

Sensitive Vegetation in the Northern Territory

Old-Growth Forest

It's all about tree hollows

The term old-growth forest is typically associated with the tall damp forests of the southern states, featuring massive 400-500 year old trees. In the Territory there are trees and forests that may be 350 years old or more, and these trees and forests are considered to be old-growth.

These old-growth forests are hot spots for biodiversity because they have lots of tree hollows, compared to younger stands of trees.

How old is that tree?

The age of the tree may be broadly determined from the diameter of its trunk - the thicker the trunk the older the tree.

For example, eucalypts with a trunk diameter of 30 cm would typically be between 100 and 200 years old; eucalypts with a diameter of 40 cm would be between 133 and 266 years old; and eucalypts with a diameter of 50 cm would be between 167 and 333 years old.

A Top End eucalypt forest is considered an old-growth forest if it has either:

- 5 or more eucalypt stems greater than 50 cm diameter per hectare, and/or
- 30 or more eucalypt stems greater than 40 cm diameter per hectare

Currently, the only certain way to classify and map "old-growth" is through on-ground measurements of the density of large trees.

Where can we find old-growth forests?

Tall eucalypt open forests, typically dominated by Darwin Stringybark *Eucalyptus tetradonta* and Darwin Woollybutt *E. miniata*, are restricted to the higher rainfall areas of the Top End and typically occur on deep sandy and loam soils.

As soils become shallower, and in areas of lower rainfall, these forests decline in stature and canopy cover, and change in composition, grading into the much more extensive eucalypt woodlands.

Most of the northern half of the Territory is

cloaked in a woodland of eucalypt trees, with an understorey of perennial and annual grasses. This grassy woodland is often referred to as "tropical savanna". Old-growth forest occurs in the tall eucalypt open forests and the tropical savanna of the Territory.



Darwin Woollybutt

Why is old-growth forest significant?

Tree hollows are considered to be a key resource for a range of animals, including cockatoos, owls, bats, sugar gliders, tree frogs and tree goannas to name just a few.

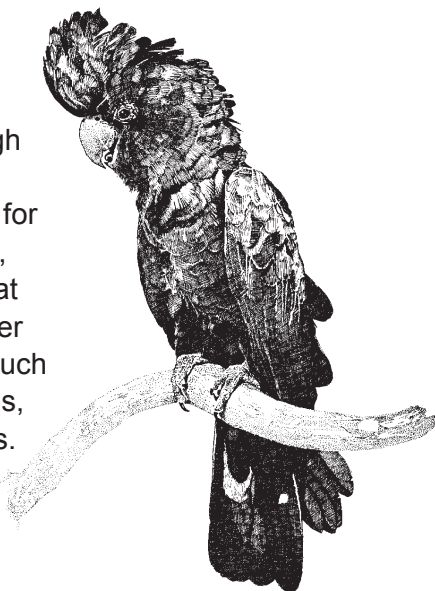
In Australia, approximately 40% of mammals and 20% of birds are dependent on hollows. This is consistent with studies done in the Territory, which found 40% of mammals, 18% of birds, 20% of reptiles and 13% of frog species use tree hollows.

Tree hollows are an extremely important resource for animals for roosting and nesting. At least six Top End threatened species are dependent on tree hollows for nesting and/or roosting (masked owl, gouldian finch, brush-tailed rabbit-rat, golden-backed tree-rat, northern brush-tailed phascogale, bare-rumped sheath-tail bat) and another (northern quoll) uses hollows occasionally.



Tree hollows are an important resource for nesting and roosting

The conservation of forests with a high incidence of tree hollow is important for dependant species, especially those that depend on the larger and rarer hollows such as parrots, possums, cockatoos and owls. Only trees with a diameter at breast height larger than 50 cm will contain hollows large enough for these species. This size tree is not common.



Black cockatoos need tree hollows for nesting and roosting

Threats to old-growth forests

Cyclone - The location of old-growth forests may move in time. An old-growth forest felled by cyclone is no longer an old-growth forest, and its natural regrowth may not reach old-growth status for one or more centuries. Conversely, a forest that does not currently meet old-growth criteria may eventually become one with lack of disturbance.

Fire - Fire is a frequent recurring event, and changes in the fire regime since European settlement have led to some changes in plant and animal communities.

Exotic grasses, particularly gamba grass and mission grass, have invaded many areas of forest, and the large fuel load that they provide leads to more extensive, more intense, and more destructive fires.

Feral Animals - Non-native animals are widespread, including buffalo, pig, horse, big-headed ants, and European honey-bees (these may take over hollows from native animals).

Horticulture and forestry - The eucalypt open forests typically occur on deep well-drained soils, these environments are sought by horticulture and forestry. Increasing amounts of eucalypt open forests have been cleared for mango and other fruit crops around Darwin, and for plantation forestry on the Tiwi Islands.

Given the time it takes and the obstacles endured to develop old-growth forests with tree hollows, we should consider the long-term consequences of losing this habitat: once gone, they are unlikely to come back for a long time.

What can we do to conserve old-growth forests?

You can make a difference by:

- Spreading the word about the importance of old-growth forests in the Territory. They have tree hollows which provide important habitat for many animals.
- Keeping big trees on your property.
- Carrying out prescribed burning to prevent frequent and intense fires.
- Managing weeds, such as Gamba and Mission grass, to reduce fuel load in old-growth forest areas.
- Controlling feral animals, including the European honey-bee.

References and Further Reading

Land Clearing Guidelines

nt.gov.au/property/land-clearing/apply-to-clear-freehold-land

Sites of Conservation Significance

nt.gov.au/environment/environment-data-maps/important-biodiversity-conservation-sites/conservation-significance-list

Threatened Species

denr.nt.gov.au/about/flora-and-fauna-division

Northern Territory Planning Scheme

nt.gov.au/property/building-and-development/northern-territory-planning-scheme

Other Fact Sheets in this series

Monsoon Rainforest

Sandsheet Heath

Mangrove Forest

Riparian Vegetation

Further Information

Department of Environment and Natural Resources

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nt.gov.au/environment/soil-land-vegetation/native-vegetation

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denr.nt.gov.au/about/flora-and-fauna-division