Investment suitability analysis - Spatial analyses, habitat prioritisation and visualisation in Mission Beach

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Abstract: A method was developed to identify future habitat conservation priorities in the Mission Beach area. Maps depicting land suitability for habitat protection and restoration were created using *CommunityViz* software. In this suitability analysis, habitat is rated as suitable (green) or not (red) for protection and restoration based on the summed biodiversity significance, threat, condition and protection indices. The system provides simple means to alter the variables to allow prioritisation in a range of different contexts— for example prioritisation for inclusion in the formal protected area estate, or for investment in habitat rehabilitation for weed removal. *CommunityViz* has been designed particularly for community applications where technical simplicity and cost-effectiveness are key drivers.

In order to explore these opportunities for restoration and protection, geographical information systems (GIS) and planning support systems (PSS) are used in conjunction with a community engagement process to develop a series of scenarios for exploration of rehabilitation/restoration options. Using *CommunityViz* software the project in Mission Beach showed that is possible to clearly, objectively and transparently determine and identify priorities dynamically, and visualise these priorities in response to changes in criteria and policy settings. We began by identifying four models: biodiversity, threat, condition and protection. This exercise will allow natural resource planners and managers to better identify conservation priorities and appropriate strategies for moving forward across a whole range of their responsibilities in habitat restoration and protection

This type of analysis enables identification of those habitat areas that most contribute to overall landscape connectivity, and evaluate the outcomes for overall connectivity from targeted protection, rehabilitation and restoration in those critical habitat areas. Our results will become part of an interactive biodiversity mapping platform and help guide investments in habitat protection and restoration through the Mission Beach Habitat Network Action Plan.

Keywords: *Habitat prioritisation, conservation, Planning Support System (PSS), suitability analysis*

Abstract only