

# Dawn song of the male great tit attracts other males rather than females

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Female great tits (*Parus major*) stay clear of territories with better singing males while competing males are attracted to the territories with better singers. This unexpected conclusion was reached by researchers of

Wageningen University & Research in collaboration with the Netherlands Instituut for Ecology (NIOO-KNAW). This conclusion is diametrically opposed to the current assumption that male birds use their song to impress females and repel males to stay away from their territory.

Previous research showed that songbirds often cheat on their partners. One would thus expect male birds to use their song to lure any close-by [females](#). But nature tells a different story, the research team discovered.

"Our knowledge to date on the daily behavior between [males](#) and females is largely based on knowledge under lab condition because it is so difficult to follow a songbird for a long time," professor Marc Naguib explains. "We know what colors are preferred by the females, and what songs they prefer if they exhibit an immediate reaction. But how they show territorial behavior and respond to males in the open field was hitherto almost unknown."

## **Dawn song attracts male competition**

Ph.D. researcher Nina Bircher and her co-authors expected that the most enthusiastic singers would attract the most female interest. This appeared completely false. The male great tits with the most extensive repertoire that started singing the earliest and showed the most persistence attracted fewer females. Male great tits, however, entered their singing competitor's territory, captivated by the performance, the researchers write in the scientific journal *Behavioral Ecology*.

The reason for this behavior remains a mystery. Naguib: "Males may enter the competitor's territory to check out why the competitor is better than they are, or why he may be more suited to produce offspring." Whatever the reasons, the discovery sheds new light on the complexity of songbirds social and [communication network](#).

The prevailing assumption that the female great tit would more frequently enter a different territory when she is fertile is thus not supported. The premise is she would visit other territories specifically for extra-pair mating. In reality, however, this research shows that she enters territories other than her own once she has laid eggs in an effort to find food for her young.

## Wealth of information

It is not just the outcome of the research that is unique; the study itself is as well. The researchers radio-tagged forty male and forty female great tits. The transmitters emit a digital signal every five seconds, which provides a veritable wealth of information.

As far as we know, with over 35 million logs, this is the most [extensive study](#) ever conducted with radio-tagged birds. "A single day in this study has provided us with more information than we sometimes gather in months," Naguib clarifies proudly.

## Preprogrammed recorders

One hundred and thirty receivers collected the signals emitted by the avian transmitters in the vicinity of their nesting boxes. With this data, the researchers were able to register the birds' spatial behavior. A network of preprogrammed audio recorders concurrently recorded the [male birds' song](#). All this information reveals over thirty thousand movements to other territories that are related to the birds singing between 5 a.m., and 8 a.m.

**More information:** Nina Bircher et al. Extraterritorial forays by great tits are associated with dawn song in unexpected ways, *Behavioral Ecology* (2020). [DOI: 10.1093/beheco/araa040](https://doi.org/10.1093/beheco/araa040)

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