**PROJECT TITLE:** The effectiveness of conservation interventions in supporting migrating birds during stopover

**Project Science Theme:** Science for Environmental Solutions
**Project keywords:** Bird, conservation, migration, remote sensing

**Lead Institution:** University Bristol
**Lead Supervisor:** Dr Fengyi Guo, Bristol, School of Biological Sciences
**Co-Supervisor:** Andy Radford, Bristol, School of Biological Sciences
**Co-Supervisor:** Timothy Darlington, Met Office
**Co-Supervisor:** Tommaso Jucker, Bristol, School of Biological Sciences
**Co-Supervisor:** Adriaan Dokter, Cornell University, Cornell Lab of Ornithology

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**Project description:**
Many UK bird populations continue to decline, driven largely by habitat loss and agricultural intensification. While the effectiveness of conservation interventions such as protected areas and agri-environmental schemes has been well studied for breeding birds, their value to migrating birds during stopover remains poorly understood. Recent advances in radar remote sensing provide exciting opportunities for broad-scale monitoring of bird habitat use and population change during migration, addressing a critical knowledge gap for migratory bird conservation.

This project integrates data from weather-surveillance radar, LiDAR-derived habitat structure, and potentially targeted fieldwork to assess long-term impacts of conservation interventions on migrating bird communities across the UK.

Guided by the supervisors, the student will lead site-selection and determine the methodological balance based on their interests. Potential study questions include:
1. What are the long-term impacts of agri-environmental schemes on migrating birds?
2. How effective are protected areas in sustaining migrating birds during stopover?
3. What habitat features best benefit bird communities during stopover?

Training:
The student will receive hands-on training in radar aeroecology, remote sensing, and statistical modelling from the Bristol supervisory team of conservation biologists and ornithologists, alongside meteorological training from the Met Office collaborators. The student will be encouraged to attend relevant workshops such as the Ecology of Animal Migration and the Radar Aeroecology workshops. The student will also be supported to present their research findings at major conferences and visit collaborators at the Cornell Lab of Ornithology, fostering knowledge exchange and professional development.

Partnership:
The partnership with the Met Office will give the student access to the long-term monitoring data from the national network of weather-surveillance radars and radar remote-sensing expertise, complementing the Bristol team's strength in quantitative ecology and conservation. Together,

this collaboration will repurpose powerful remote sensing data from weather forecasting for avian population monitoring, with direct conservation impacts.

**Collaborative Partner:**

The Met Office will provide in-kind support to this project through: 1) co-supervision of the student, offering expert guidance on radar remote sensing alongside the Bristol supervisory team; 2) access to its national network of long-term weather-surveillance radar data, along with support in accessing, decoding, and interpreting these datasets to extract reliable biological signals; and 3) targeted training in radar meteorology, giving the student a foundational understanding of radar operation and atmospheric influences on radar signals, complementing the ecological, remote sensing, and statistical training provided by the Bristol team. Together, these contributions reflect a genuine partnership combining meteorological infrastructure and expertise with ecological science, enabling the repurposing of weather-radar technology for large-scale monitoring of migratory birds with direct conservation relevance.

**Useful recruitment links:**

For information relating to the research project please contact the lead Supervisor via: fy.guo@bristol.ac.uk

**Bristol NERC GW4+ DTP Prospectus:**
https://www.bristol.ac.uk/study/postgraduate/research/great-western-four-doctoral-training-partnership-nerc/

**How to apply to the University of Bristol:**
http://www.bristol.ac.uk/study/postgraduate/apply/

**The application deadline is Thursday 7 January 2027 at 2359 GMT**