



<p>WORKING PROJECT TITLE</p>	<p>Assessing rapid adaptation in the invasion of Madagascar by <i>Duttaphrynus melanostictus</i></p>
<p>CORE TEAM MEMBER</p>	<p>John Measey</p>
<p>ACADEMIC LEVEL OF THE PROJECT</p>	<p>PhD or Post-doc</p>
<p>PROJECT BACKGROUND</p>	<p>The Asian Spiny Toad, <i>Duttaphrynus melanostictus</i>, was first seen on Madagascar in 2010. Since then, the toad has spread to cover 550 km², with an estimated spread rate of 22 km.year⁻¹ (Licata <i>et al.</i> 2019). The results of this invasion are potentially disastrous for the large number of native predators naïve to bufo-toxins (Marshall <i>et al.</i> 2018). Efforts are now underway to counter and control the spread of this toad, but what has made it such a super invader?</p> <p>This PhD aims to compare populations of <i>D. melanostictus</i> in its native and invasive ranges (Vences <i>et al.</i> 2017) using a range of behavioral, performance and morphological measures (e.g. Vimercati <i>et al.</i> 2018).</p> <p>The successful applicant will need to be prepared to travel and work in demanding tropical conditions. They will have to work with an international team of academics and NGOs in Madagascar controlling the spread of the toad. Fieldwork will be in concentrated periods</p>



that will require resourcefulness and extreme dedication to the project.

FURTHER READING

Licata, F. et al. 2019. Abundance, distribution and spread of the invasive Asian toad *Duttaphrynus melanostictus* in eastern Madagascar. *Biological Invasions*, 21(5), 1615-1626.

Marshall, B.M. et al. 2018. Widespread vulnerability of Malagasy predators to the toxins of an introduced toad. *Current Biology*, 28(11), R654-R655

Vences, M. et al 2017. Tracing a toad invasion: lack of mitochondrial DNA variation, haplotype origins, and potential distribution of introduced *Duttaphrynus melanostictus* in Madagascar. *Amphibia-Reptilia*, 38(2),197-207

Vimercati, G. et al. 2018. Rapid adaptive response to a mediterranean environment reduces phenotypic mismatch in a recent amphibian invader. *Journal of Experimental Biology*, 221(9), jeb174797.

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