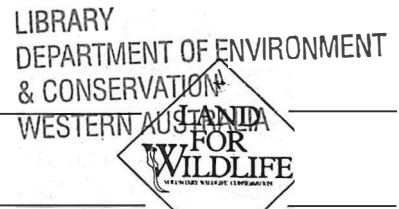


# How healthy is your bushland?



**Land for Wildlife Note No. 40**

**November 1996**

Key words: *Bushland restoration, bushland health, revegetation vegetation assessment.*

Area: *Statewide*  
 Author: *Stephen Platt, Ray Thomas*


## A self-guided assessment to recognising high quality wildlife habitat

Providing the best possible habitat for native wildlife on your property requires a good understanding of its living requirements. This understanding makes it possible to make informed judgements about what changes will improve the habitat areas you are managing.

Habitat condition is vital if the full natural range of species are to inhabit the area, to maintain its long-term health and for it to fully contribute to the value you get from your property.

So, how healthy is the habitat at present on your property? This information sheet provides an introduction to some important habitat components and is intended to prompt questions which are answered in more detail in other *Land for Wildlife* Notes.

The aim of habitat management for nature conservation is not only to maintain the species present in the habitat but also the processes that make the habitat function such as nutrient cycling, pollination and seedling establishment and its long term future in the landscape.

Whilst this Note won't tell you what to do about any problems identified, it can be used as a summary of the current situation of your remnant. The symbol  has been included to remind you to record actions you may wish to take to rectify any deficiencies. The term bushland is used to cover all native vegetation types.

It is preferable that you stand in or near your bushland whilst thinking about the contents of this information sheet.

### 1. WHAT SURROUNDING LANDSCAPE ?

The management activities carried out in surrounding areas will affect the quality of your habitat. For example, if the adjoining land is cleared and sown to pasture it is more likely that the habitat will be affected by edge effects, such as windthrow and weed invasion (an aerial photograph will help identify the surrounding features). Adjoining bush may act as a buffer or offer potential for vegetation corridors.

*Is your bush surrounded by:*

- cleared land/pasture or crop? .....
- weed sources? .....
- remnants of native vegetation? .....
- bush on most or all sides? .....
- a buffer against weed invasion, wind, etc? .....
- low in the catchment? (if low, may suffer from salinity, etc.) .....

	Remnant 1	Remnant 2	Remnant 3	Remnant 4
cleared land/pasture or crop? .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
weed sources? .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
remnants of native vegetation? .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
bush on most or all sides? .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
a buffer against weed invasion, wind, etc? .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
low in the catchment? (if low, may suffer from salinity, etc.) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**DATE OF ASSESSMENT:** \_\_\_\_\_

### 2. HOW LARGE?/HOW WELL CONNECTED?

Larger blocks of vegetation can harbour a wider range of species and are more resilient to external factors. Wildlife corridors can assist movement and act as habitat in themselves. Rehabilitating the surrounding area, creating buffer zones and corridors are potential corrective actions.

*Is your bushland:*

- 0-1 hectares? .....
- 1-5 hectares? .....
- Greater than 5 hectares? .....
- Connected to habitat >30ha by corridors wide enough to provide habitat in themselves? .....

0-1 hectares? .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1-5 hectares? .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Greater than 5 hectares? .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Connected to habitat >30ha by corridors wide enough to provide habitat in themselves? .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### 3. WHAT SHAPE ?/HOW MUCH EDGE?/HOW MUCH CORE HABITAT ?

Remnant blocks of vegetation with a circular shape are less likely to suffer disturbance from the surrounding landscape such as weed invasion, the effects of predators, and climatic extremes than narrow linear or irregular bush blocks. Circular shapes have less edge (see LFW Note 23). Also, shy species require the safer, more stable conditions deep inside the bush.

*Is your bushland:*

- Circular in shape? .....
- Rectangular in shape? .....
- Irregular in shape with many indents? .....

Circular in shape? .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rectangular in shape? .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Irregular in shape with many indents? .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



**4. HOW NATURAL ?**

Most vegetation types consist of several 'storeys' or layers. Often, wildlife species make use of resources from several of these layers. For example, using tree hollows for nesting whilst also needing food resources from shrubs or grasses nearer the ground. Note that vegetation types, such as grasslands and heaths, are naturally treeless and require management to maintain the diversity of grasses and many small forbs present. The presence of cryptogamic mats (lichen and moss) depends on the vegetation type. Shrubs can be an indicator of habitat health (e.g. no shrubs - grazing too heavy, only spiny shrubs - grazing too heavy, many shrubs - a good sign). Management actions could include restricting grazing animals, revegetation or use of fire to promote regeneration. (Refer to LFW Notes 32 & 13).

**4a Indigenous (local native) vegetation layers present include:**

	Remnant 1	Remnant 2	Remnant 3	Remnant 4
Tree canopy .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tall shrubs .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low shrubs, ferns, etc. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Native grasses .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wildflowers .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ground layer of leaves, twigs and branches .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Soil moss and lichen layer present .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**4b Is the vegetation replacing itself?**

Long-lived vegetation may appear healthy but can in fact be living on borrowed time if seedlings are not surviving to replace parent plants. On the other hand, if flowers are setting seed and seedlings appearing, it is a good indicator of many ecosystem processes still operating (e.g. pollinators must be present). Look for seedlings in autumn or spring. See LFW Note 22 for monitoring suggestions.

*Natural regeneration is occurring in:*

• tree species .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• shrubby species .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• native ground covers .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**4c Evidence of ecological function**

• seed set .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• pollination .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• regeneration (post fire) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• variety of native invertebrates present .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**4d Habitat features present/species diversity**

A wider range of habitat features or different types of vegetation will provide for a greater range of species. For example, if suitable tree hollows are present, hollow-nesting species may remain to roost or breed rather than just pass through. Of course, one bit of bush may not have all the features listed here. A variety of vegetation densities will allow a greater range of species to find food and nesting sites. Naturally fertile areas may support more wildlife. Compare your bush with similar types in your district.

*Habitat components include:*

• tree hollows for nesting .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• hollow logs for ground dwelling animals .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• native grasses .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• rocky areas (for lizards, etc) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• big old trees (see LFW Note 18) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• native mistletoes .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• flowering plants producing nectar throughout year .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• a variety of habitat types (e.g. woodland/heathland, creekline/slope) ..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• a variety of vegetation densities .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• some areas of naturally high fertility (e.g. deep, rich soils) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• stream systems .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• wetland systems .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• unusual habitat type(s) for the area .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**5. DISTURBANCES/THREATS**

Environmental influences like soil disturbance, grazing, fire, weed invasion, isolation, and feral animals influence vegetation and wildlife.

- Are rare/locally uncommon species stable/increasing? .....

**5a evidence of feral predators** (Feral animals can have severe effects on native animal populations through directly eating wildlife, competing for food supplies or destroying habitat.)

*Is your habitat affected by:*

- fox? (look for scats) .....
- cat (domestic or feral)? (sand patches can be used to detect tracks) ....
- dog? .....

**5b evidence of competitors** (see *Land for Wildlife Notes 24, 25, 31*).

- many weed species present .....
- rabbits .....
- livestock grazing .....
- introduced honey bees (occupying tree hollows/taking nectar) .....
- other introduced grazing animals (e.g. goats, pigs, etc.) .....

**5c evidence of unbalanced ecosystems**

- tree dieback occurring (see LFW Note 34) .....
- excessive mistletoe infestation (see LFW Note 26) .....     See LFW Note 34.
- repeated excessive defoliation by insects .....
- loss of nitrogen fixing wattles and peas .....
- evidence of excessive disease (e.g. such as wombat mange) .....
- wildlife populations declining .....

**5d other threats**

- fertilizer drift from adjacent paddocks .....
- soil disturbance/compaction .....
- disturbance by passers-by/machinery .....
- nutrient input from animal faeces, sewage, runoff from adjacent land.
- garden waste dumping .....
- earthworks, stock camps .....

**6. MANAGEMENT HISTORY ?**

Previous management sets today's scene and can limit your options. For example, a prior history of logging may mean that few very large trees with hollows remain. Coppiced, thin trees lacking hollows may indicate prior firewood collection. Single aged plants indicate a prior disturbance at one point in time.

- evidence of unsustainable livestock grazing .....
- *or* livestock excluded by fencing for many years .....
- abnormal fire regime .....
- *or* natural fire regime maintained .....
- evidence of soil disturbance (e.g. very weedy patches present) .....
- *or* soil profiles intact .....
- evidence of extensive firewood collection .....
- drainage alterations to wetlands/streamflows .....

Record what you know of the management history (attach additional information):

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**7. FUTURE PLANS**

Having completed this general assessment, consider what improvements to the habitat you can practically achieve. They might include putting up a fence, planning to put in a vegetation corridor or start a pest control program. Your local *Land for Wildlife* extension officer is available to help you. Revise your actions and add to your activities calendar/diary.

**Intended management actions (attach additional information):**

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**Further reading:**

Anon. *How good is that patch of bush?* Information sheet No. 4. Australian Nature Conservation Agency & NSW National Parks and Wildlife Service.

Keane, J., *Bushland restoration: Action for the environment by the community*. Mt. Lofty Ranges Conservation group, Aldgate, S.A. All *Land for Wildlife* Notes.

Prepared by Stephen Platt and Ray Thomas, October 1996.

# EXAMPLES OF HABITAT HEALTH

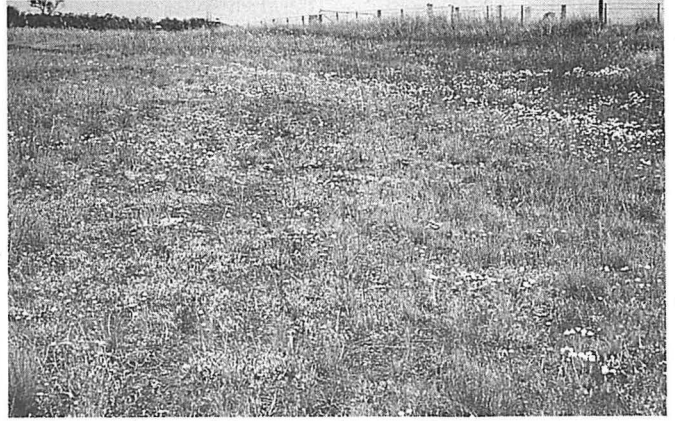
PHOTO: J. ROSS, TRUGANINA



## Unhealthy grassland remnant

Note how many of the intertussock wildflowers are missing. Weeds are often very common, making up 30% or more of the species. N.B. Rare plant present.

PHOTO: V. CRAIGIE, GLENTHOMPSON



## Healthy grassland remnant

Generally tussocky with plenty of spaces occupied by wildflowers and rarely some small shrubs.

PHOTO: F. MACLENNAN, GIFFORD



## Unhealthy forest and woodland remnants

Leaf and twig layer is missing. Understorey shrubs and grasses have been removed by grazing. Damage to tree bark by livestock is evident. Little or no regeneration. Surrounded by open paddocks. Dieback is usually evident. No vegetation corridors to nearby remnants.

PHOTO: S. MANN, NORTH CENTRAL VIC.



## Healthy woodland remnant

Open branched trees with numerous scattered shrubs and forbs. Leaf and bark layer present. Old trees with hollows retained.

PHOTO: K. BLOOD, PT. NEPEAN N.P.



## Unhealthy coastal vegetation

A weed, Bridal Creeper, has invaded this stand of paperbarks. Death of the canopy allows light to enter. Isolated stands can be attacked by salt-laden winds.

PHOTO: L. AHERN, STEELS CREEK



## Healthy forest remnant

Trees with interlocking branches. A lack of coppiced trees indicates that the area is unlikely to have been harvested for firewood. Trees with hollows. Scattered shrubs and forbs. Evidence of ground-dwelling species.

PHOTO: K. BLOOD, MILLER'S LANDING, WILSON'S PROMONTORY



## High quality coastal vegetation

Ground layer of bracken fern and sedges intact. No evidence of deaths due to the fungus *Phytophthora*. Part of an extensive tract of connected vegetation.