

# Delayed breeding is not necessarily costly to lifetime reproductive success

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Using 24 years of data from the longest-running study of a cooperative bird species on the African continent, researchers at the Universities of Bristol and Cape Town have cast doubt on one of the biggest assumptions in behavioral ecology: that a delayed start to breeding is necessarily costly to reproductive success.

The work, which appears online in the journal *Current Biology* on April 5th, is reported by Andrew Radford of the University of Bristol, UK, and colleagues at the University of Cape Town, South Africa.

In theory, individuals are expected to maximize their lifetime reproductive success by starting to breed as early as possible in life. Delayed reproduction on the part of so-called helpers in cooperative species therefore seems likely to be a bad strategy, and, consequently, much research has focused on how these individuals might overcome the assumed cost. Few studies, however, have attempted to quantify the cost itself. Moreover, it has been generally assumed that males and females are similarly affected by a delayed start to breeding.

In the new work on green woodhoopoes (*Phoeniculus purpureus*), a cooperatively breeding bird species, Amanda Hawn and colleagues show that although males met the traditional expectation that a delayed start to breeding results in a reduced lifetime reproductive success, females that started to breed later in life actually had a greater lifetime reproductive success than those that started earlier. In both sexes, the association between age at first breeding and lifetime reproductive success was

driven by differences in breeding-career length, rather than per-season productivity: Females that started later in life paradoxically had longer breeding careers than those that started earlier. These results demonstrate the importance of considering sex-specific reproductive costs when estimating the payoffs from life-history decisions—the authors hypothesize that young female breeders may have a reduced ability to cope with the high physiological costs of breeding in this species. The findings also bring into question the long-held assumption that delayed breeding is necessarily costly to reproductive fitness.

Source: Cell Press

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