LOW BALLOONING PROPENSITY IN HABITAT SPECIALIST SPIDERS (ARANEAE) FROM GREY DUNES: RARE SPECIES WILL BECOME RARER IN A FRAGMENTED LANDSCAPE

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Aerial dispersal by ballooning is a passive flight, by which wind dragging generates an upward lift on a silk treat. It is likely to reflect an aerial lottery, in which the absence of flight direction control is a serious cost for long-distance dispersal in a fragmented landscape. For species, occurring in one patchily distributed habitat type, dispersal should evolve in a different way than morphological traits, linked to active dispersal. Especially in fragmented habitats, we expect positive selection for the performance of the ballooning dispersal if the individual benefits from the dispersal in terms of survival. Only if the risk of landing in an unsuitable habitat is lower than the probability in reaching a suitable habitat, selection should benefit a well-developed ballooning behaviour.

Our results indicate that ballooning performance is negatively related to habitat specialisation in spiders from patchy grey dunes and related to local distribution patterns. Deviations from this relationship can be attributed to other additional dispersal mechanisms and variation in life histories.