

Wildlife Corridors

What are wildlife corridors?

A wildlife corridor is a link of wildlife habitat, generally native vegetation, which joins two or more larger areas of similar wildlife habitat. Corridors are critical for the maintenance of ecological processes including allowing for the movement of animals and the continuation of viable populations.

By providing landscape connections between larger areas of habitat, corridors enable migration, colonisation and interbreeding of plants and animals. Corridors can consist of a sequence of stepping stones across the landscape (discontinuous areas of habitat such as paddock trees, wetlands and roadside vegetation), continuous lineal strips of vegetation and habitat (such as riparian strips, ridge lines etc.), or they may be parts of a larger habitat area selected for its known or likely importance to local fauna.

Why are corridors important?

Habitat loss and fragmentation are the two main contributors to continuing biodiversity decline across the landscape. A holistic approach is required across both public and private lands to protect and manage natural ecosystems and ensure connectivity between remaining habitats.

When native vegetation is cleared, fragmented patches or islands are created. These patches may become increasingly cut-off from other areas of habitat resulting in many plant and animal species becoming isolated, especially when land between the patches is permanently altered for human activities. As these vegetation patches are reduced in size and become increasingly isolated, the on-going viability of ecosystems and individual populations of species within them is severely affected. This ultimately leads to a break down in ecological processes such as species migration, dispersal, recycling of nutrients,

pollination of plants and other natural functions required for ecosystem health. The likely result is severe biodiversity decline and local extinction of sensitive species.

Corridors play an extremely important role in the maintenance of biodiversity, but they can only partly compensate for the overall habitat loss produced by the fragmentation of the natural landscape. It is important, therefore, that vegetation remnants and vegetated corridors are maintained and enhanced as a network across all lands both private and public. In this way private landscapes can contribute to wider landscape conservation efforts by enhancing and linking existing reserves and conservation networks.



Aerial photograph showing the importance of remnants and corridors within a largely cleared landscape

Geoff Biddle

Corridor widths and design

As a general rule the wider the corridor the better. Wider corridors provide for greater diversity, have less impacts from adjoining land uses and associated edge effects (e.g. weeds, predators etc.) and provide habitat in their own right. Generally, wildlife corridors can be identified at 3 levels.

Regional Corridors

Regional corridors are primary landscape connections between larger important areas of habitat. They are generally substantial in width (> 500m) and provide not only for dispersal of individual species but act as



habitat in their own right for a range of species. Ecological principles indicate that ideally regional corridors should be at least twice the width of the average home range area of the animal species identified as potential users of the corridor. Regional corridors typically connect along major ecological gradients such as altitudinal and/or latitudinal migratory pathways (e.g. coast to hinterland and tablelands corridors).

Sub-regional Corridors

Sub-regional corridors, while not as substantial in width as regional corridors, should be wide enough to provide landscape connections for species movement and dispersal (generally > 300m). Sub-regional corridors may not be large enough to provide substantial species habitat, but be sufficiently wide to cater for a wide range of species movement and dispersal. Sub-regional corridors typically connect larger vegetated landscape features such as ridgelines and valley floors.

Local Corridors

Local corridors are smaller, less defined linkages that provide local connection of remnant patches of vegetation and landscape features such as creek lines, gullies, wetlands and ridgelines. They may in some cases be less than 50m in width and as such may be influenced by edge effects. Local corridors are an important component of an overall regional landscape conservation framework.

Corridor management

Management of a corridor should aim to retain and enhance the existing vegetation cover and wildlife habitats. This should include retaining vegetation cover and structure including groundcovers,

shrub layer and canopy species, and logs on the ground. Where a corridor comprises stepping stones of remnant vegetation (e.g. paddock trees), management should aim to enhance and revegetate the corridor to increase vegetation cover and make better linkages.

Overall, corridor management should aim to ensure that ecological processes and corridor function are maximised:

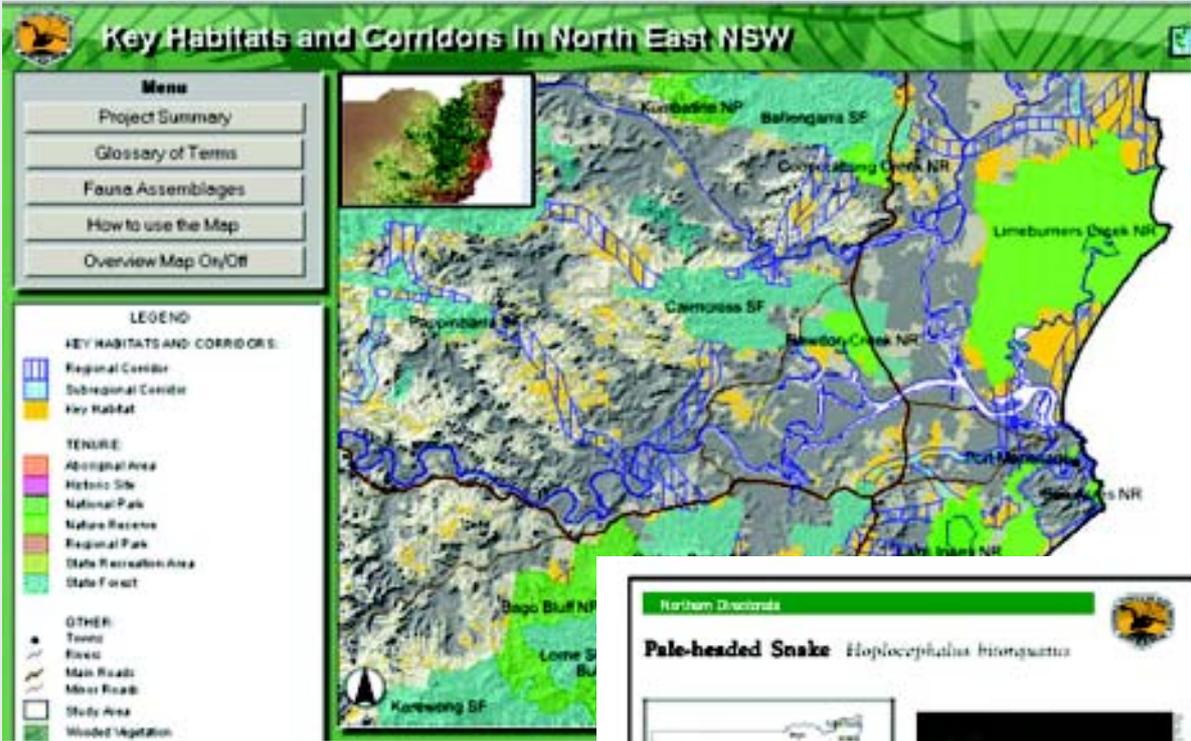
- maintain and increase vegetation cover and habitat quality to maximise connection between larger remnants of vegetation. This will help dispersal of wildlife populations between larger remnants and ensure genetic interchange and seasonal wildlife movement;
- provide specific habitat resources and ecological needs, particularly for threatened species (e.g. Koalas);
- maximise corridor width and function by revegetation and control of weeds and feral animals; and
- maximise the protection / linkage of landforms (i.e.. valley floors, floodplains, gullies, mid-slopes and ridges).



Clearing resulting in fragmentation of habitats and barriers to animal movement.

Key Habitats and Corridors

The Department of Environment and Conservation (DEC) has mapped at a regional scale Key Habitats and Corridors in northern NSW to provide a framework of key fauna habitats and linking habitat corridors. Key habitat and corridor maps and the data used in this project are available through the CANRI website at www.canri.nsw.gov.au. This website allows the user to interrogate the Key Habitats and Corridors mapping and access other information such as the project summary and key fauna species profiles. See example below.



The key habitats and corridors mapping is regionally based and not absolute at a property scale. Whilst subject to limitations, it does provide a spatially complete, integrated planning framework for holistic landscape conservation.

Northern Districts

Pale-headed Snake *Hoplocephalus bitorquatus*

Distribution

- Abundant - The coast and eastern and western slopes of the Great Dividing Range, extending from about 100 km inland from the coast in northern NSW to northern Qld.

SPECIES LIST FOR MOIST ESCARPMENT FOOTHILLS UNC ASSEMBLAGE

This assemblage is widespread, with a similar species composition and pattern of distribution to the Upper North Coast Moist Escarpment-Foothills (UNC) assemblage. The assemblage consists of ten priority species, including several renowned for their sensitivity to loss of habitat and disturbance (e.g. Yellow-bellied Glider, Powerful and Masked Owls). Key habitats are forest, and commonly occur within riparian corridors link this rather fragile and its key habitats across all 5 bands of potential corridors provide a link from the escarpment forests to bioregions.

...central plate and eastern and western falls of the... on the Great Dividing Range north to the QLD border... all locations in warm, dry forests and woodlands at... all places in the north of this range appear to be... to be a stronghold as NSW.

1996 Act 1995 status and reasons for listing

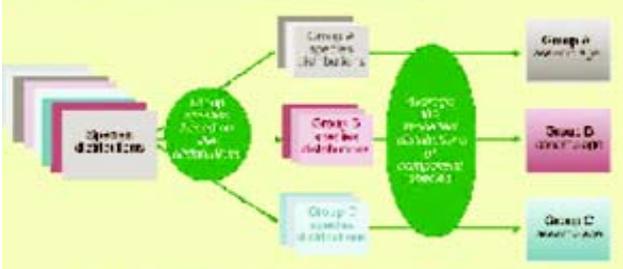
...is a priority species for listing this species... The... severely reduced, fragmenting processes... modern...

...in NE NSW is generally isolated by... some... patches becoming fragmented.

SCIENTIFIC NAME:

Vulpes vulpes
Tyto novaehollandiae
Marmotops norfolkensis
Antechinus melanoleucus
Antechinus australis
Antechinus australis

FAUNA ASSEMBLAGES



This flow chart shows the steps involved in defining fauna species assemblages

Woolly Black-cockatoo
 Koala
 Yellow-bellied Glider



Corridors consist of a sequence of stepping stones across the landscape (discontinuous areas of habitat such as paddock trees, wetlands and roadside vegetation), continuous lineal strips of vegetation and habitat (such as riparian strips, ridge lines etc.), or they maybe parts of a larger habitat area selected for its known or likely importance to local fauna.

How to go about it

Management of corridors does not mean 'locking up' your land. Management should aim to protect corridor function while allowing for other land uses. This may include:

- allowing expansion of corridor width by regeneration and protection of vegetated patches and remnants by excluding, or reducing stocking rates and reducing the frequency of hazard reduction burns;
- improving the ecological value of corridors by undertaking weed and feral animal control;
- protecting key habitat resources within corridors such as retention of live and dead hollow-bearing trees, ground litter resources including rocks and fallen logs and protecting specific feed trees and resources for threatened fauna species (e.g. Tallowood trees for Koalas); and
- minimising barriers to fauna movement (e.g. reducing cleared areas within the corridor and constructing fences that allow for the free movement of wildlife).

References and Further Reading

- CANRI website. Key habitats and corridors mapping.
www.canri.nsw.gov.au
- Scotts, D (2003), *Key Habitats and Corridors for Forest Fauna. Occasional Paper 32.* NSW NPWS
- Scotts, D and Drielsma, M (2003), *Developing landscape frameworks for regional conservation planning: an approach integrating fauna spatial distributions and ecological principles.* Pacific Conservation Biology. Vol. 8, No. 4.
- Department of Conservation and Environment website.
www.environment.nsw.gov.au

Further Information

Environment Protection and Regulation Division
North East Branch
Department of Environment and Conservation
24 Moonee Street
COFFS HARBOUR NSW 2450
Phone: 6651 5946

August 2004