

The effects of lead pollution on vigilance in house sparrows



About the project

Supervised by: Prof Simon Griffith (Macquarie University, Sydney); Prof Hannah Dugdale (BPE), Janet Chik (PhD student, BPE)

Start date: As early as possible

Urbanization is a serious threat to wildlife survival and biodiversity, and how wildlife adapts to co-habiting with humans remains a pressing question in ecology and conservation (McDonnell & Hahs, 2015). One important research topic is the effects of heavy metal pollution, which impacts the physiology, neurology, and behaviour of urban animals (Rocha & Trujillo, 2019), and can therefore hinder their adaptation.

In this joint, desk-based project with Macquarie University, we are interested in examining how lead (Pb) pollution affects vigilance (Merrall & Evans, 2020), which is key to avoiding predators, using a captive population of house sparrows (*Passer domesticus*). We conducted a dosing study in June-July 2023, and collect video data of individual birds. From this video collection the master student will quantify vigilance, and look at questions such as if Pb pollution influences vigilance behaviours. The student will gain skills on using ethological software, statistical analyses, and cultivate international collaboration experience. There is also opportunity to publish.

References:

- McDonnell, M. J., & Hahs, A. K. (2015). <https://doi.org/10.1146/annurev-ecolsys-112414-054258>
Merrall, E. S., & Evans, K. L. (2020). <https://doi.org/10.1111/jav.02341>
Rocha, A., & Trujillo, K. A. (2019). <https://doi.org/10.1016/j.neuro.2019.02.021>

About the student

We are looking for a master student who:

- Is enthusiastic about animal behaviour research, neurotoxicology and urban ecology
- Wishes to gain experience in captive studies and ethological analysis
- Preferably has experience in statistical analyses with R (training is provided)
- Preferably has prior experience in behaviour analysis software e.g. BORIS (training is provided)
- Is self-motivated, organized and has good data management habits

Interested students should contact Janet Chik (h.y.i.chik@rug.nl).



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