Biodiversity response to relocating residents from protected areas in India

Abstract

About three million people live in Indian protected areas and often rely on forest resources. Whether these lifestyles can coexist sustainably with megafauna populations is debated across multiple disciplines. Protected areas are critical for the recovery of megafauna, especially large carnivores, but this is difficult because large mammals typically compete for resources with humans. Conflict with forest-dwelling communities occurs due to livestock, crop, and sometimes human depredation. Habitat loss and degradation beyond protected areas aggravate these conflicts. To overcome this issue in India, tiger reserves are designed with core and buffer zones. The core is legally mandated to be inviolate (no human residence), whereas the buffer is a multi-use area with a broader conservation emphasis. When new tiger reserves are declared, the Wildlife Protection Act of India provides for the voluntary relocation of residents from core areas. Adults who choose to relocate outside the core are offered financial incentives. The assumption behind this relocation program is that it enhances the lives of subsistence-living communities while also benefiting biodiversity by providing habitat for wildlife. However, scientific evidence on the expected biodiversity responses is limited. My UMN doctoral research will examine whether and how moving people helps restore the diversity of large mammals in different habitats and ecoregions of India. The study has two overarching questions:

1. How are potential biodiversity responses affected by variable forest types, ecoregions, anthropogenic presence, restoration actions, and time since relocation?
2. How does biodiversity (plants and large mammals) respond to abandoned village sites, and how does it compare to uninhabited areas?

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