



Monitoring a Non-native Amphibian in Cambridge, UK

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In 2015 we were able to confirm the presence of a population of the non-native Common Midwife toad (*Alytes obstetricans*) in central Cambridge, UK. The population has persisted for at least a decade and we have developed a novel method to be able to locate the toads (1). The toads are currently restricted to the back gardens of a row or parallel Victorian-aged terraced houses (2). Their dispersal is limited due to the fact that the population is surrounded by walls and roads – isolating them unless somebody decides to move them. We've actively networked with the local community to be able to gain access to the gardens the toads inhabit, when the conditions are right to survey. This has led to a small level of community engagement which we hope to build on in future years. Since the early months of 2017, the project has grown with leaps and bounds with more residents allowing us access to their gardens to survey for midwife toads. This is something that we didn't expect!

As a non-native species it's not known what threats the species poses to our native amphibians, this is an area of research which needs to be explored more. Due to the nature of their vastly different life history it is unlikely they'll pose a problem in terms of competition with the local amphibian species. We've found them happily living and breeding (Fig. 1) alongside *Bufo bufo*, *Rana temporaria*, *Lissotriton helveticus* and *L. vulgaris*. The only threat we feel the midwife toads may pose to the native and naive amphibian populations is as a disease vector (3). Since 2016, we've been actively swabbing the midwife toads in an effort to screen them for

the amphibian chytrid fungus (*Batrachochytrium dendrobatidis*). Preventing the spread of disease to native species may be impossible as *A. obstetricans* are the most numerous amphibian species within the study area. This may be due to the fact that they are able to exploit the opportunities better and due to their cryptic nature are less likely to be predated on by cats or other predators.

One of the main aims of the project is to develop a baseline population estimate of *A. obstetricans* as we are currently unaware as to how big the population is, although our current estimates are between 50-100 sexually mature individuals. The initial method of introduction or the size of the founding population is still not known and is another area we wish to investigate further once we've screened more individuals. So far from a limited number of samples we've had analysed the results have been negative for *B. dendrobatidis*. This is encouraging news but a larger sample size is needed to be sure that the toads are not acting as a vector of disease. We'd like to thank the Amphibian and Reptile Groups UK for supporting the analysis of the initial batch through the 100% Fund.

We've also been working to collect morphometric data on the midwife toads to gain a better understanding of their population dynamics. Each individual encountered has also been photographed in order to create a reference database of the population. This method has been used before to re-identify *Alytes* tadpoles (4) and it's hoped we will be able to use this method to count repeat encounters, therefore creating a more accurate prediction of the population size. For the first time this season we were able to identify one



Fig. 1: Common Midwife toad (*Alytes obstetricans*). Photo: Steven J. R. Allain.

of breeding ponds and locate Midwife toad tadpoles of differing age classes (Fig. 2). We plan to swab the tadpoles in the coming months as it's likely now that they will overwinter in the pond.

Another risk the Midwife toads may pose is as a vector of *Ranavirus* (5), although the mass die-offs usually associated with the disease (as well as chytridiomycosis) have not yet been observed. If such die-offs are observed, then samples will be collected for further analysis although at this moment in time it is not a high priority. This is partly down to the fact that we are lacking funds, especially for additional levels of analysis, and there is a lack of evidence for the disease being present. We are hopeful that the toads will be free from chytrid as well but as their origins are not known, they are being screened as a safety precaution.



Fig 2: Midwife toad tadpoles. Photo: Steven J. R. Allain.

We successfully crowdfunded the funded needed to sustain the project as it is being increasingly difficult to find grants that are willing to support such a project. This may be due to the uncertain and uneasy global political and economic climate we are currently experiencing, or it may just be bad timing on our part. Our target was \$1500 but we successfully raised \$1706. We'd like to thank all of our backers for their support in this project. With the success of our crowdfunding campaign, all of the samples taken from this year have been sent to the lab for analysis and we are currently awaiting the results.

Keep an eye out for future updates as the project is only just getting started—it has evolved so much over the past two years and may continue to do so.

References

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