

Birds sing a sad song of loneliness

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Increasing human encroachment on natural habitats is progressively disturbing the natural balance in ecosystems. Finding the balance that allows humans and animals to live in harmony has eluded conservationists, but new research conducted on Spain's bird population has revealed that their songs may be telling us what we need to know to achieve this

harmony.

Go to any bar around the world and you are likely to see the same thing: men and women circling each other on the dance floor, trying to get noticed by the opposite sex. Birds are no different in this respect, with male birds using their songs to attract a mate. The more complex the song, the better their chances are of succeeding.

Researchers at the Spanish Council of Research (CSIC) studied the metapopulation system - a group of populations of the same species that are separated spatially - of the Dupont's lark (Chersophilus duponti) in north-eastern Spain. They came to a surprising discovery.

The researchers discovered that the songs of passerine birds may offer an insight into not only their mating habits, but also into population and other changes that might be occurring.

Scientists have long known that the use of song in bird populations is an exaggerated display in the context of male-male competition or mate attraction, used to make the males more conspicuous to the female. At the level of the individual, the song is considered an indicator of male quality.

What lead researcher Paola Laiolo and her colleagues discovered was an association between individual song diversity and the viability of the population as a whole (measured by the annual rate of population change). This correlation arises because males from the most numerous and productive populations, those less prone to extinction, sang songs with greater complexity. Less complex songs were sung by birds from smaller populations, the hypothesis being that this was a result of experiencing a poorer cultural milieu, and possibly a lower mating success rate.

Cultural attributes may therefore reflect not only individual-level characteristics, but also emergent population-level properties. This finding opens the way to the study of animal cultural diversity in increasingly human-altered landscapes.

Globally, over 500 songbird species are threatened, the most common cause being a loss of habitat and its fragmentation into a variety of ecosystems across remote regions. In these conditions, traditional long-term population monitoring is a difficult and costly task. But the easily quantifiable nature of this study suggests that birdsong could become an early warning signal of populations in trouble.

The study focused on the Dupont's lark, which is threatened with extinction in the Iberian Peninsula. For birdwatchers it is one of the most difficult birds to spot, and in the words of one avid anonymous birdwatcher they 'run faster than Linford Christie and hide better than Lord Lucan'.

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