The influence of group living on lifespan in western bluebirds

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Abstract

From humans to dolphins to slime molds, a wide variety of taxa live in social groups. The costs of group living are many, including increased disease risk, and competition for resources, mates, and opportunities for reproduction. Given the costs, why do individuals live in groups? We can hypothesize that individuals gain benefits from group living that counterbalance the costs. Cooperative breeding, a form of group living in which individuals other than parents help care for young, occurs in about 10 percent of bird species, including western bluebirds. When the helpers in cooperative groups do not breed, either the benefits of helping must compensate for the lost benefits of breeding independently, or helpers are "making the best of a bad job" in the face of constraints on independent breeding opportunities. A recent model suggested that the combination of an age-bias in extra-pair paternity success and a survivorship advantage for helpers could provide delayed benefits of helping behavior. Thus, if helpers live longer than non-helpers, this increased survivorship may be an important benefit that helps to explain cooperative breeding behavior. In this project, we will use a long-term data set on western bluebird demography and behavior to test whether helpers do indeed have longer lifespans than males that do not help. This work will help us to understand the diversity of benefits of sociality that can promote group living.