio19	0,161564	0,002271	0,294743	-0,43819	-0,25056	0,296391	-0,48828	-0,31009	0,327072	-0,13032	0,286563	0,715446	0,648627	0,579934	-0,14901	0,644086	0,59918	0,266229	1