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Insect Pollinators Initiative

Insects including honeybees, bumblebees, butterflies and moths are vital for the pollination of many cultivated and wild plants. They play a crucial role in the production of agricultural crops such as oilseed rape, raspberries and tomatoes as well as pollinating horticultural plants. Having a healthy population of pollinators is also essential to maintain biodiversity in natural ecosystems. Pollinating insects are vulnerable to pests, diseases and environmental change - threats that have increased over the last five to ten years. The steady decline of these insects over recent years raises significant concern about our ability to feed a growing population set to reach 9 billion by 2050.

The Insect Pollinators Initiative is a fund of up to £10M that supports projects aimed at researching the causes and consequences of threats to insect pollinators and to inform the development of appropriate mitigation strategies. It is a joint initiative from the Biotechnology and Biological Sciences Research Council, the Department for Environment, Food and Rural Affairs, the Natural Environment Research Council, the Scottish Government and the Wellcome Trust, and is funded under the auspices of the Living With Environmental Change programme. Each of the partners has a different mission and remit but all share a common agreement that there is an urgent need for innovative research to provide a solid evidence base with which to inform new policies and approaches to reverse the decline in pollinator insects. Researchers funded under the initiative will engage early with farmers, growers, agri-food industry and other organisations with an interest in insect pollinators to ensure a strong network to apply the outcomes of research.

It is clear at present that there is no single factor causing the problem. The causes of pollinator declines are likely to be complex and involve interactions between pollinators, the environment and the pests and diseases that affect these insects. Because of the vital role pollinating insects play – insects pollinate at least one third of the range of agricultural crops grown globally¹ – it is absolutely crucial that we generate knowledge that can be applied to strategies aimed at reversing the decline. Some factors may affect all pollinating insects, others only one or two species and it will be important to see this group of species as a whole.

With such a complex problem, multidisciplinary and systems-based approaches will play a key role. The diverse nature of the funding partners helps to bring together top UK researchers across a range of disciplines and brings in new skills, such as high-throughput genetic sequencing and the latest techniques in epidemiological and ecological modelling, alongside existing expertise in the pollinator research community.

¹ www.fao.org/biodiversity/ecosystems/bio-pollinators

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Projects funded under the initiative:

- **Sustainable pollination services for UK crops**
Dr Koos Biesmeijer, University of Leeds
- **Modelling systems for managing bee disease: the epidemiology of European foulbrood**
Dr Giles Budge, Food & Environment Research Agency
- **Investigating the impact of habitat structure on queen and worker bumblebees in the field**
Dr Claire Carvell, NERC Centre for Ecology and Hydrology
- **An investigation into the synergistic impact of sublethal exposure to industrial chemicals on the learning capacity and performance of bees**
Dr Chris Connolly, University of Dundee
- **Linking agriculture and land use change to pollinator populations**
Professor Bill Kunin, University of Leeds
- **Urban pollinators: their ecology and conservation**
Professor Jane Memmott, University of Bristol
- **Impact and mitigation of emergent diseases on major UK insect pollinators**
Dr Robert Paxton, Queen's University of Belfast
- **Unravelling the impact of the mite *Varroa destructor* on the interaction between the honeybee and its viruses**
Dr Eugene Ryabov, University of Warwick
- **Can bees meet their nutritional needs in the current UK landscape?**
Dr Geraldine Wright, Newcastle University

For more information please see: www.bbsrc.ac.uk/pollinators