

Living fast, dying young: Anthropogenic habitat modification influences the fitness and life history traits of a cooperative breeder

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April 01, 2024

Abstract

Anthropogenic habitat modification is especially detrimental to social species. Apart from direct fitness effects, it can destroy group structure and affect social interactions crucial for reproduction and survival. Here, we assessed the impact of habitat modification on the fitness and life history traits of a cooperative breeder, the Arabian babbler (*Argya squamiceps*). We collected spatial, reproductive, and social data on 572 individuals belonging to 21 social groups over six years and combined it with remote sensing to characterize group territories. Groups in modified habitats bred more and had greater productivity during dry years. Males living in modified habitats dispersed and acquired dominance at a younger age, showing a faster pace of life. However, group performance and total fitness were higher in natural habitats during average years. Habitat modification indirectly affected fitness by altering social structure, whereby younger males who lacked experience became dominant, leading to reduced nesting success.

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