



Supplement of

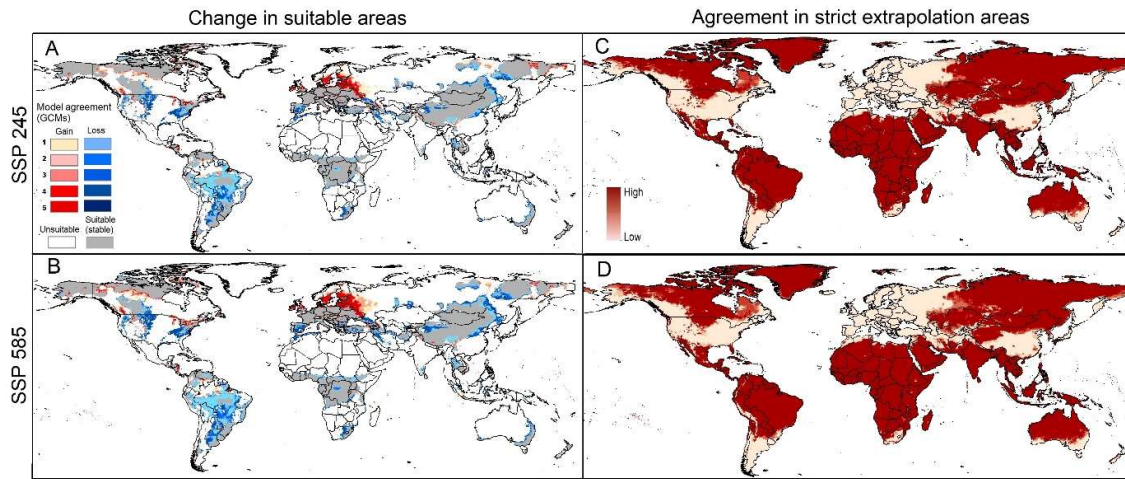
**Ecological niche and potential geographic distributions of
Dermacentor marginatus and *Dermacentor reticulatus* (Acari:
Ixodidae) under current and future climate conditions**

Abdelghafar Alkishe et al.

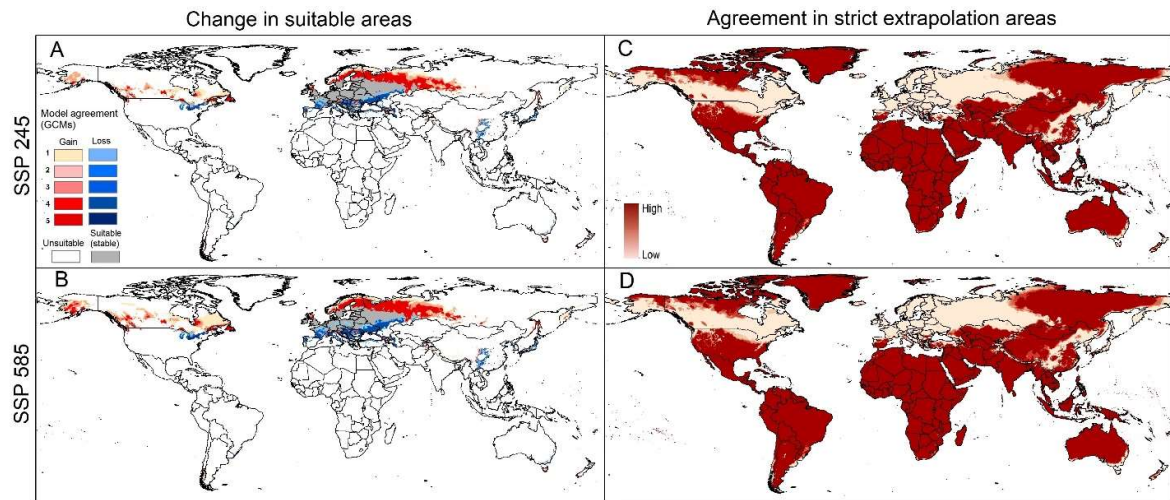
Correspondence to: Abdelghafar Alkishe (abduelkeesh8614@gmail.com)

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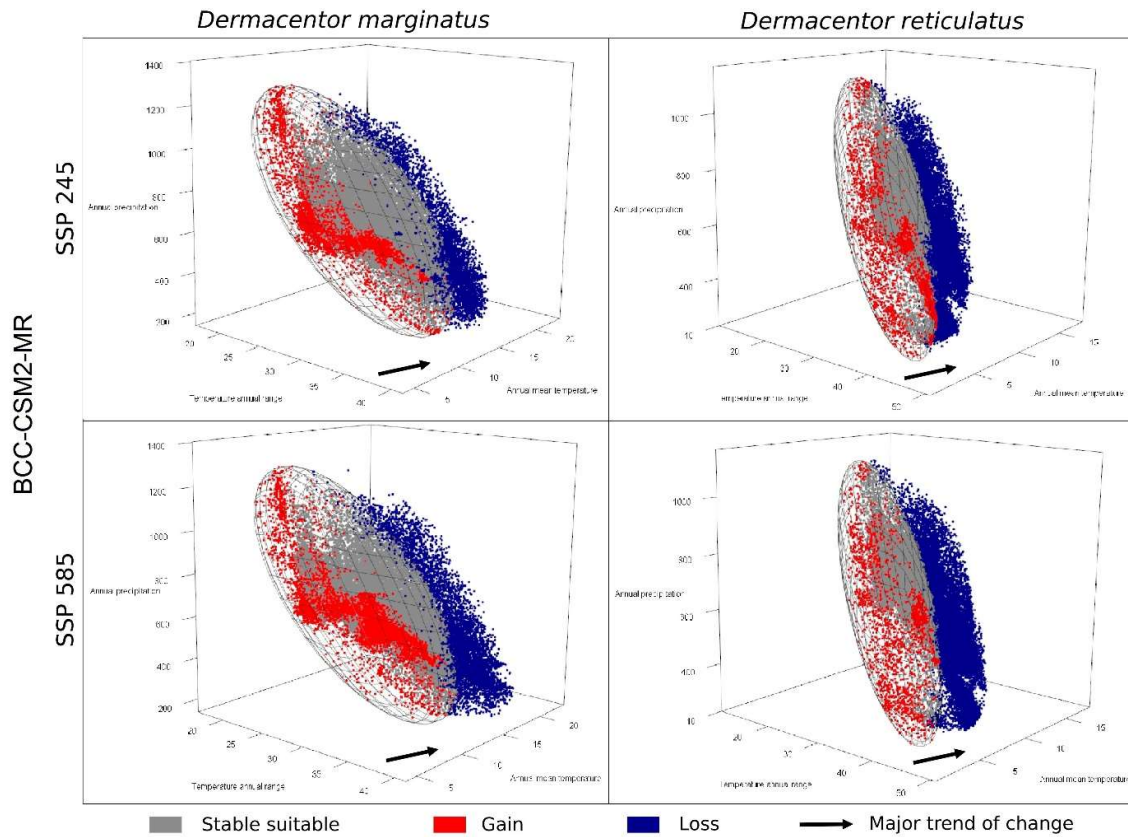
Supplementary material



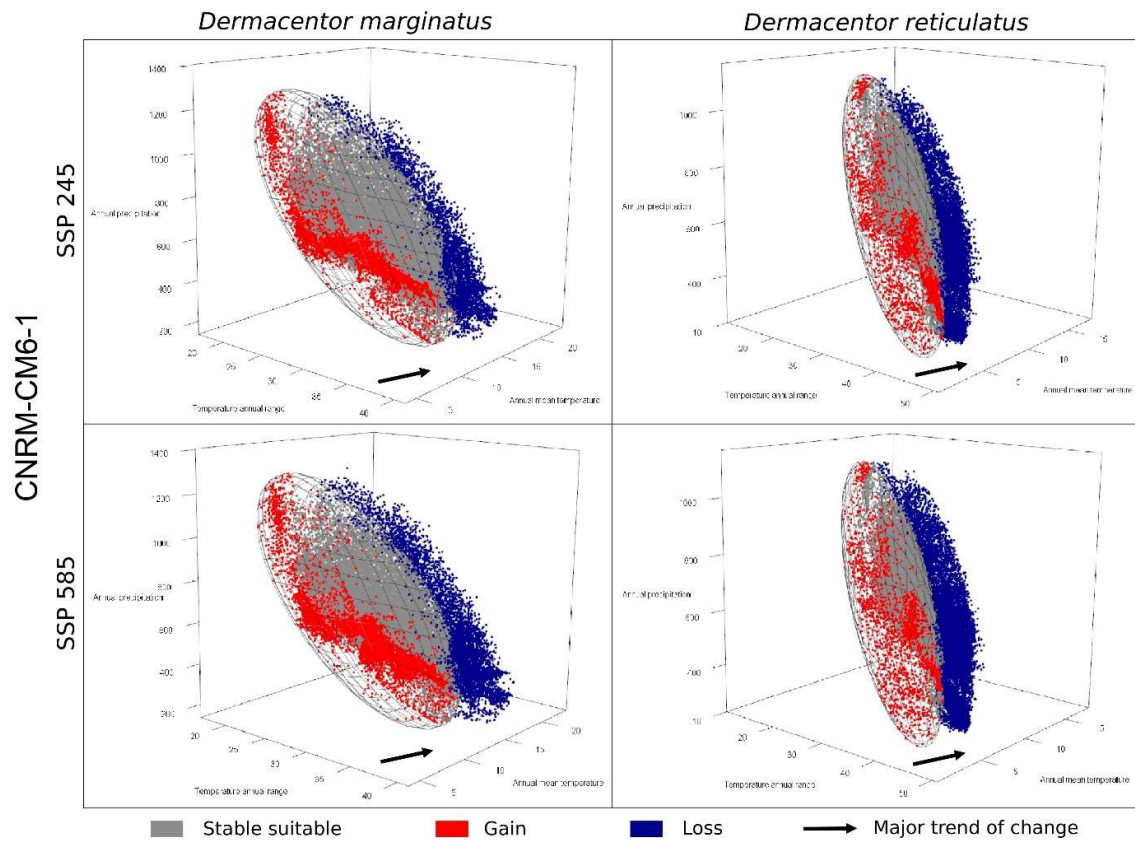
S 1. Transfer models for *Dermacentor marginatus* globally under current and future conditions showed broad suitable areas across Asia, South America, some parts in North America and South Africa, southeastern Australia (A, B). When we look at MOP analysis results for all world, strict extrapolation agreement was high all around the world except areas of that our model predicted as suitable for the species (C, D). However, Areas such as sub-Saharan countries, South America, northern Canada, and eastern Asia fill in the strict extrapolation areas which we must be cautious when with those areas as suitable areas for the species.



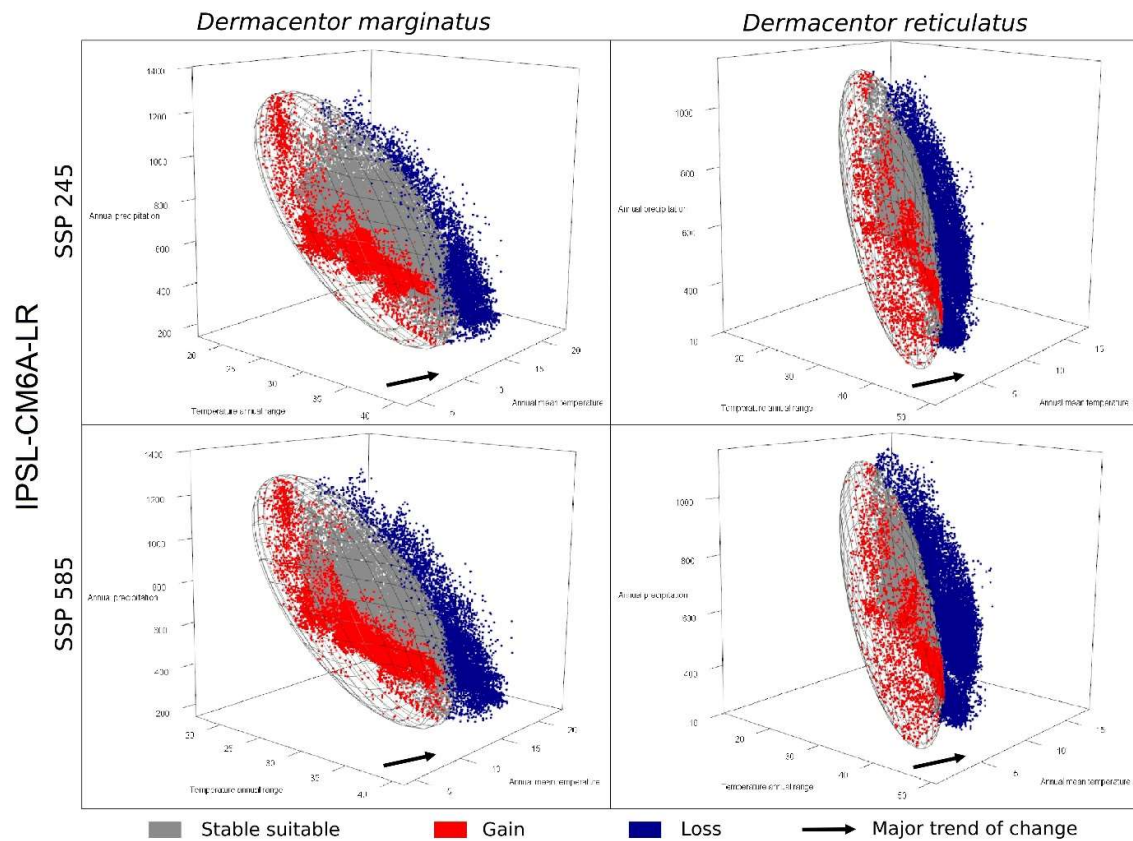
S 2. Transfer models for *Dermacentor reticulatus* globally under current and future conditions showed parts of northern United States, and western Canada have same potential suitable areas (A, B). MOP analysis results for all world, strict extrapolation agreement was high all around the world except areas that our model predicted as suitable for the species (C, D).



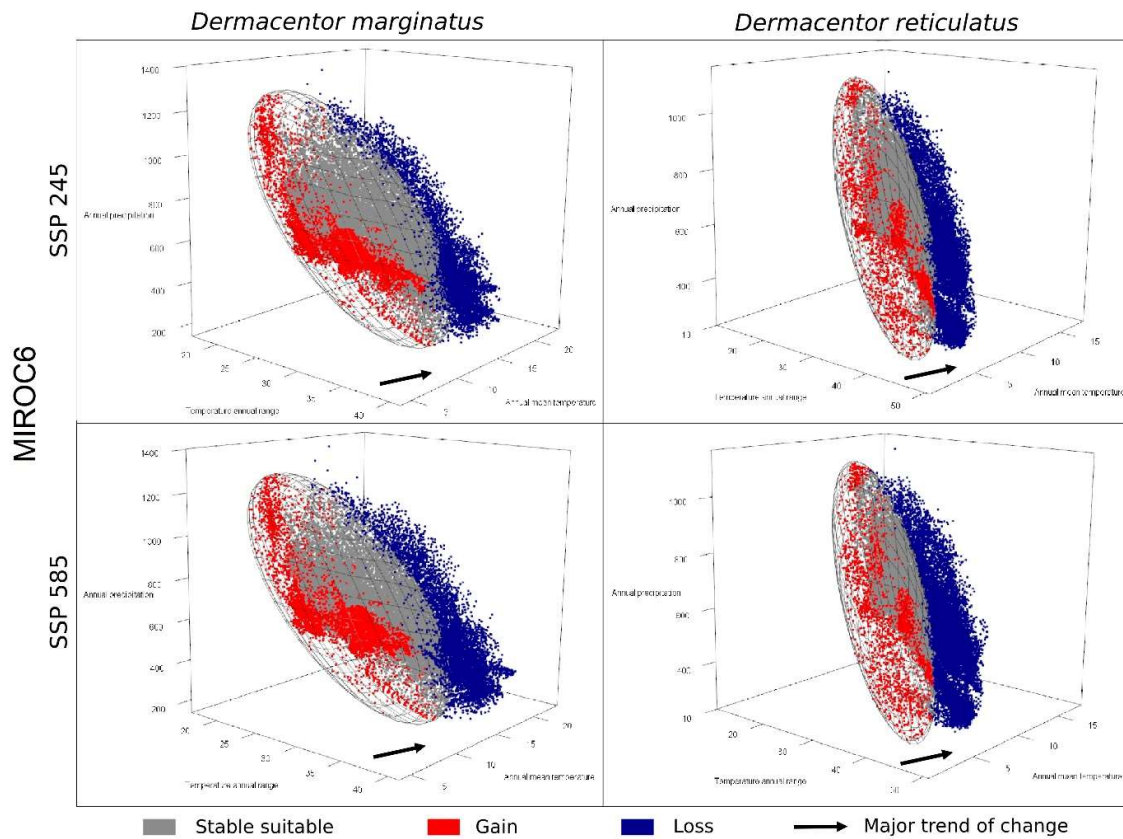
S 3. Change of environmental represented using ellipsoid ecological niches perspective for *Dermacentor marginatus* under the SSP 245 scenario. Blue indicates suitability loss; red indicates suitability gain; gray indicates stability.



S 4. Change of environmental represented using ellipsoid ecological niches perspective for *Dermacentor marginatus* under the SSP 585 scenario. Blue indicates suitability loss; red indicates suitability gain; gray indicates stability.



S 5. Change of environmental represented using ellipsoid ecological niches perspective for *Dermacentor reticulaus* under the SSP 245 scenario. Blue indicates suitability loss; red indicates suitability gain; gray indicates stability.



S 6. Change of environmental represented using ellipsoid ecological niches perspective for *Dermacentor reticulaus* under the SSP 585 scenario. Blue indicates suitability loss; red indicates suitability gain; gray indicates stability.