Distribution of mammals in wetlands and drylands in south-western Australia: Are wetlands important refuges for mammals?

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Climate change in Mediterranean ecosystems, including lower rainfall and extended drought, presents significant threats to vulnerable mammal species. The northern Swan Coastal Plain in south-western Australia contains conservation-significant banksia woodland remnants and has experienced increased urbanisation, and significant declines in rainfall and groundwater levels. There is evidence of associated negative impacts on the health of wetland vegetation, but little knowledge of how this impacts native mammal fauna. We investigated the distribution of mammals (~6g-9kg) around wetlands to understand the importance of these as refuges. We used a range of detection methods to characterize the presence, diversity and relative abundance of mammals within three spatial scales (0-5m, 5-150m, 150-1000m from water) across three lakes compared to surrounding dryland sites (>1000m from water). Sites close to water (<1000m) were similar in diversity and relative abundance of native mammals, such as *Rattus fuscipes* and *Hydromys chrysogaster,* to other sites within the same scale. However, there were some differences amongst wetlands in the complement of species (e.g. the presence of *Isoodon obesulus fusciventer* at only one site). Dryland sites differed from wetland sites in the absence of native mammals (except *Tarsipes rostratus*). Introduced mammals such as *Mus musculus* showed no clear trends in relation to water. This study provides evidence that the vegetation surrounding wetlands (0-1000 m) provides an important refuge for native mammals, but also habitat for introduced mammals. Key management actions are thus needed to protect these fragile wetland habitats to maximise the persistence of native mammal fauna under climate change.

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ABSTRACT BOOK