



Dave Wragg



Dave Wragg



© Ingo Amdt/naturepl.com

Avian pox in Great Tits

Over recent years, increasing numbers of reports of Great Tits with large, 'tumour-like' swellings have been received through our network of BTO Garden Birdwatchers. Such growths are not dissimilar to those seen occasionally in other birds, like Dunnock, House Sparrow and Woodpigeon but they are often larger and more severe in their appearance. Thanks to some new research, to which your weekly records have contributed, we now have an understanding of this emerging problem. By Mike Toms

The sight of any diseased bird is distressing enough but the sight of one with a large growth covering much of its face can be particularly upsetting. Over the last few years we have received calls about such birds from an increasing number of Garden Birdwatchers. The majority of cases have involved Great Tits, a recent phenomenon and something that has prompted some new work.

THE DISEASE ITSELF

The 'tumour-like' swellings are caused by avian pox, a viral disease of wild birds known to affect a wide range of species globally. In many birds avian pox infections are mild and only rarely result in death, and this pattern seems characteristic of the cases reported in House Sparrow, Dunnock and Woodpigeon (in particular) that have been reported here in Britain and Ireland over many decades. In cases where the lesions form on the eyelids or within the oral or respiratory cavities, then mortality rates can be much higher.

The lesions in tits, often larger than those of other birds and usually located on the head, may well incapacitate, restricting vision and making the bird more susceptible to secondary infection and predation. The disease is often transmitted by biting insects, notably mosquitoes, but may also spread through bird-to-bird contact or infected surfaces.

AVIAN POX IN GREAT TITS

The emergence of avian pox in British tits has been investigated by researchers at the Institute of Zoology, the Edward Grey Institute, the BTO and the RSPB, working together to unravel the reasons behind the recent spread of cases in Great Tits. By using reports of affected birds, submitted by the general public over the period 2006–2010, it has been possible to build up a picture of the extent of the problem, to see how the disease has spread and to identify how it may have first arrived in Britain.

Since 2006, when the first case in tits was reported, more cases have been found in tits than in other British bird species, something that may have been influenced by the fact that lesions on tits tend to be larger and more obvious. Great Tits were found to be the most commonly affected tit species, accounting for 80% of cases, followed by Blue Tit (16%) and then Coal Tit (4%).

Examination of the pattern of cases, reported both over time and across the country, revealed how avian pox in Great Tits has spread from an origin in south-east England. For this part of the work we used your Garden BirdWatch records which, uniquely, allow us to control for any change in the distribution of Great Tits themselves that might bias our interpretation of disease spread.

THE DISEASE ITSELF

Examination of the avian pox virus itself, using samples collected from the lesions present on 20 infected Great Tits, and using the sequencing of DNA extracts, identified that the pox virus present in these birds was identical to that found previously in Great Tits from Norway, Austria, Hungary and the Czech Republic, but different from many of the virus strains in other British species. This finding, coupled with the point of origin and pattern of spread, suggests that this form of avian pox probably arrived here from either Scandinavia or central Europe via an insect vector, possibly a mosquito.

WHAT NEXT?

The occurrence of avian pox tends to increase after warm wet weather, which favours certain insect vectors, so warm wet summers might see increasing numbers of cases. Ongoing monitoring will be important, along with disease investigations by staff at the Institute of Zoology. Additionally, researchers at the Edward Grey Institute will continue to monitor the disease in a study population near Oxford.

Find out more . . .

Lawson, B., Lachish, S., Colvile, K., Durrant, C., Peck, K., Toms, M., Sheldon, S. and Cunningham, A. (2012) Emergence of a novel avian pox disease in British tit species. PLOS ONE.