

Bright birds make good mothers

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Female blue tits with brightly coloured crowns are better mothers than duller birds, according to a new study led by the University of York.

Unlike humans, birds can see ultra-violet (UV) light. While the crown of a blue tit looks just blue to us, to another bird it has the added dimension of appearing UV-reflectant.

The three-year study of blue tits, which also involved researchers from the University of California Davis, USA and the University of Glasgow, showed that mothers with more UV-reflectant crown feathers did not lay more eggs, but did fledge more offspring than duller females. These brightly coloured mothers also experienced relatively lower levels of [stress hormones](#) during arduous periods of chick rearing.

The results of the study are published in the journal *Behavioral Ecology*.

Author Dr Kathryn Arnold, from the University of York's Environment Department, said: "Previous studies have shown that male blue tits prefer mates that exhibit highly UV-reflectant crown feathers. Our work shows that this is a wise choice. UV plumage can signal maternal quality in blue tits, so a male choosing a brightly coloured female will gain a good mother for his chicks and a less stressed partner."

Funded by the Royal Society and the Natural Environment Research Council (NERC), the project was based in woodlands on the shores of Loch Lomond, Scotland and investigated the factors that affect breeding success in [wild birds](#).

In blue tits (*Cyanistes Caeruleus*) both sexes exhibit bright UV-reflectant crown feathers. The birds are socially monogamous, with the female solely incubating the eggs and both parents feeding the chicks.

The researchers looked at the relative UV reflectance of the crown feathers of female [blue tits](#) and related this to indices of [reproductive success](#) - lay date, clutch size, and number of chicks fledged - as well as the [birds'](#) maternal state.

Dr Arnold said: "With up to 14 chicks to care for, blue tit mothers in our study were feeding their broods every couple of minutes. We showed that dowdy coloured females found this level of hard work twice as stressful compared with brighter mothers. Also, the mothers with more UV-reflectant crowns were highly successful, fledging up to eight more chicks than females with drabber feathers."

Provided by University of York

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