
Wild and rewilded: Giant Aldabra tortoises in the Western Indian Ocean

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Abstract

Giant tortoises were widespread on islands around the world until humans recently arrived and drove almost all of them to extinction. Seven out of eight endemic WIO species have gone extinct, with many negative effects for the islands' remaining native biodiversity, as the giant tortoises were key ecosystem engineers. What could be a picture of despair has been turned into a conservation and restoration success, as the WIO in the last two decades has emerged as a world-leading region in the development and application of rewilding as a conservation action. An ever-increasing number of rewilding projects throughout the WIO aim to resurrect the megafaunal ecosystem functions of the extinct giant tortoises by rewilding with the sole surviving WIO species, the Aldabra giant tortoise (*Aldabrachelys gigantea*), which survives in the wild on Aldabra Atoll, Seychelles. The tortoises currently do well on the atoll, with a current population of about 100,000. Unfortunately, their ecosystem is threatened by climate change. Drought is already a serious issue and sea level rise is poised to drown large areas of the atoll in the next few hundred years. I argue that conservation management of both wild and rewilded tortoises and their respective ecosystems can learn a lot from each other, especially from a closer long-term integration of research activities on Aldabra and rewilding projects in the WIO. There are still major gaps in our basic understanding of tortoise biology, ecology, and genetics. Joint focused research in these areas would provide a solid understanding with which to optimize the management of tortoise-mediated ecosystem functioning in rewilding sites, and minimise the impacts of projected climate change on giant tortoises and their ecosystem functions on Aldabra. Lastly, one aspect that is often forgotten in tortoise rewilding research is how intimately giant tortoises are linked to the WIO nations' local cultures, and how closely many rewilding projects are linked to their socio-economic systems. Promoting the use of the Aldabra giant tortoise as an icon for the WIO to encourage regional co-operation is a low-hanging fruit waiting to be picked and dispersed.

Keywords: Aldabra giant tortoise, ecosystem restoration, Giant tortoise, rewilding

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