

Supplementary Table S2: Predictor variables list, extracted from WorldClim and EarthEnv databases. Highlighted with an X are the variables selected through the Variance Inflation Factor (VIF) for each species. *P. clarkii* = *Procambarus clarkii*, *D. pagei* = *Dilocarcinus pagei*, *M. rosenbergii* = *Macrobrachium rosenbergii*, *M. jelskii* = *Macrobrachium jelskii*, *M. amazonicum* = *Macrobrachium amazonicum*. [double column]

Variable	Description	<i>M. rosenbergii</i>	<i>M. jelskii</i>	<i>M. amazonicum</i>	<i>P. clarkii</i>	<i>D. pagei</i>
Bio1	Annual Mean Temperature					
Bio2	Mean Diurnal Range				X	
Bio3	Isothermality		X			
Bio4	Temperature Seasonality			X		X
Bio5	Max Temperature of Warmest Month	X			X	
Bio6	Min Temperature of Coldest Month					
Bio7	Temperature Annual Range					
Bio8	Mean Temperature of Wettest Quarter				X	X
Bio9	Mean Temperature of Driest Quarter	X	X		X	
Bio10	Mean Temperature of Warmest Quarter					
Bio11	Mean Temperature of Coldest Quarter					
Bio12	Annual Precipitation					
Bio13	Precipitation of Wettest Month	X	X		X	
Bio14	Precipitation of Driest Month	X	X	X		
Bio15	Precipitation Seasonality			X		X
Bio16	Precipitation of Wettest Quarter					
Bio17	Precipitation of Driest Quarter					
Bio18	Precipitation of Warmest Quarter	X	X	X		X
Bio19	Precipitation of Coldest Quarter	X				

Variable	Description	<i>M. rosenbergii</i>	<i>M. jelskii</i>	<i>M. amazonicum</i>	<i>P. clarkii</i>	<i>D. pagei</i>
<i>EarthEnvi</i>						
Prec1	Sum of monthly precipitation January	X				
Prec2	Sum of monthly precipitation February			X	X	
Prec3	Sum of monthly precipitation March		X			
Prec4	Sum of monthly precipitation April	X			X	
Prec5	Sum of monthly precipitation May	X	X			
Prec6	Sum of monthly precipitation June					
Prec7	Sum of monthly precipitation July				X	
Prec8	Sum of monthly precipitation August					
Prec9	Sum of monthly precipitation September	X		X		X
Prec10	Sum of monthly precipitation October					X
Prec11	Sum of monthly precipitation November	X	X	X	X	X
Prec12	Sum of monthly precipitation December					
Hydro1	Annual Mean Temperature					
Hydro2	Mean Diurnal Range	X	X	X	X	
Hydro3	Isothermality					
Hydro4	Temperature Seasonality					
Hydro5	Max Temperature of Warmest Month					
Hydro6	Min Temperature of Coldest Month				X	
Hydro7	Temperature Annual Range					
Hydro8	Mean Temperature of Wettest Quarter		X	X		
Hydro9	Mean Temperature of Driest Quarter					
Hydro10	Mean Temperature of Warmest Quarter					
Hydro11	Mean Temperature of Coldest Quarter					
Hydro12	Annual Precipitation					

Variable	Description	<i>M. rosenbergii</i>	<i>M. jelskii</i>	<i>M. amazonicum</i>	<i>P. clarkii</i>	<i>D. pagei</i>
Hydro13	Precipitation of Wettest Month		X			
Hydro14	Precipitation of Driest Month	X	X	X		
Hydro15	Precipitation Seasonality					
Hydro16	Precipitation of Wettest Quarter					
Hydro17	Precipitation of Driest Quarter					
Hydro18	Precipitation of Warmest Quarter	X				
Hydro19	Precipitation of Coldest Quarter				X	
Elev1	Minimum elevation	X	X	X	X	
Elev2	Maximum elevation					
Elev3	Elevation range		X	X	X	
Elev4	Average Elevation					
Slope1	Minimum slope	X		X	X	X
Slope2	Maximum slope					
Slope3	Slope range	X				X
Slope4	Average slope	X			X	X
Flow1	Number of upstream stream grid cells					
Flow2	Number of upstream catchment grid cells					