

# **The Impact of Various Predator Perceptions on Stress Response and Spatial Memory in Birds**

## **Background**

This project will explore the impact of environmental stressors on the cognitive abilities of birds. Predator perception has been demonstrated to elicit a stress response by elevating stress hormones which can alter the behaviour of birds. The aim of this study is to observe if chronic stress from differently perceived threats of predation in an individual's environment will lead to differences in the spatial memory abilities in two species of birds. I predict that chronic stress resulting from predator stimuli will impair the bird's performance on the memory task.

## **Methods**

The subjects will be chronically exposed to three separate predator related stimuli. Blood samples will be taken before and after exposure. The subjects will then be tested on a measure of spatial memory.

## **Results**

The current study is a preliminary project proposal and does not have results.

## **Discussion and Conclusion**

This project is the first to examine different sensory modalities of predator stimuli, and how the chronic stress from the predator stimuli affects spatial memory in birds. This will elucidate how birds perceive their predators, and if chronic stress from predators is detrimental to their survival. There are strong implications for humans, especially those with anxiety disorders, if there is a link between chronic stress and memory.

## **Interdisciplinary Reflection**

This project will integrate fear paradigms from a biological and environmental perspective and assess the consequences of the resulting chronic stress on memory capabilities using an avian model. This study also aims to expand our knowledge in the fields of cognitive neuroscience, ornithology, and endocrinology.