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### PERCEPTUAL RANGE IN A TROPICAL BUTTERFLY

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Human caused fragmentation induces changes in habitat structure and challenges organisms in search of suitable habitats. Perceptual range, a key component of dispersal process, has been investigated in a diverse set of organisms. Yet, data are lacking in tropical insects, a significant component of the biodiversity of tropical ecosystems. We here report field experiments with free flying and lab-raised butterflies to evaluate habitat perception in a model species, *Heliconius*. In one experiment, free-flying *H. erato* and *H. melpomene* were released in two matrix habitats close to their habitat patch, at distances between 0 (border) and 100 m. For each release, their chosen flight angle was recorded. In a subsequent experiment, lab-raised naïve *H. erato* were released in the same habitats, together with control, free-flying butterflies. Releases were made at 0, 30, and 100 m from the forest border. Release distance was a strong predictor of butterfly behavior in both experiments. Most individuals released up to 60 m from the border successfully oriented towards the habitat patch, while individuals released at 100 m oriented in a direction different than expected. This suggests that habitat perception is below 100 m for those species, which is within the habitat perception range for other invertebrates. The effect of distance was modulated by the matrix in both experiments, indicating that matrix type influences behavior of the butterflies. Nevertheless, these effects could only be seen at the 100 m treatment, and may have been of little difference given that butterflies were already outside their perceptual range. Naïve and experienced butterflies behaved similarly with regards to orientation, but there was a tendency for naïve butterflies to not orient properly in the planted crop matrix than in the open field. This suggests potential differences regarding experience and further studies are needed to elucidate this possibility.

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