

# Ecology of predator-prey interactions in the context of prey reproductive decisions

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Animals communicating in the context of mate searching benefit by obtaining mates, but also experience costs. Empirical work studying effects of predation on such communication has largely been addressed in an evolutionary context. How individuals trade-off risks and benefits of communication in an ecological context has, however, received much less attention. With this background, we aimed at understanding the ecology of predator-prey interactions in the context of mate searching communication, using the tree cricket *Oecanthus henryi* as a model system. We first estimated the relative predation risk experienced by

communicating and non-communicating, male and female crickets from their primary predators, green lynx spiders, at multiple spatial scales. Next, I manipulated predation risk in enclosure experiments and observed how it affects mate searching behaviour and survival, to compare their relative fitness consequences. Interestingly, we found that even though the predation risk experienced by male and female crickets is similar, there are sex differences in the behavioral management of risk, leading to differential fitness consequences. We also investigated how prey spatially manage predation risk at two different spatial scales when exhibiting different mate searching strategies. We find that mate searching states of crickets do not influence susceptibility at broad spatial scales but do affect movement strategies at fine scales. In the last part of the talk, I touch upon some of the work I have been doing since I joined as a postdoctoral fellow in EEB. We investigated how predation risk affects mate choice in deserts isopods and whether it consequently affects their offspring survival and quality.

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