Do you get wintering Blackcaps on your berries, sunflower hearts or fat ball feeders?

Uncovering mysteries

Investigating the reasons Blackcaps winter with us

Garden BirdWatchers have welcomed researchers into their gardens to help find out more about Blackcaps; **Benjamin Van Doren** and **Greg Conway** summarise the work so far.

Today's natural world is changing rapidly. Climates are shifting and landscapes are being transformed, largely due to human activities. These changes are often occurring faster than scientists can fully grasp their causes and consequences. For migratory birds that rely on timing and navigation strategies honed by thousands of years of evolution, rapid changes to the environment may pose a serious challenge. Can birds successfully adapt to earlier and more variable springs; or, as winters warm, will migration itself become less appealing?

THE MYSTERIES OF MIGRATION

The Blackcap is one of Europe's most common breeding songbirds, and over the years this species has taught scientists a great deal about migratory behaviour. Pioneering research revealed that the migratory direction and distance preferred by young Blackcaps is inherited from their parents. Ever since, ornithologists have been trying to understand how much of bird migration is simply instinct, how much is learned, and how flexible individuals can be during their lifetimes.

We don't have to look far to find historical evidence for flexibility in birds' migration patterns. As the glaciers of the last ice age receded, huge swaths of previously ice-covered land became home to some of the world's longest-distance migrant waders. Thousands of

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years ago, the Sahara Desert was also once much greener than it is today, and desertification has created an ever-increasing barrier to be crossed by African-bound migrants. Will today's migratory birds adapt similarly, or are environmental changes occurring too fast for them to keep up?

FEMALE BLACKCAP: ROGER TIDMAN/NPL;TAGGED AND RINGED BIRDS: WWW.BENPORTERWILDLIFE.CO.UK

Blackcaps wintering in Britain may help us to answer this question. The number of Blackcaps spending the winter here instead of southern Europe and northern Africa has increased greatly in recent decades, and these wintering birds show a strong affinity for gardens, especially those with bird tables. In other words, it seems that thousands of Blackcaps have successfully changed their migratory strategy in a relatively short amount of time. Recent research by the BTO, led by Kate Plummer and previously reported in *Bird Table*, suggests that it may be the feeders themselves, in association with warming temperatures, that have enticed these individuals to spend the winter here.

OUR PROGRESS SO FAR

Scientists from the BTO, Oxford, and Exeter Universities have teamed up to better understand the Blackcaps spending the winter in gardens across Britain. Their study combines colour-ringing, direct tracking of individuals, and genetic methods to figure out where the UK's wintering Blackcaps come from, when they leave and return, how faithful they are to individual gardens, and whether their newfound migratory strategy has a genetic basis. Last winter, 36 Blackcaps were fitted with light-level geolocators, extremely light and small devices that record ambient light levels and can be used to track where they migrate and breed once the device is recovered. Dozens more Blackcaps were colour-ringed at sites across the British Isles, so each bird can be individually identified from the combinations of rings, allowing us to see how long they remain during winter or if they move elsewhere. This coming winter, the ringing and tracking effort will be expanded.

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USING YOUR GARDENS

This research was made possible by Garden BirdWatchers letting us know how many Blackcaps visit their garden each week, and in particular by those of you who have allowed the team to catch the birds in your back gardens. One was Mary Lindsay, who wrote in afterwards: *"It was a fabulous, interesting day; they're really generous with their knowledge and answering questions. Seeing 'our' birds up close was lovely; they're so much smaller than when they're seen in the garden – a Goldcrest was the icing on a very big cake! The 4–5 Blue Tits that are usually counted turned out to actually be over 24! Sadly, only one of the Blackcaps obliged – she was just colour ringed – the missing male turned up as usual for his 'breakfast' this morning, of course!"*

Blackcaps were colour-ringed (below) and fitted with geolocators (bottom photo).

HOW YOU CAN HELP

Do you have Blackcaps visiting your garden in winter? Please look out for Blackcaps with colour rings and note the positions of the colours on each leg. Or, even better, take a photograph.

Garden BirdWatch participants interested in finding out more about the colour-ringing tracking efforts and who have more than one Blackcap regularly during the winter can contact Greg Conway at the BTO (greg.conway@bto.org). Gardens with multiple Blackcaps regularly attending bird feeders are particularly valuable.

To attract Blackcaps to your garden, try providing high-energy foods such as fat balls and sunflower hearts.

Together, we hope that these tiny visitors to our gardens can teach us about the capacity for birds to adapt to some of the world's most pressing challenges.

Funds from the GBW Science Appeal have contributed to this work; we are very grateful to everyone who has donated to this appeal.