



gondwana link

FITZ-STIRLING LEAFLET 4

Mallet and moort woodlands

Gondwana Link groups have developed a plan for the section of Gondwana Link between the Fitzgerald River and Stirling Range National Parks, or what we call the Fitz-Stirling section. This identifies several targets for protection and restoration, each of which is described in a separate leaflet in this series. A short summary of the plan is also available.

These targets are not the only systems or species that are important in this landscape, but by concentrating on the chosen targets we believe we can most effectively improve the ecological health of the Fitz-Stirling area.

Our 6 targets are:

- creeks
- proteaceous rich communities
- tammar & black-gloved wallabies
- **mallet and moort woodlands**
- flat-topped yate woodlands
- freshwater systems



Eucalyptus platypus subsp platypus is the most common moort in the Fitz-Stirling area and generally has creamy white flowers, usually during summer. Photo P Deegan.

WHAT ARE MALLET AND MOORT WOODLANDS?

The terms mallet and moort (or marlock) are Noongar words that describe certain eucalypts with no lignotuber and which therefore, unlike mallee species, only reproduce from seed and grow with a single main stem. Moorts tend to grow in pure stands and have rounded leaves and strap-like, down-turned flower stems or peduncles. Within the Fitz-Stirling area moorts include *Eucalyptus platypus subsp platypus* (common moort) and the very restricted *E. vesiculosa* (Corackerup moort which only grows in small patches from Norman Road to near the bottom of Monjebup Rd and on adjoining lands). Other moorts that are found closer to the coast include *E. platypus subsp congregata* and *E. nutans*. Moort woodlands are generally found on hard, clayey soil but the coastal species can also occur on sandier soil.

Mature moort woodlands often grow in single species stands with few other species growing within them. (See photos below). This could be due to alleopathic effects (chemical inhibition of other plants), or strong competition for water, or a combination of the two.



Corackerup moort (L) occurs in a very restricted area and has red flowers, usually during winter. Photo A Keesing.



Mallets often grow on the slopes of breakaways. Photo A Keesing.

Few animals appear to be completely dependent on moort woodlands. Some species, including the threatened red-tailed phascogale, the tiny pygmy possum and owllet nightjars, make good use of the small hollows that form once a moort stand is 30-40 years old. Signs of echidna are often found as they dig into termite and ant galleries for a feed. Moort flowers provide a source of nectar and pollen for a wide variety of honeyeaters. Mallets are also single stemmed and also occur in more or less pure stands. They are generally taller and more open than moorts, with steeply angled branches rather than the leafy spreading branches of the moorts (though Corackerup moort does tend to also grow in an upright form). Mallet woodlands in the Fitz-Stirling consist mainly of *Eucalyptus astringens subsp redacta* and occur on a variety of soils often in association with the slopes of breakaways and associated hills. They generally have a more diverse understorey than moort woodlands. Some are quite restricted in occurrence. For example, the endemic mallet *E. melanophitra* is only found within the Fitz-Stirling area, from the top end of Peniup Creek to just south of Chillinup, while *E. arborella* has a very small occurrence on Monjebup reserve, and only a few small populations just east of Fitz-Stirling. Very little research has been carried out on the fauna and invertebrate life of mallet or moort woodlands.

WHY ARE MALLET AND MOORT WOODLANDS A CONSERVATION TARGET?

These woodlands have a specific susceptibility to fire as they are obligate seeders. This means the adult trees are killed by fire and they only regenerate from seed released from the canopy after a fire. This renders these woodlands especially vulnerable to frequent fires that occur before the young trees have had time to grow and set the seed that enables them to survive in an area. The ideal interval between fires for the Fitz-Stirling mallet and moort woodlands is unknown and further research is being carried out that will guide fire management to ensure their survival.

All moort and mallet woodlands are restricted in their extent, but the short-range endemic species, *E. vesiculosa*, *E. melanophitra* and *E. arborella*, are especially important because of their very small and localised populations.

THREATS

The main threat is from fires that are too frequent or intense to allow regeneration by seed.

WHAT NEEDS TO BE DONE?

- Mallet and moort woodlands need to be:
- Mapped accurately so that their real current extent is known and fire age can be determined
 - Protected from fire until sufficient seed is set
 - Included in restoration and other plantings (Greening Australia WA's research has shown that mallets and moorts can sequester significant amounts of carbon. Including these species in well-designed restoration work can give a great biodiversity benefit and earn income through carbon off-sets.)

WHAT IS HAPPENING THROUGH GONDWANA LINK



Native revegetation including moort.

We are currently mapping the woodlands extent and have commenced monitoring of the condition of some stands. We are also collating information on previous fires in the area – their extent, season they occurred and when they were – so that we can work out the age of different stands and the impact of different fire intensities and intervals. Mallet and moort species are included in the plantings on most of the properties that are owned by Greening Australia and Bush Heritage Australia and in other revegetation projects with landowners in the area.

Gondwana Link is one of the most ambitious ecological programs in Australia. A wide range of groups are collaborating to protect, manage and restore bushland in a 1000 kilometre-long pathway, from the wet forests of Australia's south west corner to the woodlands and mallee bordering the Nullarbor plain.

Fitz-Stirling section of Gondwana Link sits between the Stirling Range and Fitzgerald River National Parks.

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