

Scorpion biodiversity

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Scorpions possess resistance to high temperatures and the ability to conserve water for long periods of time, and as a result thrive in hot and arid parts of the world. But is this global distribution also seen at a more local level? Reporting in the open-access, peer-reviewed journal *PLoS ONE* April 9, Doctoral student Shmuel Raz and colleagues at the University of Haifa, Israel now show that this is indeed the case, even when European-like and African-like habitats were separated by no more than 100 metres.

Shmuel Raz and colleagues studied the communities of [scorpions](#) in a valley near Mount Carmel in Israel which has been dubbed "Evolution Canyon." Evolution Canyon" has steep slopes and runs approximately east-west, which means that the south-facing slope receive up to eight times as much [solar radiation](#) as the north-facing slope . Thus, despite identical regional geology and rainfall, one slope, dubbed the "African" slope of the canyon is arid savannah-like while the other boasts a lush, maquis-like forest environment separated by a narrow canyon floor that could easily be crossed by most animals and certainly would provide no barrier to a scorpion.

The researchers collected nearly 200 specimens of six different species of scorpions in "Evolution Canyon." While four of the species were found on both slopes of the canyon, two were only seen on the more arid, "African"-like slope. Similarly the "European" slope of the canyon yielded nearly a third fewer scorpion specimens than the "African" slope . Despite the ease of movement between the two canyon faces, the particular adaptations of the scorpions to arid conditions have led to their

greater abundance on the south-facing, "African" slope.

Differences in the diversity of species between the north and south facing slopes of "Evolution Canyon" have been observed in other groups of bacteria, fungi, plants and animals and in combination with these, new studies on scorpions show that the environmental pressures brought about by factors such as the amount of sunshine, temperature and drought whether individually or in combination, can act very locally to produce global changes in biodiversity.

Citation: Raz S, Retzkin S, Pavlíček T, Hoffman A, Kimchi H, et al. (2009) Scorpion Biodiversity and Interslope Divergence at "Evolution Canyon", Lower Nahal Oren, Microsite, Mt. Carmel, Israel. [PLoS ONE](#) 4(4): e5214. doi:10.1371/journal.pone.0005214, [dx.plos.org/10.1371/journal.pone.0005214](https://doi.org/10.1371/journal.pone.0005214)

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