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Managing biodiversity

Biodiversity is the variety of all living things – the different plants, animals and micro-organisms, the genetic information they contain and the ecosystems they form.

A key requirement of sustainably managing Western Australia's South West forests is ensuring the protection of biological diversity, including threatened species of flora and fauna and their habitat.

The Forest Management Plan (FMP) sets three scales of management to achieve this:

- whole of forest;
- landscape; and
- operational.

Whole of forest level

At the whole of forest level, large areas of forest are set aside in reserves which are unavailable for timber harvesting.

Under the 2014–2023 FMP, more than 1.4 million hectares or 62 per cent of forest vested in the Conservation Commission is protected in national parks, conservation parks, nature reserves and other reserves.¹ This is in excess of the national standard for biodiversity protection.

This system of reserves ensures that flora and fauna across a wide range of ecosystems are represented and conserved.



Trees which contain hollows suitable for nesting are marked with a 'H' to identify them as habitat trees. Under the 2014–2023 FMP, the Forest Products Commission is required to retain 11 to 13 habitat and potential habitat trees per hectare. Further, additional large marri trees are required to be protected.

1. Appendix 6 - Conservation Commission of Western Australia. 2013. Forest Management Plan 2014–2023. Conservation Commission of Western Australia, Perth.

Did you know?

Pest animals such as foxes and cats, land clearing and urban expansion are the main threats to native flora and fauna in Western Australia.

Landscape level

At the landscape level, in addition to national parks and reserves, other areas are also protected from harvesting. For example:

- Fauna habitat zones ensure species dependent on undisturbed mature forest, are maintained within an area.
- Buffer zones along rivers, creeks and other hydrological features protect our water quality.
- Diverse ecotype zones – which are important for biodiversity conservation and include rocky outcrops, wetlands, sedge and herb vegetation – are demarcated out of the area to be harvested and are protected from disturbance.
- Buffer zones around rare flora or endangered fauna habitat safeguard delicate communities.
- All 'patches' of old-growth forest over two hectares are excluded from timber harvesting.

Operations level

At the operational level, further protection measures are put in place to protect biodiversity and limit the extent of disturbance from operations. For example:

- Habitat trees and logs with hollows are retained to ensure birds and other animals have sufficient places to live and nest in the future.
- Surveys are undertaken to locate patches of old-growth forests not already identified on maps.
- Surveys are undertaken to identify the presence of significant flora and fauna.





Regrowth karri forest – Harvesting occurs on a rotational basis in patches throughout the South West of Western Australia. The different aged patches create a mosaic of forests at different stages of growth.

Scientific monitoring supports current forest management practices

FORESTCHECK, a long-term scientific study, has given Western Australian native timber harvesting and silviculture practices in the South West jarrah forests a favourable report card in conserving biodiversity.

Biodiversity elements sampled included fungi, flowering plants, ferns, insects, birds, mammals and reptiles. In addition, measurements of forest structure (species and age), number of trees regenerated, leaf and soil nutrients, amount of leaf litter and coarse wood debris and degree of soil disturbance and compaction are undertaken.

The key findings are:

- Most species groups in the jarrah forest are resilient to the disturbance from timber harvesting.
- Recently disturbed forest is rich in biodiversity.
- Some species are favoured by disturbance.
- After 40 years, there is no detectable difference in species richness between harvested and non-harvested forest.

The biodiversity present in our regrowth forests today highlights the fact that species do survive and return following timber harvesting.

Water

Forest ecosystems, including the fauna and flora which live within them, rely heavily on water supply and quality through the ambient rainfall and ground flows.

Buffer zones around surface water features, such as streams and dams, help protect water quality – which is essential for dependent fauna and flora species as well as water for human use.

Selectively harvesting trees (thinning) along with other silvicultural measures can also assist in increasing the flow of water to surface and ground water reservoirs in extended periods of low rainfall.

On-going biodiversity management

Surveys and monitoring by the Department of Parks and Wildlife as well as studies such as FORESTCHECK, all contribute to the knowledge of threatened species distribution patterns and habitat requirements. This knowledge is used to improve on-going biodiversity management in Western Australia.

Following harvesting operations, the Forest Products Commission regenerates the forest to ensure fauna habitats are maintained and new trees grow back to sustain our forests for the future.

