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TITLE: More than marine: revealing the critical importance of mangrove ecosystems for terrestrial vertebrates

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ABSTRACT:

Abstract Aim Despite mangrove forests spanning marine, freshwater and terrestrial realms, their function as terrestrial ecosystems has been largely ignored. In the light of the rapid global decline of mangroves, it is critical to build a more holistic understanding to plan for effective management of the whole ecosystem. This study examines the importance of mangrove forests for terrestrial vertebrates. **Location** Global mangrove forests. **Methods** An extensive review of records of the use of global mangrove forests by the most poorly studied terrestrial vertebrate groups: mammals, reptiles and amphibians. We explored the species richness and distribution of these groups, along with their ecological characteristics. We also explored the relationship between animal and plant species richness across the distribution of mangrove forests. **Results** Mangroves are used by a remarkable number of terrestrial mammal, reptile and amphibian species ($n = 464$); five times more than previously reported. The diversity of species uncovered by this study, almost half of which are of conservation concern, underscores the value of mangroves as terrestrial ecosystems. Most species were facultative users of mangroves; however, there are critical knowledge gaps in how these species interact with these ecosystems. We found a positive global correlation between animal and mangrove plant richness. **Main conclusions** This study highlights that mangrove forests are considerably more important for terrestrial animals than generally acknowledged. We present the most comprehensive review of the importance of mangrove forests for terrestrial vertebrates, but also reveal significant knowledge gaps in the ecology of these ecosystems. Our study uncovers evidence that these habitats may be increasingly important as refuges for species from anthropocentric disturbance. Our findings emphasize the importance of moving beyond viewing mangroves as marine ecosystems, towards recognizing their cross-realm importance. Without such a shift, there will be significant limitations in our ability to manage and conserve these ecosystems.

SOURCE: Diversity and distributions

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