Wildlife management considerations on private land - a summary

Land for Wildlife Note No. 4 *June 1990*

Key words: Wildlife-causes of decline, Threats, Threatening processes, Endanger, Extinction
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Area: Statewide
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Introduction

Why are our native wildlife species disappearing? Understanding the causes for the decline in wildlife populations can assist us to change the way in which we manage land so that we make a positive contribution to the conservation of wildlife whilst at the same time looking at better ways of managing the land for sustainable production without harmful side-effects. Wildlife conservation and wise land use are compatible and can be complementary. For example, encouraging birds and bats can reduce pasture insects, thereby improving overall productivity. Without changing the way we manage private land the scenario of decline and extinction of wildlife species will continue.

This Note explores some reasons for the decline of wildlife populations on private land in Victoria. The emphasis is on providing examples of alternative management that would reduce the effects of each 'threatening process'. These might be viewed as goals to work toward in managing your property within your own constraints and may be applicable to areas designated for management as wildlife habitat within the range of management demands for the full property. *Management strategies compatible with maintaining the quality of wildlife habitat are shown in italics.* These strategies should be incorporated into property management plans wherever possible.

The principle causes for the decline in wildlife populations are 1. Habitat destruction, 2. Habitat change and degradation, 3. Introduced animal competitors and predators.

How to maintain wildlife habitat - a list of threatening processes.

CLEARING/HABITAT REMOVAL. Removal of habitat is obviously disastrous for wildlife as all food, shelter and breeding sites are completely removed. Erosion & salinity are other problems associated with clearing.
Avoid clearing wherever possible. Ensure that at least some mature forest remains on the property because of the time involved to replace it. (Tree hollows may take between 100 - 300 years to form).

ISOLATION AND FRAGMENTATION of wildlife habitat by clearing limits the movement of wildlife species and can result in patches of habitat with smaller populations of a species in each patch. Such populations may be less viable because of the limited resources and mates available, and can die out.
Habitat corridors along rivers, roads and between properties can reduce this threat.

BARRIERS such as river dams, roads and fences can restrict wildlife movement (refer to LFW Note No. 3).
Avoid creating barriers. Modify structures eg. place fish ladders beside dams, wombat gates in fences.

GRAZING animals (sheep, cows, goats, horses, rabbits, etc) may selectively remove young plants, reduce seed set by eating flowers and destroy cover used by many species of wildlife. Large animals can also compact the soil so that water cannot penetrate and microscopic soil plants and animals are killed. This can prevent new plants growing. The overall result is a major change in the structure and composition of vegetation which can be to the detriment of wildlife. Grazing can, in effect, be de facto clearing, due to lack of regeneration, if continuous over a long period.
Fencing off sensitive or special areas will provide protection. Some areas of natural vegetation are useful for summer grazing or drought fodder only and restricting stock access to non-sensitive times (e.g. after flowering and seed set) will reduce the impact of stock without completely closing off the area to production.

MOWING has much the same effect as grazing.
Avoid mowing in habitat areas, particularly when ground plants are flowering and setting seed.

INTRODUCED SPECIES compete with wildlife for resources and prey on wildlife (see predation). Non-native plants replace native ones and, in the process, change wildlife habitat, often to the detriment of the wildlife.
Avoid introducing non-native plants and animals. Control those that already are present in habitat areas.

WEEDS can replace local native species and invade native bushland, changing its structure and composition. They are assisted in doing this by soil disturbance (either mechanical or by introduced animals) and the application of fertilizers. Introduced plants (plants foreign to Australia or native but not naturally growing in your area) are generally less desirable for wildlife conservation because the local wildlife has not evolved to make use of them. Stock can spread weeds either in their faeces or through feed.
Avoid disturbance to natural bushland. Plan to control or remove weeds from wildlife habitat. Prevent stock grazing in sensitive or special areas.

PREDATION by introduced predators such as foxes, cats and dogs is a major threat to wildlife.
Control of foxes, feral cats and dogs and alternative management of your pets, such as restraining them at night, should be considered.

CHANGES TO THE SOIL
The return of nutrients to the soil through decay is vitally important to the health of vegetation. Soil microorganisms assist this process and improve the structure and composition of the soil for plants.
Allow fallen leaves, branches and logs to lie on the ground and rot. These also provide wildlife with shelters, food and cover when hunting. Fence off sensitive areas. Avoid soil contamination with residual chemicals that may be harmful to soil micro-organisms.

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SOIL EROSION removes fertile top soil and places it in streams, dams or lakes as sediment often destroying wildlife habitat along the way. Erosion can reduce the land's capacity for production. Sediment fouls fish habitat and water supplies.
Erosion prevention measures such as leaving steep areas covered in natural vegetation may be integrated with wildlife habitat. Stream banks are best surrounded by a natural vegetation buffer (20m is the recommended width).

SOIL COMPACTION (see grazing)
Excessive trampling by heavy animals, vehicles or people can compact soil so tightly that seeds are unable to germinate and small soil organisms cannot exist. It can cause a lack of regeneration of plants, just as can direct removal via grazing.
Avoid moving heavy vehicles about in native vegetation. See Grazing.

SOIL DISTURBANCE from cultivation, weeding, walking paths, vehicles, etc. Many weeds are suited to invading disturbed natural vegetation.
Plan to avoid this type of disturbance as much as possible. In particular, avoid soil disturbance in natural vegetation. This may have implications for vermin control techniques.

FERTILIZERS. Fertilizers promote the establishment of weeds in remnant vegetation. They can also be harmful to fish populations if washed into streams or dams, by promoting algal growth.
Use fertilizers wisely and in appropriate areas. Avoid applying fertilizers to native vegetation.

PESTICIDES can be harmful to wildlife by accumulating in the food chain. They may also be directly harmful to many species. The increased presence of insect- eating birds, bats and other animals in habitat managed for wildlife should reduce the need to use these chemicals which are also dangerous to human health. Soil organisms may also be killed.
Avoid using pesticides in habitat areas. Pesticides should not be used near to rivers as they can be harmful to fish. Wise use of pesticides is recommended and only where necessary.

FIRE is an essential part of the natural environment. At the same time it can be a threat to human safety. Many types of native vegetation require burning every so often to enable seeds to germinate and other processes to occur although not all plant communities will benefit from burning. For example, rainforest communities do not tolerate severe fires. The frequency, intensity and timing of fires are important. Without the changes brought about by fire, many species of wildlife that are adapted to use vegetation during a defined period following fire will die out.
Where the road reserve adjacent to the property contains native vegetation, plan to place firebreaks inside the fenceline rather than outside. The tillage will benefit your ground in any case. To maintain a healthy bushland, consider the benefits of a controlled 'natural' burn at frequencies similar to the natural regime. This activity will also reduce the fire carrying capacity during the fire season. Follow CFA fire prevention principles when determining where vegetation is located and when burning can take place. Imitating the natural fire regime wherever possible will maintain the integrity of the vegetation.

DISEASE/DIEBACK Disease can spread rapidly throughout vegetation and wildlife. Most natural populations will be able to survive the effects of disease. Contrary to this are examples of vegetation or wildlife under stress from significant changes to the environment which may result in dieback (refer to Campbell et al. 1988). In such cases, disease may irreparably destroy vegetation and wildlife.
Maintain the health of vegetation and wildlife by managing wildlife habitat similarly to the natural system for that vegetation type. Avoid major changes to natural vegetation. Do not introduce soil from other areas onto your property as it may contain new plant diseases. Propagate from seeds instead or use soil-sterilized nursery stock. Avoid isolating plants into small unprotected clumps.

ALTERED FLOOD REGIMES/ DRAINAGE OF WETLANDS: Floods play an important role in rejuvenating the soil, in creating habitat for waterbirds and providing areas for tadpoles and young fish to grow up. The management of wetlands on a property to permit flooding may need to be considered by all the landholders in the catchment and the local water authority. Flooding through irrigation can be detrimental to the soil and wildlife habitat because of the extensive areas covered and the frequency of these artificial 'floods'. The effects of salinity can also destroy wildlife habitat.
Allow wetlands to flood. Avoid drainage. A natural flood regime is desirable for wildlife.

ROCK REMOVAL. Rocks provide shelter for wildlife.
Rocks are an important part of wildlife habitat and should be left wherever possible. Loose rocks are particularly important.

WILDLIFE COLLECTING occurred indiscriminately in the past for the pet trade and overseas collectors. All wildlife is now protected in Victoria and may only be kept in captivity with an appropriate authorisation under the Wildlife Act 1975.
Make sure that illegal collecting is reported and encourage your family to appreciate wildlife in its natural environment.

DISTURBANCE. Many native species, especially ground-frequenting birds, will not establish if continually disturbed by dogs and cats. Disturbance by humans can also be a problem for some wildlife species. Feeding wildlife disturbs natural foraging activities and makes wildlife dependant on food supplies that are unreliable.
Control the activities of pets and observe wildlife cautiously. Avoid regular free-feeding of wildlife.

FIREWOOD COLLECTION. Many wildlife species (e.g. goannas, echidnas, tree frogs) require dead trees with hollows, fallen logs and litter (bark, twigs and leaves) as part of their habitat. Pole stands of production timber are generally not suitable for wildlife.
Plan firewood needs with these considerations in mind.

TIMBER HARVESTING: see soil disturbance & compaction, firewood collection.
Avoid harvesting in habitat areas by creating a woodlot or harvest selectively to avoid the removal of hollow-bearing trees and major forest disturbance.

Reference:
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Further reading:
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