



## Environmental Protection Bulletin No. 6

# The natural values of the Whicher Scarp

The Whicher Scarp forms a sickle shaped landform unit that extends from near Burekup in the north where it meets the Darling Scarp, to the south-west of Dunsborough where it meets the granites of the Leeuwin-Naturaliste Ridge. The Scarp covers an area of about 21,000 ha, rising to over 100 m in places and with an average height of 50 m and is incised by a series of rivers and creeks. Based on landform and natural values the Whicher Scarp is divided into three sectors, the West, Central and North Whicher Scarp.

The Whicher Scarp lies within the Southern Jarrah Forest Biogeographic Sub-region and forms a transitional area between this Region and the Swan Coastal Plain Biogeographic Region (Map 1). The entire area of the Whicher Scarp was included in the Regional Forest Assessment (RFA).

### Background

A series of studies and reports describing aspects of the flora and vegetation of the Whicher Scarp since the 1970s have noted the striking and unusual features of the area. The Environmental Protection Authority (EPA) recognised the particular flora values of the 'Whicher Range' (Scarp) area in the recommendations of the Conservation Through Reserves Committee (CTRC) System 1 and System 6 reports (DCE 1976 and DCE 1983) and recommended a complete survey of the 'Whicher Range', and proposed conservation reservation of parts of the Whicher Scarp.

Since that time, some small conservation areas related to these recommendations have been gazetted, and some forest conservation areas identified through Forest Management Plans (Conservation Commission of WA, 2004). A recent comprehensive floristic survey of the Whicher Scarp (Keighery et al, 2008)<sup>1</sup> has further expanded, defined and highlighted the areas of outstanding conservation values requiring protection (Map 2).

The Whicher Scarp and its interface with the Swan Coastal Plain is subject to current exploration licences and mining leases for heavy mineral sands, which are likely to impact significantly on the values of the Whicher Scarp. The area is also subject to sand and gravel mining and potential timber harvesting in the remaining area of native vegetation (Map 3).

### Whicher Scarp natural values

The natural values of the Whicher Scarp in relation to landforms, vegetation, flora and fauna are diverse and varied. They include:

#### *Distinct and naturally restricted landform*

- The Whicher Scarp is a sickle shaped scarp comprised of the sands and laterites of the Perth Sedimentary Basin, linking the granite scarps of the Darling Range and Leeuwin-Naturaliste Ridge.

<sup>1</sup> Keighery BJ, Keighery GJ, Webb A, Longman VM & Griffin EA 2008. *A Floristic Survey of the Whicher Scarp*. Department of Environment and Conservation, Perth, Western Australia.

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- A very restricted landform, comprising only 0.7% (approx 21,000 ha) of the Southern Jarrah Forest Biogeographic Sub-region.
- 46% (approx 9,200 ha) remains naturally vegetated.
- Over 50% of the remaining naturally vegetated lands are public lands located in nine Whicher Scarp Reference Areas.

### *A diverse flora and a local 'biodiversity hotspot'*

More than 900 native species have been identified in the Whicher Scarp, reflecting flora of the Jarrah Forest, south coast sands and wetlands and Swan Coastal Plain sands as well as a large number of Whicher Scarp centred species. The Whicher Scarp is a local centre of species richness in the species rich south-west. Based on vegetation and flora values, including species richness, endemism and geographically distinct species, the Whicher Scarp is recognised as a local 'biodiversity hotspot'.

- A centre of speciation. Of the 900 recorded species, more than 40 species having been recently described in the Whicher Scarp and another 25 anticipated to be genetically distinct and/or have distinctive growth forms.
- A highly endemic flora at a national, regional and local scale.
- More than 60 species are State listed species, with eight Declared Rare and 53 Priority Species. Nine species are Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* listed.
- Forty nine species are at the northern end of their range and 32 species at the southern end of their range.
- More than 100 species have population/s in the Whicher Scarp which are separated, sometimes remarkably so, from other populations of the taxon.

### *Distinctive vegetation*

- Six unique vegetation complexes, of which two are highly restricted and three have less than 30% of their area remaining.
- A diverse range of woodland plant communities.
- Four distinctive regional floristic community patterns are distinguished in the Whicher Scarp, including highly restricted and several listed Priority Ecological Communities.

### *Restricted and rare wetland communities*

The Whicher Scarp has a series of distinctive wetlands including occurrences of the Busselton Ironstone communities which are a Threatened Ecological Community. One of the other wetland communities is listed as Priority Ecological Community.

### *High degree of intactness of native vegetation*

Large areas of native vegetation on the Whicher Scarp are in excellent condition. Less than 8% of the flora of the Whicher Scarp are weed species.

### *Unusual relictual habitats*

The deep sands of the Whicher Scarp with their associated restricted plant communities and flora are relicts of a past landform stretching from Geraldton to Augusta.

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### *Ecological linkages maintained*

Within the Central and North Whicher Scarp effective ecological linkage is maintained, however, the West Whicher is mainly private land and is heavily cleared. The Whicher Scarp forms a regional ecological linkage between the Darling Plateau and the Leeuwin-Naturaliste Ridge.

### *Fauna*

While the Whicher Scarp has not been comprehensively surveyed for fauna, existing site-based information indicates a high diversity of vertebrates. The Whicher Scarp supports a high number of threatened vertebrate species including all three threatened black cockatoos, Chuditch, Western Ringtail Possum and Phascogale, as well as a high number of Priority fauna species including Quenda, Carpet Python and Western False Pipistrelle. The Whicher Scarp also supports a variety of habitat specialist species that have declined or disappeared on the adjacent Coastal Plain (including Southern Emu-wren, Red-winged Fairy-wren and Rufous Tree-creeper). It is home to significant populations of species whose survival on the Coastal Plain is dependent on recruitment and recolonisation through ecological linkages with larger populations in the Whicher Scarp. The area is a known breeding area for species which feed on the Coastal Plain; for example, black cockatoos and various birds of prey.

The Whicher Scarp is likely to support significant populations of short range endemic fauna species that are confined to localised habitats/soils and plant species/assemblages restricted to the Whicher Scarp. Contiguous habitats on the Whicher Scarp are likely to be important in facilitating seasonal movement of fauna species that require different habitats/plant species for resources during different seasons (e.g. movement of nectarivores/pollinators, insectivores when different plants are flowering at different seasons) and it is likely that some of the Whicher Scarp endemic plants have specialised pollinator species restricted to them.

### **EPA assessment of proposals affecting Whicher Scarp**

There is approximately 46% of the original (pre-European) native vegetation remaining on the Whicher Scarp. However, only 3.4% of the Whicher Scarp is protected in formal conservation reserves. The remaining area of native vegetation meets the six criteria for regionally significant natural areas (EPA Guidance Statement 10), namely Representation of Ecological Communities, Diversity, Rarity, Maintaining Ecological Processes and Natural Systems, Scientific or Evolutionary Importance and General Criteria for the Protection of Wetland, Streamline and Estuarine Fringing Vegetation and Coastal Vegetation.

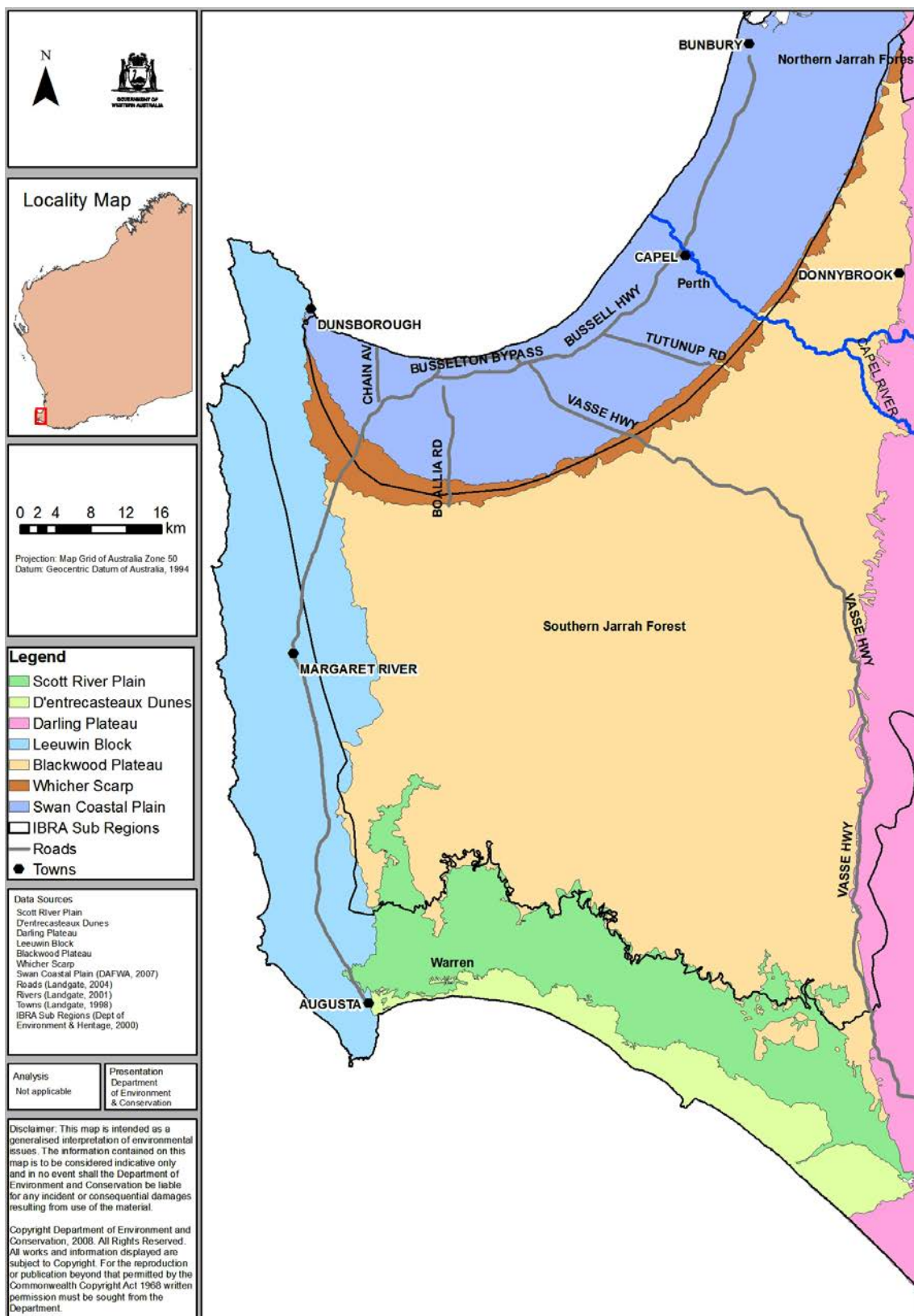
The EPA will, as required under the *Environmental Protection Act 1986*, continue to consider proposed developments for this area on an individual basis, however the EPA recognises the significance of the natural values of the Whicher Scarp across a range of biodiversity characteristics at the genetic, species and community levels, and the small overall extent of the Whicher Scarp environments. Where the EPA considers a proposal is likely to pose significant risk to the outstanding natural values of the Whicher Scarp, it will be formally assessed, and/or may be considered environmentally unacceptable.

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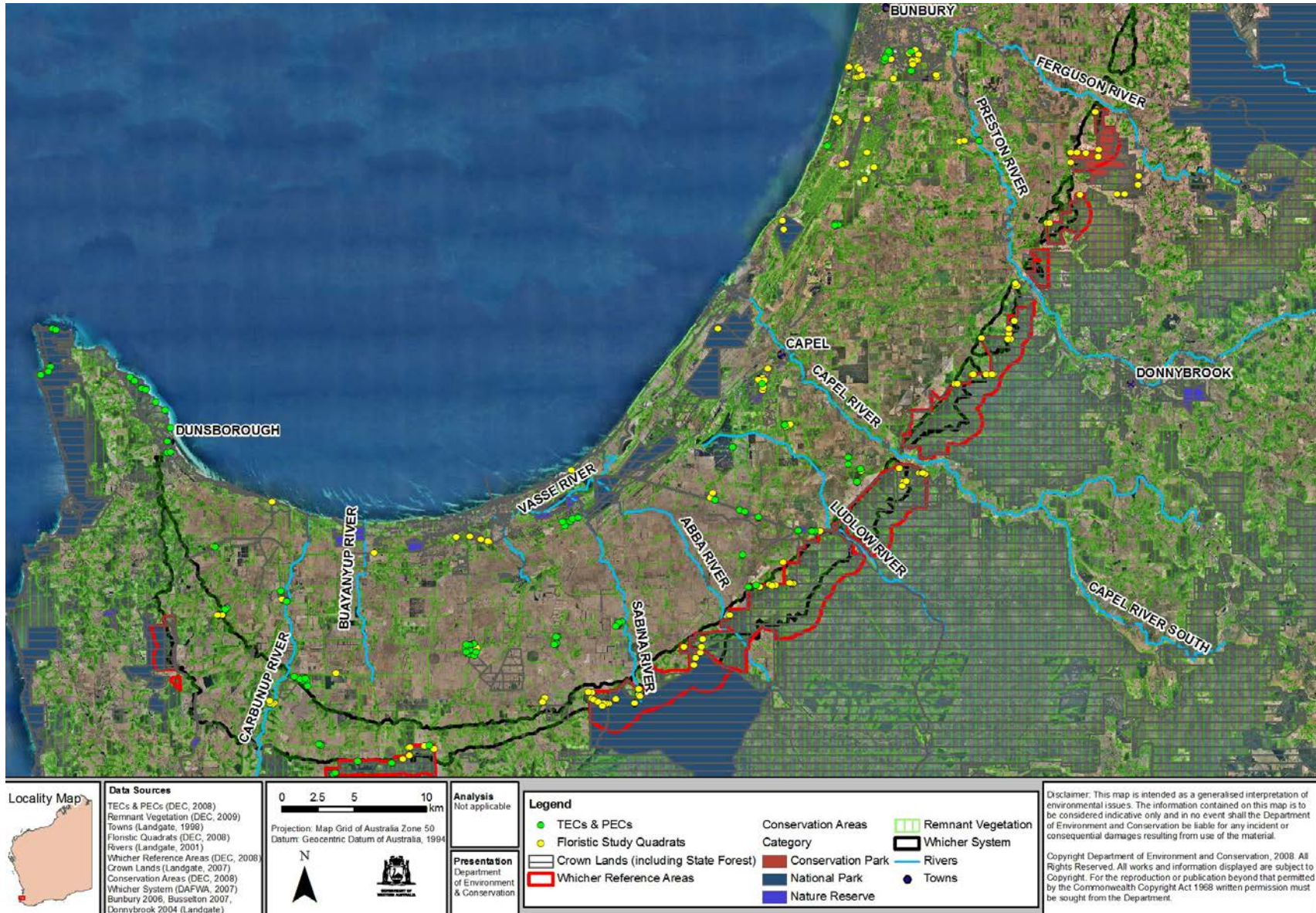
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Map 1: Whicher Scarp Location



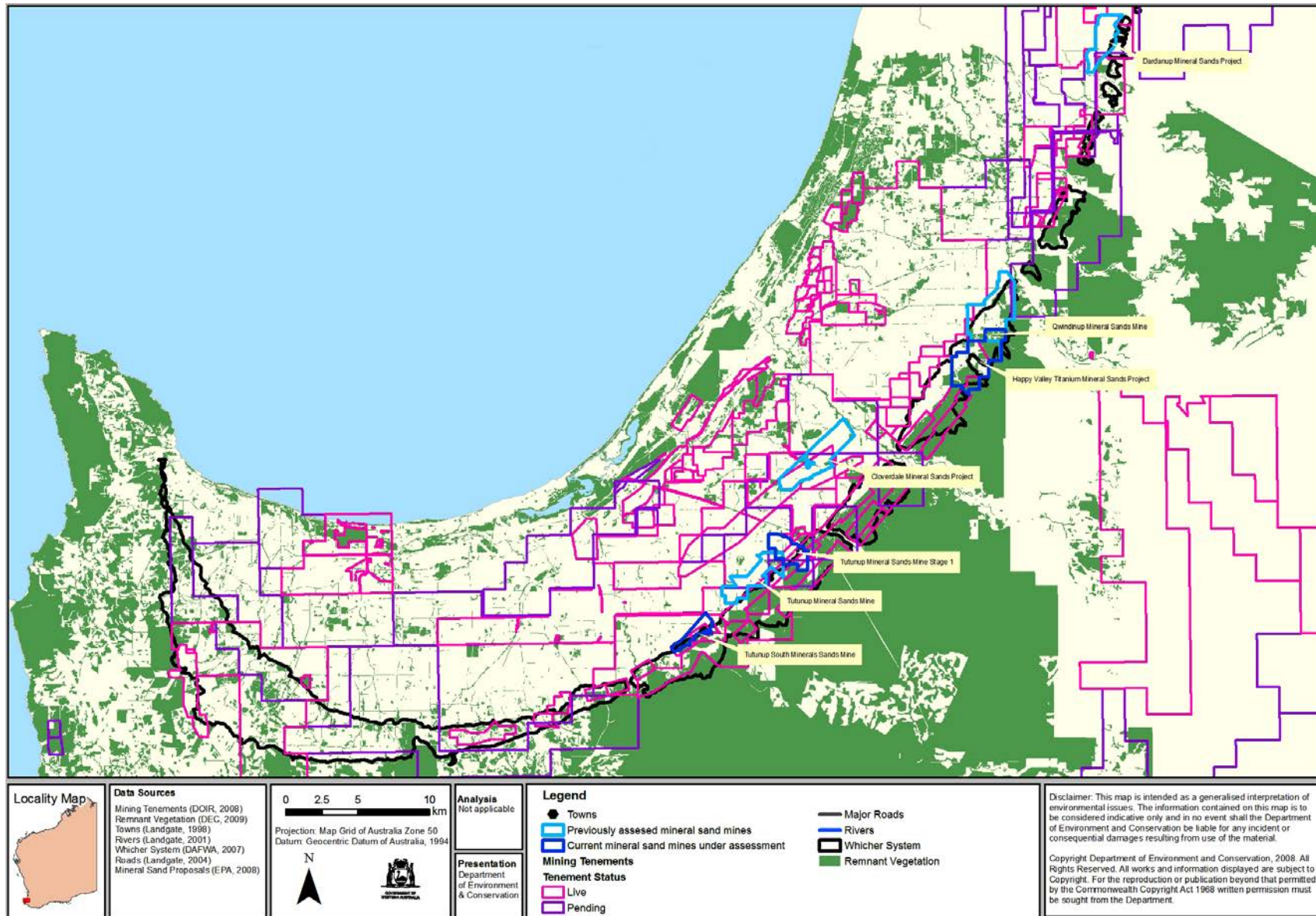
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Map 2: Remnant vegetation, Crown Lands and conservation areas



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Map 3: Mining tenements and mineral sand mining proposals