CLEVER CITY LONDON

EXPLORING THE MONITORING AND ASSESSMENT OF URBAN BIODIVERSITY

Thamesmead is a town in South-East London with a population of 47,000 people. Its rich landscape includes 240 ha of parks and green space; 7km of canals; five lakes; 2.5km of river frontage and 53,000 trees. Peabody, one of the oldest not-for-profit housing associations in the UK, is leading the long-term regeneration of this area.

At Thamesmead, the CLEVER Cities programme is supporting community outreach and engagement to regenerate the estate by using nature as inspiration. Focusing on nature-based solutions carried out across the site, various forms of technology were trialled to help assess the impact of these improvements for biodiversity. Monitoring the impact of nature-based solutions in an urban environment, for biodiversity, is often not considered for many projects. The time and expense of a regular ecological monitoring programme is often a barrier, but apathy towards observation and collecting useful data is also an issue. To address this at Thamesmead, RSK Wilding are working with CLEVER Cities to test the latest technology to study biodiversity, its effectiveness in urban environments, and how they can be implemented in a low-cost and efficient manner that works for, excites, and encourages community engagement.

WHAT WE ARE DOING

RSK Wilding are undertaking a wide range of on-the-ground monitoring and desk-based research to explore approaches to the assessment and monitoring of urban biodiversity, including:

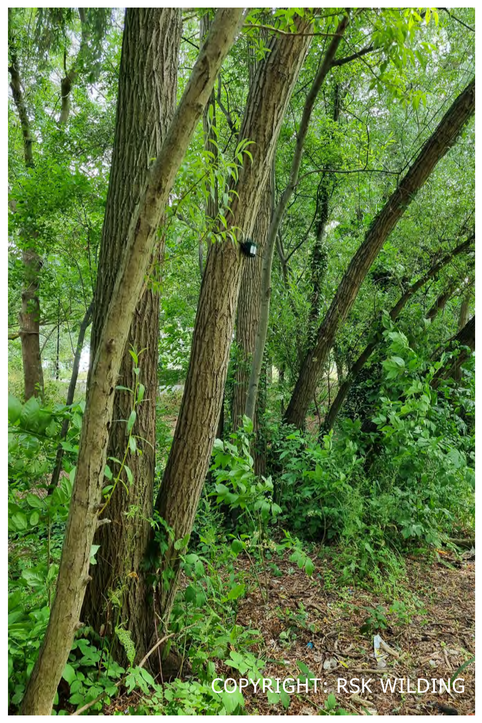
- **Habitats** - In England, the Department for Environment Food & Rural Affairs (DEFRA) developed the Biodiversity Metric to support the delivery of Biodiversity Net Gain (BNG), which has allowed for the consistent assessment of habitat value. However, this approach relies on a natural and semi-natural classification system called UK Habs (https://ukhab.org/), which potentially undervalues habitats found in urban environments. RSK Wilding have been undertaking a detailed comparison of the Biodiversity Net Gain Metric and other metrics that could be used in the assessment of urban habitats, including the Urban Greening Factor, which is found in the London Plan, the city's spatial development strategy.

- **Invertebrates** – Invertebrates are ideal indicators of biodiversity and the ecological status of a site. Historically, species identification has been a painstaking and highly specialised process, but at Thamesmead we are using metabarcoding - the latest in DNA analysis methods - to allow the rapid assessment of the species present.

- **Vocalising species** – In recent years acoustic monitoring has become increasingly effective while costs have rapidly decreased. Low-cost acoustic devices, AudioMoths, are being used to monitor a variety of vocalising species - focusing on bats and birds - supported by the use of a range of automated analysis processes to enable species identifications.

- **Monitoring approaches** – Beyond those methods being implemented in the field, RSK Wilding are undertaking a detailed review of available biodiversity monitoring methods, considering the latest in available technologies, cost effectiveness, scalability and opportunities for community engagement and 'citizen science'.

- **Community engagement** – throughout the project, the local community has been engaged through Nature Forum events, with opportunities to attend guided bird, bat and invertebrate walks and learning sessions on AudioMoth detectors.



LONG-TERM AIMS

The work being undertaken at Thamesmead should help support the development of broader guidance on the monitoring of urban biodiversity across London. This includes a toolbox of low-cost and efficient monitoring options that are accessible to local communities and land managers which can be used alongside key performance indicators to assess the impact of their ecological interventions. It is hoped that these resources will encourage more engagement with our urban green spaces and offer a consistent and effective means of understanding our urban biodiversity.

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