Yalgoo

Gimlet, *Callitris* and Mulga woodlands over herbfields of 'everlastings' on red earth plains east of Lake Moore in the Yalgoo Bioregion, WA. Photo: N.L. McKenzie

Description

Bioregional description and biodiversity values

Yalgoo extends west to the boundary of the South-west Botanical Province and includes the Toolonga Plateau of the southern Carnarvon Basin.

This region is an interzone between south-western bioregions and the Murchison. It is characterised by callitris-*E. salubris*, mulga, and bowgada open woodlands and scrubs on earth to sandy-earth plains in the western Yilgarn Craton and the southern Carnarvon Basin. The latter has a basement of Phanerozoic sediments and is rich in ephemerals. The climate is Mediterranean, semi-arid to arid and warm.

The dominant land use in the region is grazing, with smaller areas of conservation estate, unoccupied Crown land/Crown reserves and mining.

Special values include the Tallering Peak ironstone and jaspilite range (unique landform and vegetation complexes), banded ironstone in the Mt Gibson Ranges (containing a significant number of endangered flora), Warradagga Rock (a granite outcrop with endangered flora and invertebrates in ephemeral ponds) and the Mt Singleton Ranges (where there is a number of endangered flora with some unusual vegetation associations). A number of rare vertebrate animals (*Egernia stokesii badia, Calyptorhynchus latirostris* and *Acanthiza iredalei iredalei*), plants (*Acacia vassalii, Darwinia masonii* and *Eucalyptus crucis* subsp. *praecipua*) and ecosystems (particularly shrublands and succulent steppe) exist within the region.

Yalgoo is also rich and diverse in flora and fauna although most species are wide ranging and usually occur in at least one of the adjoining regions. Freshwater pools are refugia for species requiring mesic conditions.

Overall condition and trend

The Continental Stress Class for Yalgoo is four, even though much of Yalgoo is visibly degraded by past agricultural practices (primarily sheep grazing) and feral herbivores. Stress class calculations have been distorted by the large Toolonga Nature Reserve located on the region's northern periphery. The stress class should actually be three.

The condition of wetlands and riparian systems in the bioregion is fair to good but often declining. The trend for some wetlands is unknown. Many ecosystems and species are considered to be under threat from vegetation clearing and fragmentation, grazing pressure, feral animals, changed fire regimes, weeds, salinity and mining.

Conservation priorities

Reserves system is biased both in its geographical dispersal and coverage of vegetations. Access and management is limited on most reserves. Feral herbivores, feral predators, weeds need to be controlled throughout the region. There are considerable constraints on off-reserve conservation in the region. Its NRM priority is high.

Nationally important wetlands

Two wetlands of national significance are present, Thundelarra Lignum Swamp (currently in good condition) and Wagga Wagga Salt Lake (currently in fair condition). Their trend is unknown. Threatening processes that affect wetlands are:

- grazing and
- feral animals (goats, foxes, cats and rabbits).

Wetlands of regional significance

Lake Moore and Lake Monger are both significant for maintenance of ecological processes at a regional scale. Both are currently in good condition but the trend is unknown. Threatening processes include:

- grazing (goats and sheep) and
- hydrological changes due to degradation of surrounding vegetation associations, increasing runoff and siltation.

Riparian zone

The principal streams are the Murchison and the Greenough rivers. The Yalgoo region incorporates the Murchison/Gascoyne, Yarra Yarra and Ninghan Catchment areas. The river systems are only in fair condition and are forecast to decline. Threatening processes are:

- grazing pressure and
- feral animals (goats, foxes and rabbits).

Ecosystems at risk

There are no WA State legislated Threatened Ecological Communities in Yalgoo but 13 ecosystems are considered to be at risk. These are communities that are associated with water, chenopod or acacia shrublands, plant communities of unusually high diversity, an outcrop community and critical weight range mammal asssemblages. Most ecosystems at risk are threatened by:

- grazing,
- feral herbivores (goats and rabbits) and
- changed fire regimes.

Tallering Peak is threatened by mining, critical weight range mammals by feral predators and granite rockpools by siltation. All ecosystems at risk are in fair to poor condition and are declining, with the exceptions of Tallering Peak vegetation complexes (static) and mammals in the critical weight range, which are declining rapidly.

Species at risk

Fifty per cent of Yalgoo's original mammal fauna is now extinct in the region.

One plant species (*Eremophila viscida*) has been declared as critically endangered. Four plants, one bird and one reptile are endangered under State legislation. Two birds are listed as being vulnerable. Threatening processes to plants are:

- feral herbivores (particulary goats),
- grazing,
- changed fire regimes,
- clearing,
- fragmentation and
- mining.

The conditions and trends for all plants are unknown.

Threats affecting fauna (birds and reptiles) are:

- vegetation fragmentation,
- feral predators,
- grazing and
- poaching (in the case of Major Mitchell's and Carnaby's Cockatoos, nests are subject to poaching of eggs and young).

Endangered and vulnerable fauna are all in poor condition and declining.

Management responses

Reserve system

Toolonga Nature Reserve is a large reserve in the north and accounts for more than 80 per cent of CALM estate in the region.

Management actions are limited and access is extremely limited to most reserves. No fire breaks or fire access tracks are installed, and no feral animal control programs are in place. Management action is also limited at Kadji Kadji Timber Reserve. Again no fire beaks or fire access tracks have been installed, no feral animal control programs are in place (there is no knowledge of the extent of the problem) and a grazing lease is held over part of area.

All other areas under CALM jurisdiction are recently purchased pastoral lands (held as pastoral leases or unallocated Crown land) and management actions vary widely. Fire control measures have usually been put in place and numbers of feral herbivores and stock have been reduced. No feral predator control programs are in place.

There are 72 Beard vegetation associations in Yalgoo, 42 of which are not reserved or are poorly reserved. It is a high priority to reserve them, as well as the 10 ecosystems at risk. Even so, Yalgoo is rated as having a reservation class of four, resulting from the sheer size of Toolinna Nature Reserve. Clearly, the region's current reserve system is highly biased in terms of CAR criteria, even in terms of comprehensiveness, and should be no more than reservation class three.

Constraints on consolidating the reserve system are primarily competing land uses: pastoralism occupies more than 76 per cent of the region and there are considerable mining interests. Challenges to further reservation include:

- the cost of land,
- subsequent land management, and
- the difficulty in locating biodiversity values in most areas given the level of land degradation.

Off-reserve conservation for species and ecosystem recovery

The priority groups for off-reserve conservation include:

- birds (*Leipoa ocellata, Cacatua leadbeateri mollis, Calyptorhynchus latirostris*, and *Acanthiza iredalei iredalei*),
- reptiles (*Egernia stokesii badia*) and
- plants (*Acacia cerastes, A. unguicula, A. vassalii, Darwinia masonii, Hyalosperma stoveae, Lepidium merrallii, Melaleuca oldfieldii, Micromyrtus* sp. *Ninghan* (MG Corrick 9332), *Persoonia pentasticha, Sauropus* sp. *Woolgorong* (M Officer s.n. 10/8/94), *Stenanthemum poicilum*, and *Eucalyptus crucis* subsp. *praecipua*).

Recovery plans have been written for these birds and reptiles, but not for any plants in the bioregion.

A number of actions need to be taken to prevent further decline of species and ecosystems, including:

- landscape-wide habitat retention,
- fox and cat control,
- reduced grazing pressure (fencing of sensitive areas, especially where there are large goat populations),
- further research on habitat requirements for many species,
- weed control,
- investigation of optimal fire regimes and
- the reintroduction of some species to previous areas of habitat.

Significant off-reserve effort is required, despite resource constraints and limited community capacity.

Integrated natural resource management (NRM)

Existing initiatives are:

- institutional reform through the Gascoyne-Murchison Strategy (the purchase of leases for the conservation estate),
- threat abatement planning (vegetation management plans, pest management),
- industry codes of practice relating to pastoral, mining and exploration activities,
- environmental management systems and ecological sustainable product marketing,
- integration with property management planning,
- catchment planning and
- Landcare through Land Conservation District Committees.

Opportunities for NRM include:

- duty of care legislation for leasehold and other lands,
- institutional reform (rural reconstruction, industry reconstruction, new tenure and management arrangements),
- planning opportunities with local government,
- a National Action Plan for water quality and salinity, and
- supporting pastoralists as they identify and implement ecologically sustainable practices.

Constraints are substantial (rank = 1). Under land administration legislation, pastoral leases can be required to maintain stocking levels that may degrade conservation values. Gazetting of new reserves is limited by mining leases and tenements.

Major data gaps and research priorities

The highest priority data gaps in the bioregion are:

- the lack of environmental maps at better than 1: 250,000 scale,
- survey data on the region's flora and fauna distributions and population sizes,
- information on the habitat requirements for many organisms, and
- quantitative data on the effects of feral animals and weeds, hydrological changes and current fire regimes, particularly on wetland systems and other ecosystems low in the landscape.