



<b>WORKING PROJECT TITLE</b>	Determining the potential of the harlequin beetle <i>Harmonia axyridis</i> to respond to climate change
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<b>ACADEMIC LEVEL OF THE PROJECT</b>	Postdoc
<b>PROJECT BACKGROUND</b>	<p>Invasive insects are an increasing threat to native diversity but the question of how well they will perform in face of climate change remains unexplored. In particular, the knowledge of their adaptive evolutionary trait change in response to climate change is limited. This line of enquiry poses several known challenges, e.g. 1. Responses to climate change can include both evolutionary and plastic trait changes; 2. The (climate) drivers of selection can be multidimensional (temperature, water, photoperiod); 3. Multiple phenotypic traits shape the adaptive capacity of an individual.</p> <p>We have recently shown that <i>Harmonia axyridis</i>, a global invasive beetle, has limited evolutionary capacity given parameters of the thermal performance curve for walking speed but significant heritability estimates of temperature tolerance, albeit low (Logan et al. in press). Despite these interesting findings, these data only reflect one facet of performance and do not include adaptive</p>



	<p>responses in the wild. This project aims to use several experimental evolution methods to better account for some of the challenges listed above (1-3) and obtain a more comprehensive picture of the thermal adaptive capacity of <i>Harmonia axyridis</i>.</p>
<p><b>FURTHER READING</b></p>	<p>Roy H.E., Brown P.M.J., Adriaens T., Berkvens N., Borges I., Clusella-Trullas S., et al. 2016. The harlequin ladybird, <i>Harmonia axyridis</i>: An inspiration for global collaborations on invasion biology. <i>Biological Invasions</i> 18:997-1044.</p> <p>Logan M.L., Minnaar I.A., Keegan K.M., Clusella-Trullas S. The evolutionary potential of an insect invader under climate change. <i>Evolution In press</i></p> <p>Hoffmann A.A. &amp; C.M. Sgrò. 2011. Climate change and evolutionary adaptation. <i>Nature</i> 470: 479-485.</p>
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