Hampton

Mallee and *Melaleuca* low woodlands on footslopes of the Hampton scarp and coastal sand ridges of the Roe Plain near Eucla in the Hampton Bioregion, W.A. Photo: G.J. Keighery

Description

Bioregional description and biodiversity values

The Hampton Bioregion comprises Quaternary marine dune systems fringing a coastal plain of the Eucla Basin that is backed by a stranded limestone scarp. Areas of marine sand are also perched along the top edge of the scarp. Various mallee communities dominate the limestone scree slopes and pavements, as well as the sandy surfaces. Alluvial and calcareous plains below the scarp support eucalypt woodlands and Myall open low woodlands. There are no subregional divisions within Hampton.

The limestone caves of the Eucla Basin are one of the largest karst systems in the world, including underground networks of caves, blowholes and subterranean streams. A unique stygofauna inhabit the cave systems, including some threatened invertebrates (Gondwanan relicts) and sub-fossil remains. High levels of endemism are found in stygofauna as dispersal mechanisms between individual aquifer systems are limited, and faunas have evolved in isolation (e.g. *Tartarus mullamullangensis, T. nurinensis*).

Coastal dunes of the region support three endemic reptile species (*Pseudemoia baudini, Lerista arenicola* and *L. baynesi*) and one endemic subspecies of reptile (*Ctenotus brooksi euclae*).

A variety of coastal dune plants also occur nowhere else (*Scaevola crassifolia, Atriplex cinerea* and *Euphorbia paralais*). These dune communities are noted for their high species diversity.

Land use is mainly unallocated Crown land, pastoral lease, and conservation reserve.

Overall condition and trend

The wetlands in the bioregion are caves with locally endemic faunas. The karst systems and stygofauna are thought to be in near pristine condition but threatened by unrestrained recreational access. Several of the plain's ecosystems and species are believed to be at risk from feral predators and stock grazing.

Conservation priorities

Reserve management in the bioregion is fair to good but the major constraint on both off-reserve conservation and natural resource management is the cost associated with the remoteness of the location.

Nationally Important Wetlands

There are no wetlands of national importance in the Hampton Bioregion.

Wetlands of regional significance

Four wetlands have significance; all are in caves: Weebubbie, Nurina, Pannikin Plains and Winbirra Caves. These caves are all in good or near pristine condition, but the future trend is unknown. The threatening process for all caves is uncontrolled recreational use.

Riparian zone

There are no true riparian ecosystems in the Hampton Bioregion.

Ecosystems at risk

None are listed under State legislation. However, Tallerack mallee-heath shrublands, Bluebush succulent steppe and drift sands are thought to be at risk. Their condition is fair or good, but the trend is declining and unknown. The primary threatening processes are feral animals (cats and dogs) and grazing (rabbits and sheep).

Species at risk

More than 60 per cent of the Hampton's original mammal fauna is now regionally extinct.

Three birds are declared vulnerable under State legislation. One, an albatross, is an occasional visitor to the coastal section of the region.

The general condition of birds is fair and an overall trend is unclear. The albatross is threatened by commercial fishing activities and the other birds are threatened by grazing, weeds, foxes, clearing and possibly a change in fire regimes.

Three spiders and one isopod are all threatened by habitat disturbance by cavers and hydrological change. Condition and trend information is not known for any cave invertebrate.

Management responses

Reserve system

There are two A-class reserves in Hampton – Nuytsland Nature Reserve and Eucla National Park. The reserve management ranking is fair to good for both. Six of the nine vegetation associations in the region are represented in conservation reserves, and the reserve system occupies 10.9 per cent of the subregion.

Salt lakes and bluebush succulent steppe are not currently represented in CALM conservation estate and have high priority for acquisition. The constraint is land availability because most of the region is held as pastoral leases. Hampton has a reservation priority class of four (low).

Off-reserve conservation for species and ecosystem recovery

The priority groups are critical weight range mammals, samphire thornbill and malleefowl, and chenopod communities.

A number recovery actions are necessary, including:

- capacity-building in pastoral industry to optimise chenopod grassland biomass and productivity,
- research into controlling Wards weed,
- monitoring rabbit numbers following the population reduction caused by callicivirus,
- fire protection of existing reserves, and
- examination of historical records of original mammal fauna with the view to re-introductions that reconstruct original critical weight range mammal communities.

Hampton's priority for off-reserve conservation is ranked as six (limited off-reserve measures are required).

The major constraints are competing land use (pastoral industry) and the high cost associated with conducting management so far from population centres.

Integrated natural resource management (NRM)

A number of natural resource management actions are currently happening. They include:

- changes to legislation relating to conservation, environmental protection, pastoral activities, sandalwood collection and mining;
- institutional reform (rural reconstruction, industry reconstruction new tenure and management arrangements); and
- some rabbit and fox controls as part of threat abatement planning actions on pastoral leases.

Opportunities to expand NRM actions include:

- the establishment of conservation areas to fully represent salient features of the Hampton escarpment and Roe Plains, and
- planning with local governments and National Action Plan for water quality and salinity.

The main constraints are:

- the high cost associated with remoteness,
- that the Land Administration Act in relation to pastoral operations is not always consistent with conservation goals, and
- the generally poor awareness of biodiversity values.

Major data gaps and research priorities

As a benchmark for long-term monitoring, 12 quadrats, positioned to sample one or two points within each of the region's main landform units, were surveyed for plant and vertebrate animals in 1984.

More information, survey and mapping is required of soils, fauna (available data includes bird atlas, specific threatened bird distributions and limited monitoring sites for mammals), flora (subsequent data is confined to specific threatened flora on a few large reserves), habitat requirements and population trend of nearly all species (including feral animals) and on the effects of disturbance by as exotic predators, weed colonisation and fire.