Food and Footprint

Environment Team Case Study

Measuring restored pollinator habitats as part of landscape level restoration.

Scottish Wildlife Trust

scottishwildlifetrust.org.uk

For 60 years, the Scottish Wildlife Trust (the Trust) has collaborated with members, partners, and supporters in pursuit of a vision of healthy, resilient ecosystems across Scotland's land and seas.

The Trust successfully champions the cause of wildlife through policy and campaigning work, demonstrates best practice through practical conservation and innovative partnerships, and inspires people to take positive action through its education and engagement activities.

The challenge

The Ayrshire Nectar Network is a flagship initiative project led by the Scottish Wildlife Trust to create and connect nectar and pollen-rich habitats in North Ayrshire and South Ayrshire. Both councils and other landowners wanted to plant and manage more spaces with vibrant flower-rich habitats and trees to establish pollinator highways to boost pollinator networks.

Recognising the importance of monitoring to determine the success of the project, the Trust worked with SAC Consulting to establish an effective long-term monitoring scheme. Monitoring at a landscape scale can be both tricky and costly, so the method had not only to be robust and clear to follow but also affordable to implement.

Our solutions

We co-designed a monitoring scheme with the Scottish Wildlife Trust that innovatively combines citizen science and professional surveys to provide a cost-effective way to monitor pollinators at the landscape scale.

The monitoring framework draws on recent advances in experimental design to enable us to detect true changes in populations, helping us to answer the following questions:

1. Are changes in pollinators observed in the new meadows due to the rich resources boosting populations (population response) or are they due to the meadows drawing pollinators from adjacent natural habitats (foraging response).

2. If positive trends in pollinators are observed within the Nectar Network, are these due to meadow creation enhancing pollinators, or are they simply due to two or three good pollinator years in a row.

To disentangle these effects, the monitoring framework focusses on surveying amenity grassland, meadows, and adjacent semi-natural habitats.

Additionally, to get a better grasp of annual variation in pollinators (i.e. good or bad year), it also surveys semi-natural habitats in locations not impacted by the Nectar Network.

Citizen science surveys have proven a cost-effective way to collect pollinator data across the season (May - September). To date, the volunteers have conducted 185 surveys, identifying 196 butterflies and 1,427 bumblebees. These surveys have helped us explore how the pollinator meadows are performing throughout the season and highlighted that the meadows are particularly valuable at providing late season floral resources. As part of this project, SAC Consulting presents the survey results back to citizen scientists, helping the Trust to retain and grow their group of volunteers.

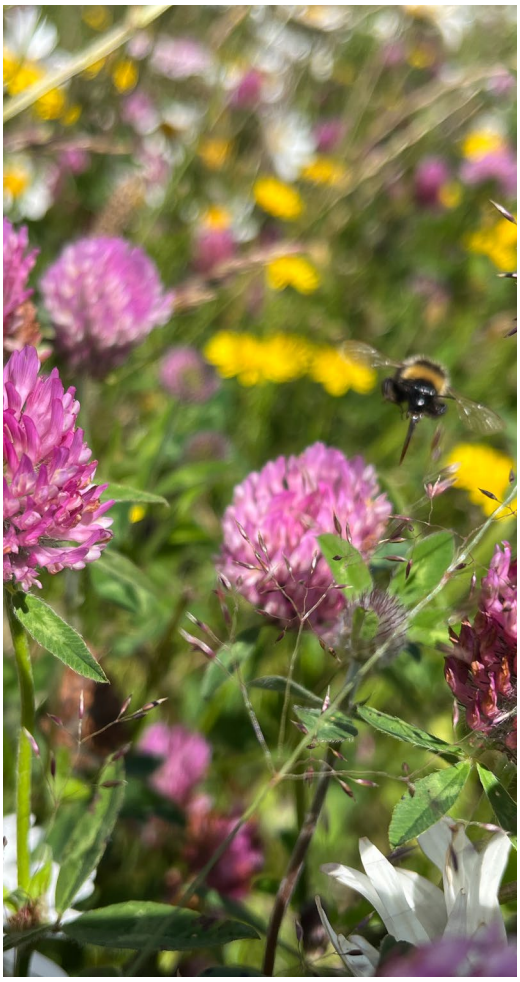
Our professional survey results provide depth and robustness, allowing us to look at a wider range of habitats and explore trends in species that are challenging to identify, such as solitary bees and hoverflies. The results indicate that the new meadows outperform semi-natural habitats for bumblebees and hoverflies. However, they are not so good for butterflies yet - likely reflecting a lack of caterpillar food plants within the area.

Added value

SAC Consulting developed a robust (yet cost-effective) landscape scale monitoring regime for insect pollinators. Our ecology team was able to draw on recent innovations in experimental design to ensure that this monitoring regime will provide accurate information on pollinator trends to demonstrate the impact of the Nectar Network.

Additionally, without our expertise the monitoring process could not have included pollinators that are notoriously difficult to identify (and consequently often overlooked). Our data analysts formatted, summarised, and analysed the data, presenting this back to the volunteers and the Scottish Wildlife Trust.

To ensure the methodology is freely accessible to support other landscape scale pollinator initiatives and groups, a practitioner's guide on 'How to establish landscape scale monitoring regimes for pollinators' was produced. Through this work, the Trust have helped South Ayrshire and North Ayrshire Councils to demonstrate their commitment to creating Nature Networks (in this case a Nectar Network) across local authority areas, in turn, supporting the Scottish Government to realise its nature-based ambitions.



Our customer says

"The Scottish Wildlife Trust's core values are about being collaborative, evidence based and pioneering – these are the three things that SAC Consulting brought to this project. This work exemplifies all three elements, focusing on transformative change – creating effective actions and making a meaningful impact."

Lynne Bates,
Nectar Network Coordinator, Scottish Wildlife Trust