Conservation ecology of the Pilbara Northern Quoll: home range, distribution and future climate change impacts

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The northern quoll (*Dasyurus hallucatus*) is a nationally threatened and declining mammal species. Declines have been catastrophic, extensive and rapid due to predation on the introduced cane toad (*Rhinella marina*), habitat removal, predation by feral and domestic animals, inappropriate fire regimes and pastoralism. An emerging threat for the isolated population within the Pilbara region of Western Australia is the impact of mining, which is contributing significantly to habitat loss. To investigate the conservation ecology of the Pilbara northern quoll, we examined interactions with mining infrastructure barriers by fitting custom made GPS pinpoint 50 collars (Sirtrack) to seven individuals. We found evidence of long distance dispersal and use of road underpasses. We present data on relationships with geology and vegetation and a comparison with a study of quoll movements in undisturbed areas of the Pilbara. We undertook a comprehensive species distribution modeling exercise using bias compensation to account for a focus of survey efforts around resource projects. Under future climate change projections, northern quoll potential distributions will contract inland and cane toad distributions will shift coastwards, leading to less future conflict between the two species than has been previously predicted.

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ABSTRACT BOOK