

Recent studies on the mental health benefits of birdlife



1. Effects of nature experience on mental well-being and physiological stress parameters in an experimental bird walk setting – the role of bird song :

Vanhoefen et al, *Landscape & Urban Planning* 2025

Abstract

Recreational nature experience in cities is an accessible way for people to receive benefits for their physical and mental health. Recreational walking, for example, is a popular way of stress relief. Further, birdsong has been found to improve well-being. The following study aims to determine if an unguided bird walk through a controlled environment positively affects mental well-being, physiological stress markers and subjective nature experience. For this, an experimental design was developed, with two manipulations being 1) enhanced bird song vs. natural song, 2) raised awareness for bird song vs. no raised awareness, in a 2x2 factorial design, with additional noise-cancelling headphones as control. In a pre-post-test design, measurements of saliva cortisol levels, blood pressure and heart rate were employed to assess physiological stress markers. The unguided bird walk generally positively affects well-being and physiological stress parameters. Physiological stress parameters decreased, and positive emotions increased after a bird walk in a controlled park environment. Playing additional bird songs as playback did not lead to enhanced mental well-being or nature experience compared to natural songs. However, raising awareness about the natural bird song led to a higher nature experience than not raising awareness about the bird song. The results suggest that nature experience plays a significant role in mental wellbeing. In our analysis, nature experience itself is connected to increased awareness of the environment and also to a positive perception of birds as a trait variable. We conclude that a positive personal nature experience is important to promote mental well-being after an unguided nature or bird walk and is additionally enhanced by verbal awareness cues.

2. Psychological restoration depends on curiosity, motivation, and species richness during a guided bird walk in a suburban blue space: Randler et al, *Frontiers in Psychology* 2025

Abstract

Urban and suburban green and blue spaces are important places for human recreation, and the impact of biodiversity on psychological and recalled restoration has received much attention. This study addresses the relationship between bird species richness and restoration in a controlled field experiment (guided bird walk) applying a battery of individual trait scales (need for cognition, personality) as predictors of restoration. We found a significant positive relationship between the number of bird species present and recalled restoration. Personality, bird species knowledge, bird related interest as test measures, demographics and birding specialization as self-report had no influence on psychological restoration. However, need for cognition correlated positively with psychological restoration, thus providing a new predictive variable. All subscales of the intrinsic motivation scale (enjoyment, perceived competence, perceived choice, pressure/tension) were positively correlated with restoration except of pressure/tension. Learning emotions like interest and well-being were positively related to restoration, while boredom was negatively related. Therefore, we suggest research to examine the restorative function of more cognitive-oriented programs because people may also need cognition when it comes to restoration. We also suggest a broader focus on education and cognitive aspects when it comes to linking biodiversity and health within the framework of ecosystem services.

3. Exploring the relationship between bird diversity and anxiety and mood disorder hospitalisation rates: RT Buxton et al, *Geography and Environment* 2023

<https://rgs-ibg.onlinelibrary.wiley.com/doi/pdf/10.1002/geo2.127>

Abstract

Natural environments provide a myriad of health benefits, yet the role of species diversity within these spaces remains underexplored. Bird diversity may yield mental health benefits for humans, through birdsong or feelings of connection to nature. In an initial effort to establish whether bird diversity may be linked with human health in a US context and to test the consistency in such trends from year to year, we combine widely available community (aka citizen) science data (eBird) estimating bird diversity across the state of Michigan with anxiety/mood disorder hospitalisation records (2008–18). We found a negative, significant association between bird species diversity and anxiety/mood disorder hospitalisations ($\beta = -0.36$, 95% CI = -0.69 to -0.04). The relationship between bird diversity and hospitalisations found at this scale is significant, given the potential for biodiversity to affect severe mental health outcomes. Thus, these initial findings should be further explored in studies with finer resolution of exposure to bird species and longitudinal or

experimental designs that account for other demographic characteristics, risk factors and other neighbourhood features. If future studies confirm these findings, there are important implications for urban greening efforts, some of which are explicitly focused on increasing bird habitat.

4. Birdsongs alleviate anxiety and paranoia in healthy participants: E Stobbe, J Sundermann, L Ascone, S Kühn, *Scientific Reports* 2022

<https://pmc.ncbi.nlm.nih.gov/articles/PMC9561536/>

Abstract

The present study investigated the effect of urban (traffic noise) vs. natural (birdsongs) soundscapes on mood, state paranoia, and cognitive performance, hypothesizing that birdsongs lead to significant improvements in these outcomes. An additional goal was to explore the differential impact of lower vs. higher diversity of the soundscapes by manipulating the number of different typical traffic sounds or songs of different bird species within the respective soundscapes. In a randomized online experiment, N = 295 participants were exposed to one out of four conditions for 6 min: traffic noise low, traffic noise high, birdsong low, and birdsong high diversity soundscapes. Before and after the exposure, participants performed a digit-span and dual n-back task, and filled out depression, anxiety, and paranoia questionnaires. The traffic noise soundscapes were associated with a significant increase in depression (small effect size in low, medium effect size in high diversity condition). Concerning the birdsong conditions, depression exclusively decreased after exposure to the high diversity soundscape (small effect size). Anxiety and paranoia significantly decreased in both birdsong conditions (medium effect sizes). For cognition, no effects were observed. In sum, the present study suggests that listening to birdsongs regardless of diversity improves anxiety, while traffic noise, also regardless of diversity, is related to higher depressiveness. Moreover, for the first time, beneficial, medium-sized effects of birdsong soundscapes were demonstrated, reducing paranoia. Overall, the results bear interesting implications for further research, such as actively manipulating soundscapes in different environments or settings (e.g., psychiatric wards) and testing their effect on subclinical or even clinical manifestations of anxiety and paranoia.

5. Smartphone-based ecological momentary assessment reveals mental health benefits of birdlife: R Hammoud et al, Kings College London 2022

<https://pubmed.ncbi.nlm.nih.gov/36302928/>

Abstract

The mental health benefits of everyday encounters with birdlife for mental health are poorly understood. Previous studies have typically relied on retrospective questionnaires or artificial set-ups with little ecological validity. In the present study, we used the Urban Mind smartphone application to examine the impact of seeing or hearing birds on self-reported mental wellbeing in real-life contexts. A sample of 1292 participants completed a total of 26,856 ecological momentary assessments between April 2018 and October 2021. Everyday encounters with birdlife were associated with time-lasting improvements in mental wellbeing. These improvements were evident not only in healthy people but also in those with a diagnosis of depression, the most common mental illness across the world. These findings have potential implications for both environmental and wildlife protection and mental healthcare policies. Specific measures, aimed at preserving and increasing everyday encounters with birdlife in urban areas, should be implemented.