The importance of wetland conservation in rural landscapes: A case study from a South African Natural World Heritage Site

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Abstract

The traditional fortress-type approach to protected area management, while beneficial to natural systems, often leaves local communities displaced from their land with restricted access to natural resources. Integrated Conservation and Development Projects (ICDPs) have been proposed as an alternative approach with aims to reduce dependence on natural resources by compensating communities with alternative sources of income. The success of development projects plays a key role in conservation, as rural land surrounding protected areas can significantly contribute to the ecological resilience of landscapes. Waterbirds utilise landscapes at broad spatial scales in order to fulfill various requirements of their annual cycle, and so wetlands outside of formally protected areas have the potential to contribute to their long term persistence.

In order to understand the ecological role of wetlands in non-protected areas, we analysed the abundance and diversity of waterbirds in two contrasting landscapes in KwaZulu-Natal, South Africa. The iSimangaliso Wetland Park (IWP) is a Natural World Heritage Site which is characterised by diverse wetlands habitats. Rural areas with high population densities surround the park, resulting in extensive use and associated transformation of non-protected wetland habitats. Bimonthly waterbird point counts conducted in both the IWP and rural lands were used model the effect of conservation status (protected vs. non-protected) on waterbird abundance and diversity. The models showed a significant effect of protection status, with non-protected sites having greater average abundance across all sampling periods. Species diversity was also found to be higher in non-protected sites in 60% of sampling periods.

Our results suggest that although large tracts of protected habitat are available, resources in unprotected habitats remain an integral component of the landscape for waterbirds. This finding highlights the importance of non-protected wetlands as well as the essential need to mitigate further habitat degradation in this social-ecological system. In order to meet this and other conservation goals of the IWP, trade-offs between wetland use and preservation need to be identified and discussed by rural community and conservation stakeholders. However, reaching mutually beneficial agreements is a complex process given that the current relationship between many rural communities and conservation officials in the region is fraught with distrust and a lack of communication. We suggest that an increase in engagement and communication between parties, along with the creation of additional ICDPs, will foster a more synergistic management approach while ensuring the persistence and integrity of non-protected wetlands and their biodiversity.

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