

Conservation Management Notes

Wildlife on your property

Assessing wildlife habitat

This note is designed to help landholders identify the aspects of their property that may be important to native animals.

Habitat means those parts of the environment (both natural and human-made) that native flora and fauna require for different stages of their life cycle, such as feeding, roosting, migration, nesting and the rearing of young. Different habitat components may be needed for each of these stages, and can be provided by living parts of the environment (e.g. trees) and non-living parts (e.g. rocks and fallen timber).

Habitat character and quality largely determine the type and number of animals that use the area, and whether they will survive in the long term. The loss of habitat is the major cause of the decline and extinction of native fauna species.

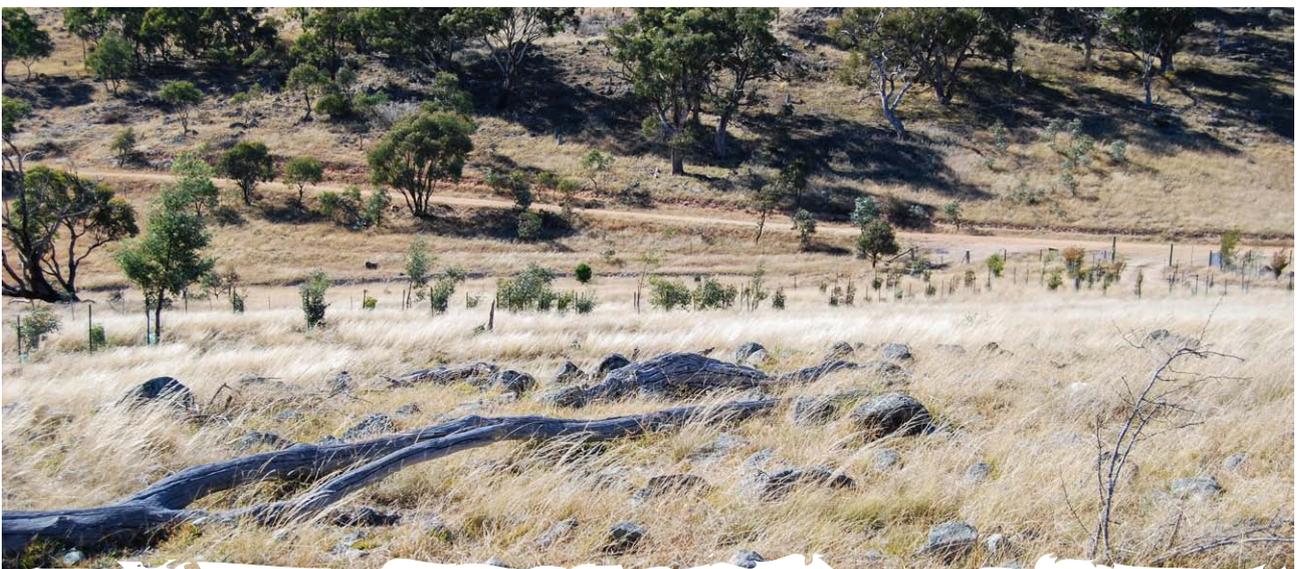
When managing a property for conservation, it is necessary to understand how different animal species use different landscape features at different times, and how habitat can be maintained and improved. Many landowners enjoy watching wildlife, and this can provide a unique insight into how features of a particular area are being used.

Large, continuous areas of healthy native vegetation provide the best habitat. But there is such a variety of native animals, and ways they interact with the landscape, that some will find a use for even the most unlikely places — and in an extensively cleared area, any habitat (e.g. single trees, or gardens) is valuable.

As well as assessing the property it is important to look at how it sits in the landscape (Google Earth or aerial photos are a good start). If it is connected to, or close to, other large areas of habitat, it will be used by more animals than if it is an island of vegetation in a mostly cleared landscape.

The value of a property's habitat, on a broader scale, will be greater if it:

- forms part of a corridor connecting two or more large areas of native vegetation
- includes habitats that have become rare (such as woodlands with understorey)
- supports one or more of the many native animals that are now considered threatened (such as the Booroolong frog, koala or glossy black-cockatoo).



A range of habitat assets are visible in this grazed woodland landscape: fallen timber, rocks, native grasses and other groundlayer plants, unploughed areas likely to have good soil structure, and native trees of varying ages: Photo: Jackie Stol

Habitat Features

A property with a variety of these habitat features is likely to support many native animals. A greater diversity of vegetation types and landscapes (hilltops, creeks, floodplains) and features, means a greater range of species can use the area. However, not all landscapes will have all these features, for example permanent water is scarce in rangelands, alluvial plains may not have rocky outcrops, and rainforests have few grasses.

The value of any of these features for wildlife increases if they are within, or close to, healthy native vegetation. The italic text describes particularly useful characteristics.

Native vegetation is generally the most important habitat feature on any property.

Large areas (particularly over 10 hectares), in good health (few weeds, with a diverse range of native species present in various levels, e.g. groundcover, shrubs, trees).

Large old trees have greater habitat value than younger, smaller trees because they provide:

- most of the nesting hollows (trees generally need to be more than 100 years old to produce hollows)
- more crevices, nesting and perching sites
- more reliable sources of nectar and fruit
- a large surface area of bark
- much of the fallen timber and leaf litter for ground layer habitats.

Hollows and fissures in trees, both alive and dead, are used by birds, bats, frogs, reptiles and arboreal (tree-dwelling) mammals for roosting, protection and nesting.

Hollows of different sizes and depths, with different entrance sizes. Large hollows with small entrances are particularly valuable.

Dead standing trees provide perching, nesting and foraging sites.

Large with many hollows and crevices.

Wooden fence posts and stumps provide foraging, nesting, resting, perching or basking habitats for birds and reptiles.

Fallen timber, is extremely important — a wide range of animals (including the echidna, bush stone curlew, many reptiles, frogs and invertebrates) rely on patches of ground timber for foraging, nesting, resting, perching or basking habitats. In wetlands and waterways, fallen timber is used by fish, turtles, birds and many other animals.

Logs with hollows, logs of different size and different decomposition stages (e.g. including older, decayed timber with many holes), large areas of fallen timber (likely to be unploughed).

Grasses and other small plants, including native pastures, are important shelter and feeding areas for reptiles, frogs, birds, mammals and invertebrates. Large tussocks and ungrazed areas are essential for quail and bettongs.

High diversity of native species with few weeds. Including grazing sensitive species (these areas usually have a history of low fertiliser use and low grazing pressure).

Variety or patchiness – tall tussocks, sprawling tussocks, closely cropped areas, some bare ground between tussocks.

Shrubs offer feeding, basking, nesting, resting and roosting areas for insects, birds, mammals, lizards and frogs.

Wattles are particularly important for many animals (e.g. sugar gliders eat wattle exudate in winter when other food is scarce).

Patches of dense spiky vegetation provide nesting, roosting and foraging areas, particularly for small birds, with some protection from predators.

Flowering trees and shrubs. Nectar and pollen are key food resources for birds, insects, flying foxes and arboreal mammals.

A number of different species, providing fruit in different seasons.

Tangles of vines in rainforest and moist eucalypt forest, provide nesting sites for birds and common ringtail possums.



Succulent fruiting tree, shrub and vine species provide food for birds, mammals (such as flying foxes), and insects.

A number of different species, providing fruit in different seasons (e.g. for fruit eating pigeons).

Trees with different bark types (such as gum, ironbark, stringy, box or simply rough or smooth) provide homes and foraging areas for diverse invertebrates, small reptiles and birds — also nest building material.

Leaves of eucalypts and other species are food sources for mammals and invertebrates. Different species have different foliage nutrients and there are differences between flushes of new growth and mature foliage.

Rivers, streams, wetlands or dams allow the property to be used by aquatic species such as fish, yabbies, small invertebrates etc, as well as many birds, bats, frogs, and reptiles.

Restricted stock access, aquatic plants, fallen timber submerged and above the surface, vegetated banks, treed areas close by, subject to natural cycles of wetting and drying.

Swamps, bogs and marshes are particularly useful for invertebrates, birds, frogs and bats.

Restricted stock access, native vegetation, subject to natural cycles of wetting and drying.

Ephemeral wetlands support particular species of frogs, or visiting waterbirds etc.

Restricted stock access, native vegetation, subject to natural cycles of wetting and drying.

Dams vary greatly in habitat quality, but can be valuable for a range of animals including, birds, bats, frogs, yabbies and other invertebrates.

Restricted stock access, vegetated banks, shallow areas, rocks and logs in or adjacent.

Vegetated areas adjacent to waterways and wetlands. These areas are often moister and more fertile than other parts of the property, their productivity makes them important for many animals, and they can provide a refuge in dry times.

Leaf litter or soil crusts support fungi, bacteria, invertebrates, small reptiles, mammals and birds. Cover and depth varies with climatic conditions and time since fire.

Bare patches of soil, although they should not generally be extensive, are relied on by many animals, and allow for seedling recruitment. They may occur between grass tussocks, or exist temporarily after fire, drought or localised disturbance such as animal digging.

Healthy soil hosts a diverse range of small organisms: fungi, bacteria, small invertebrates, also burrowing mammals, reptiles, frogs and larger invertebrates such as spiders.

Not compacted, or ploughed, not chemically altered (e.g. fertilised, saline or acid), with a cover of leaf litter or a soil crust (lichen, moss and liverwort).

Seasonal cracks in the soil. Cracking clays are important for some fauna, such as reptiles and planigales (small marsupial carnivores). These cracks vary from relatively shallow (30 cm) to quite deep (more than 2 m), and provide shelter from extremes of temperature.

Rocky outcrops and surface rocks are very important basking, sheltering and feeding sites — particularly for reptiles, but also birds, invertebrates and frogs etc. Rocky areas also tend to have good native vegetation as they have not been cultivated or fertilised.

Piles of rock, a range of sizes with spaces between and under, both sun exposed and shaded.

Large geological features such as cliffs, ledges, caves and overhangs strongly influence the presence and/or breeding of many species, such as some microbats.

A mix of sun exposed and shaded features, with cracks, crevices and chambers.

Rubbish, such as solid metal objects, timber or sheets of iron, can be a vital substitute for fallen timber and rock, and is often used by reptiles, frogs and invertebrates

Crevices and chambers of various sizes, in sun and shade.

Old buildings, and stone walls with crevices, offer shelter and foraging for birds, bats, reptiles and insects.



Page 2 — Pink cockatoo, Photo: OEH. Old river red-gum, Photo: OEH/D Reynders. Bearded dragon, Photo: M Turton. Old, decayed timber, Photo: V Bear. Native pasture in mostly cleared woodland, Photo: OEH/L Brodie. Dense shrub layer in sandstone woodland, Photo: V Bear.

Page 3 — Lewins honeyeater eating native peach fruit, Photo: V Bear, Ephemeral wetland, Photo: OEH/Joel Winter. Golden ant on scribbly gum bark, Photo: V Bear. Lichens on the soil surface, Photo: V Bear. A bat roosting in an old building, Photo: M Turton. A rocky outcrop in rangeland, Photo: OEH.

Habitat in degraded areas

Even if native vegetation is degraded, it may still provide important habitat, and can be improved. For instance, many areas of native vegetation which are invaded by weeds or pasture grasses may have old, large trees with hollows which could be used by threatened species, such as superb parrots, for nesting.

Areas cleared of trees and shrubs may have an intact native grassy ground cover (perhaps being used as pasture) that is home to a range of native reptiles, birds, mammals and invertebrates.

Weeds themselves can provide valuable habitat. For example prickly weed shrubs can provide protection for small birds. It is important to retain this habitat while equivalent native habitat is being established.

Managing habitat

Following these basic principles for managing habitat can reduce the decline of native fauna species. Removal or modification of habitats may lead to local extinctions of native plants and animals.

First — retain existing habitat types

After assessing the range of habitat features on the property, consider how they can be retained in the long term, for instance:

- can areas of native vegetation be fenced so that grazing can be managed?
- if fertilisers, herbicides and pesticides are used — are areas of native vegetation and wetland protected?
- will current management, such as the grazing or fire regime, allow a native pasture to persist?
- if there are hollow-bearing trees on site, are there any younger trees regenerating that will replace the older trees when they die?
- if fallen timber or surface rocks must be moved (e.g. to allow ploughing) — can they be placed in an area where they won't be disturbed, such as a paddock corner or adjacent to native vegetation?
- can firewood be collected from a woodlot or other source, rather than dead standing trees or fallen timber?
- will areas currently unploughed remain unploughed?

Next — restore, expand and connect habitat

There are many ways to do this, but some important opportunities to consider are:

- can missing native vegetation be re-established along creek banks and around wetlands?
- if an area has large hollow-bearing trees and fallen logs, but no flowering understorey — could shrubs be replanted or encouraged to regenerate?
- can a patch of native vegetation be allowed to regenerate into adjacent cleared land, by fencing it along with some additional area (e.g. around a group of paddock trees and fallen timber), or leaving an unploughed buffer around it?
- can connectivity between patches of vegetation be increased by establishing corridors between them?

Useful references

Related Conservation Management Notes

- Watching and Surveying Wildlife
- Wildlife Corridors

Lindenmayer DB et al 2011, *What makes a good farm for wildlife?* CSIRO Publishing

Lindenmayer DB et al 2003, *Wildlife on farms — how to conserve native animals*, CSIRO Publishing

Dorrrough J, Stol J & McIntyre S 2008, *Biodiversity in the Paddock: a land managers guide*, Future Farm Industries CRC www.futurefarmcrc.com.au/documents/Biodiversity_in_the_Paddock.pdf

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