



Ravensthorpe Range Biological Survey

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Background



The Ravensthorpe Range has long been recognized as both a major centre of biodiversity and an area of significant mineralisation with a long history of exploration and mining activity. Until recently this area had remained little studied. The range is known for a high number of both threatened and locally endemic plant species and a small number of short range endemic invertebrate species.

Three related projects were recently commenced to address the lack of biological knowledge. A quadrat based flora survey was commenced by DEC consultants in 2007; this was extended by DEC staff in 2008 and provided cover data of plant species found in 266 quadrats sampled across the range. As a result of the first two years of the survey, DEC commissioned more detailed studies in 2008 on the distribution and conservation status of *Lepidosperma* and *Austrostipa* species found on the range. The taxonomy of these sedges and grasses is complex and yet to be fully resolved. DEC also commissioned an investigation of the short range invertebrates in 2007 which studied 79 sites across the range.

A South Coast NRM funded mapping project of the northern part of the range commenced in 2007, and a collaborative project between DEC and Ravensthorpe Nickel undertook an assessment of the conservation status of 80 taxa largely restricted to the range. Most of the funding for the DEC studies was provided through the Biodiversity Conservation Initiative.

The data compiled by all projects will allow an understanding of the patterns of vegetation across the range, and permit a comparison between vegetation mapping units and composition and abundance data collected in the quadrat based study. All of these data will be used in an assessment of the regional significance of the flora, vegetation and short range endemic invertebrates and will be available to assist in the environmental assessment of future development proposals.

Findings

During the three years of the flora study, 694 taxa were recorded from 266 quadrats. These taxa included 14 populations of five taxa of Declared Rare Flora, and populations of 51 other





taxa recorded on DEC's Priority flora list. Thirty-two taxa were regarded as endemic to the range and a further 17 taxa have their distributions largely restricted to the range. At least four taxa were recognized as new during the course of the survey, not including *Lepidosperma* (a taxonomically difficult sedge group). A further 15 taxa were identified that require additional work to determine their correct taxonomic placement. The survey also identified 48 taxa not previously recorded for the range.

The detailed 2008 study on the *Lepidosperma* species on the range found 42 putative *Lepidosperma* taxa as occurring in the greater Ravensthorpe Range area, 16 of which have been formally identified for the first time. Eight of these taxa are recommended for listing on the Priority flora list, with further taxonomic or survey work being required for 19 taxa. Further taxonomic work undertaken in 2008 on grasses in the genus *Austrostipa* reported two new species from the Ravensthorpe Range, neither was restricted to the range.

Four species of short-range invertebrate species were identified as occurring on the range, one of which is endemic to the range. Work on the analysis of the vegetation patterns and comparisons with the mapping project are continuing. The DEC-funded part of the species conservation assessment is complete and has resulted in changes to Priority flora listing and provided recommendations for additions to the Declared Rare Flora list.

Management Implications

The findings of the survey confirm the Ravensthorpe Range as a biodiversity hotspot for both threatened and endemic plant species with significant further taxonomic work required, especially for the *Lepidosperma* group to clarify number of taxa and their conservation status. The management of the flora in an area of high mineral prospectivity will be an ongoing challenge for both DEC and the mining industry.

The South Coast NRM mapping project has defined over 70 vegetation types in the northern part of the range. Current work is assessing how these units are related to the detailed floristic data collected at the 266 quadrats funded by DEC. Both these datasets will be very valuable in providing a detailed regional framework to assess any proposed developments in the range.



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