Safeguarding Pollinators: UKCEH's 25-Year Legacy of Innovation and Impact

For the past 25 years, the UK Centre for Ecology & Hydrology (UKCEH) has been a global leader in pollinator research and conservation. Recognising the essential role of pollinators in food production and ecosystem health, UKCEH has pioneered scientific innovation, citizen science, and policy engagement to safeguard species such as butterflies, bees, hoverflies, and moths.

Central to this work are two major initiatives: the UK Butterfly Monitoring Scheme (UKBMS), celebrating its 50th anniversary in 2025, and the UK Pollinator Monitoring Scheme (PoMS), launched in 2017. PoMS is the world's first national programme to systematically track pollinator abundance across multiple groups. Both schemes rely on citizen science methods—transect walks, Flower-Insect Timed Counts, and 1-km pan-trap surveys—mobilising thousands of volunteers and generating robust datasets that inform biodiversity indicators and conservation strategies.

UKCEH collaborates with the Biological Records Centre and national recording schemes such as Butterflies for the New Millennium, the Bees, Wasps and Ants Recording Society, the Hoverfly Recording Scheme, and the National Macro-moth Recording Scheme. These long-term records have revealed critical trends in pollinator distributions and shaped targeted conservation responses.

Technological innovation is a hallmark of UKCEH's approach. The Automated Monitoring of Insects (AMI) system, now deployed in over 30 countries, uses high-resolution cameras and artificial intelligence to detect and classify insect species in real time. UKCEH has also developed mobile apps like FIT Count, ButterflyCount, and e-Surveyor, which have transformed citizen science by integrating public engagement with ecological monitoring and raising awareness of pollinator declines.

UKCEH's applied research has explored the impacts of land-use change, pesticide exposure, and climate variability on pollinator health. UKCEH findings have influenced agri-environmental schemes in the UK, such as hedgerow management, and contributed to EU-wide understanding of neonicotinoid effects on bees.

On a European scale, UKCEH coordinates a network of Butterfly Monitoring Schemes, supporting data collection for the EU Nature Restoration Regulation and the Grassland Butterfly Species Indicator. UKCEH scientists have played key roles in shaping policy, contributing to the UK Government's inquiry on Insect Decline and Food Security, authoring the IPBES global assessment on pollinators (2016), and participating in the UN's CBD COP16 conference.

Looking ahead, UKCEH continues to push boundaries in pollinator ecology, applying advanced modelling, molecular techniques, and AI-driven tools to predict future trends and evaluate conservation outcomes. UKCEH work increasingly links pollinator changes to broader biodiversity shifts, reinforcing the interconnectedness of ecosystems.

Through rigorous science, strategic partnerships, and cutting-edge technology, UKCEH is ensuring that pollinators—and the ecosystems they support—are protected for generations to come.

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