## 7.9 STATUS OF VEGETATION COMMUNITIES

Native vegetation in Victoria has been classified according to Ecological Vegetation Classes (EVCs) (DSE, 2012). There are approximately 300 EVCs statewide. An ecological vegetation class consists of one or a number of floristic communities that appear to be associated with a recognisable environmental niche, and which can be characterised by a number of their adaptive responses to ecological processes that operate at the landscape scale level (DSE, 2012).

EVCs in each bioregion have been assessed and characterised with a conservation status. This status is traditionally based on the broad concepts of inherent rarity, degree of threat (including consideration of historic and on-going impacts) and importance for supporting other significant features (for example, as a drought refuge for native fauna) (DSE, 2012).

As the South Gippsland Landcare Network area has been extensively cleared of native vegetation, much of the remnant vegetation is classified as characterised as Endangered or Vulnerable. For a detailed description of conservation status description, please see appendix 1.

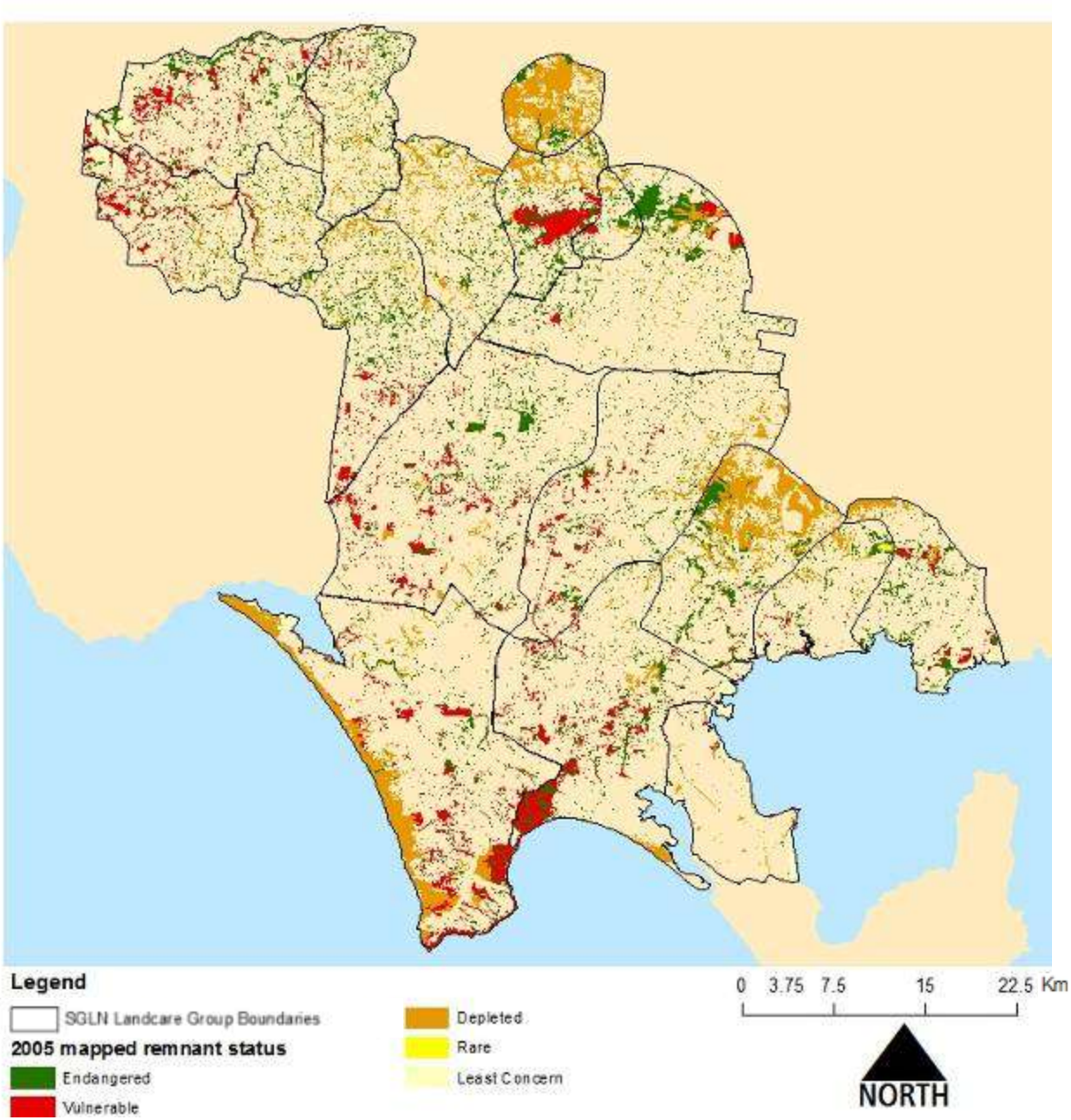


**Figure 13 Status of Vegetation Communities in the South Gippsland Landcare Network (WGCMA-mapped data, 2012)**

## 7.10 KEY REMNANT ASSETS

The South Gippsland Landcare Network area contains several key remnant assets on public land. This includes state parks, fauna and fauna reserves, state reserves, marine and coastal parks and wetland reserves.

To the east of the Network is highly connected vegetation that linked to the Tarra-Bulga National Park, an important habitat for Strzelecki Koalas. Another important environment for koalas is the Mount Worth State park in the Northern Region of the Network.

Important remnant vegetation islands across the Network area include the Halston Bush, Hamanns Bush, Alsop's Creek Reserve, Cape Liptrap Coastal Park, Turtons Creek State Reserve, Agnes River State Reserve and the Bald Hills Wetland Reserve.

Many of these reserves and parks are maintained by Landcare or Friends groups.

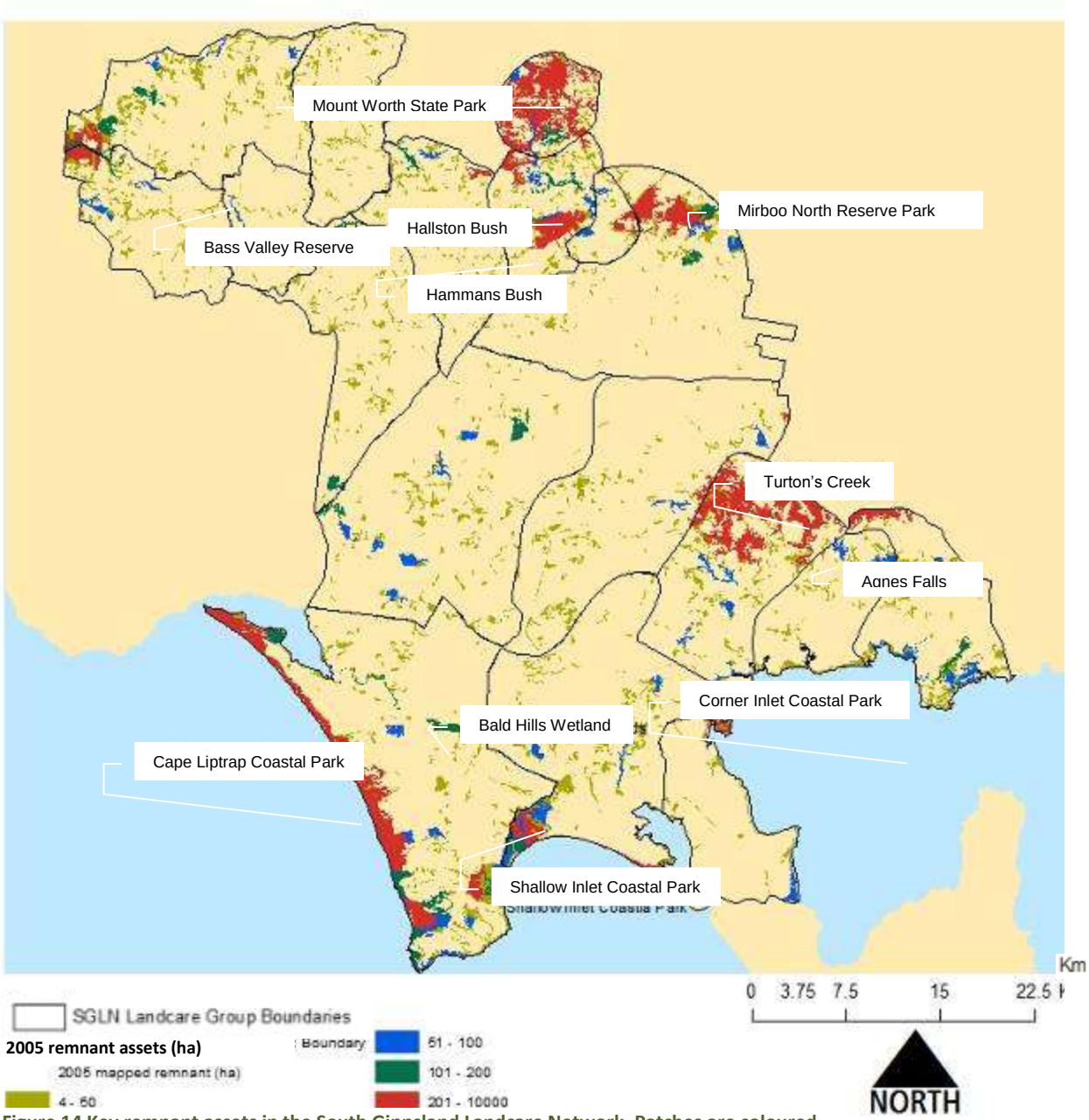


**Figure 14 Key remnant assets in the South Gippsland Landcare Network. Patches are coloured according to their size. (WGCMA-mapped data, 2012)**

## 7.11 SUITABLE KOALA HABITAT

Tree species are grouped into primary, secondary and supplementary preference classes according to the level of utilisation by koalas (McAlpine, Rhodes, & Possingham, 2006). For a list of these species please see appendix 5.

The South Gippsland Landcare Network has created a koala map based on EVC dataset mapping. This characterises whether the EVC is likely to support primary, secondary or supplementary koala trees.

This map is based on data provided to the Network by HVP plantations based on 119 sites surveyed in the Strzelecki Ranges. This is based on the strike rate around Eucalyptus species (proportion of survey trees).

EVCs were sorted by the South Gippsland Landcare Network into four levels:

1 – Likely to characterised by primary species.

2- Likely to be characterised by both primary and secondary and/or supplementary species

3 Likely to be characterised by secondary and/or supplementary species

4. None or very little Eucalyptus likely to be present

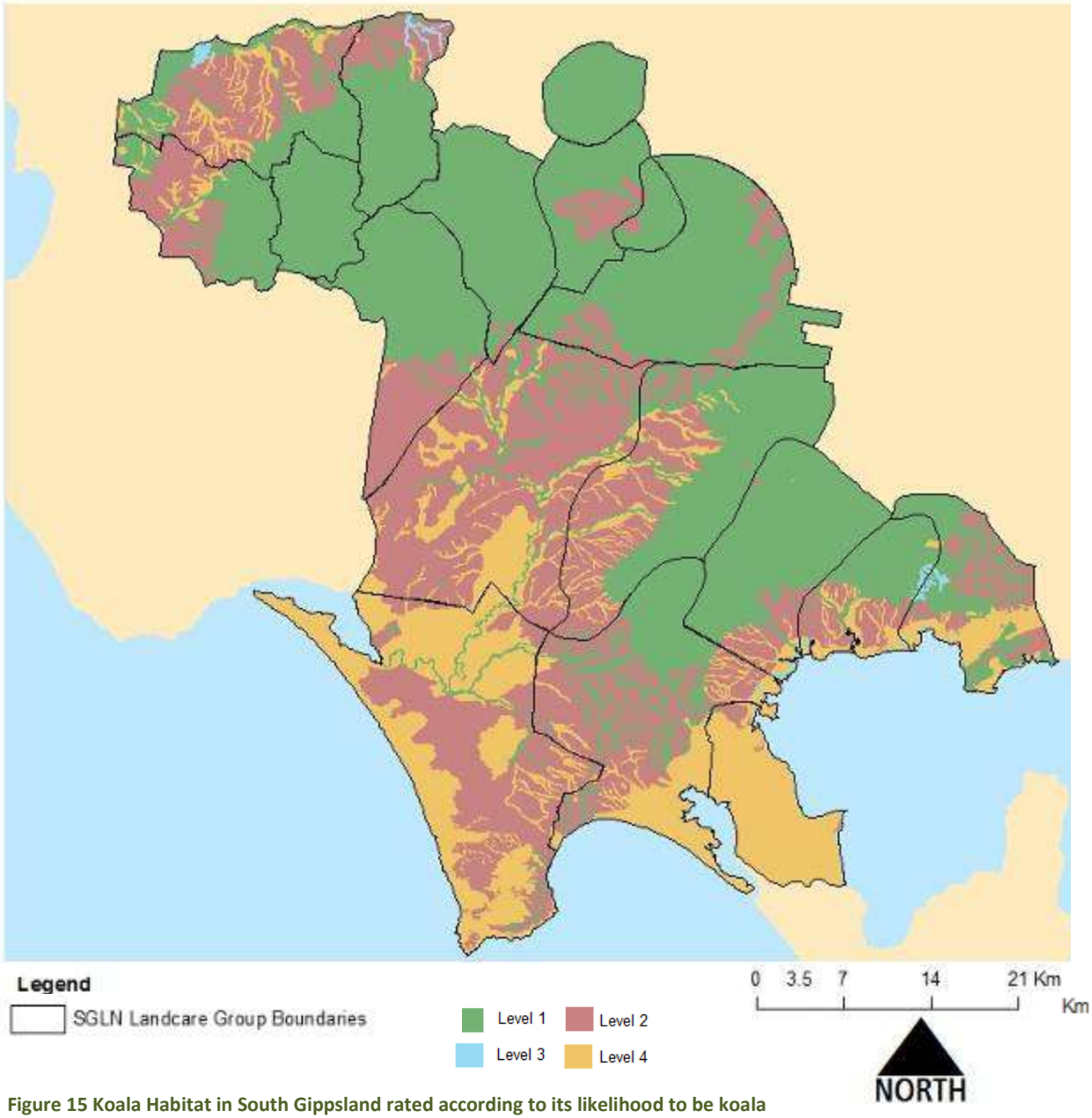


**Figure 15 Koala Habitat in South Gippsland rated according to its likelihood to be koala habitat. Created by SGLN.**

## 7.12 PREVIOUS PROJECTS

The South Gippsland Landcare Network was formed in 1995. However Landcare has existed in the South Gippsland region for far longer either in the form of organised groups, or as individual landholders undertaking environmental works on their property. The Friends of Strzelecki Koala project aims to not only build corridors on remnant vegetation, but also to build on previous Landcare works.

Landcare projects provide biophysical outcomes including increases in farm productivity, biodiversity improvements, erosion control and sediment reduction outcomes, as well as social outcomes such as community empowerment and cohesion.

An example of this has been the Friends of Strzelecki Koala Project, funded with support of SP Ausnet in 2011. This project funded the Foster North Landcare Group to provide koala habitat links along Amy's track in the Foster North area. This project reignited the group and created many on farm benefits.

Other recent examples of projects in the Network include the Fish Creek Group's Strzelecki Lyrebird Link Project, the Westernport Targeted Land Stewardship Project, the Corner Inlet Connection Project and the Upper Tarwin Enhancement project.

### *CASE STUDY: ENHANCING THE CAPE LIPTRAP TO BUNURONG BIOLINK PROJECT*

The Cape Liptrap to Bunurong project aimed to improve connectivity across the landscape. The project aspired to improve the connectivity between the wider Westernport Bay to Wilson Promontory biolink, as well as the Cape Liptrap to Strzelecki Range biolink. This was a partnership project between South Gippsland Landcare Network and West Gippsland Catchment Management Authority. The project was funded through the Victorian Investment Framework.

**When:** 2011-2013

**Who:** Any landholder in the project area was encouraged to apply. Landholders were informed of the project through direct mail outs, information sessions and advertisements in the local newspapers.

**What:** The project supported onground works that helped improve links across the landscape. All projects were ranked by their potential to connect habitat.

Over the three years of the project:

- 76 Landholders applied for projects
- Funded 17 landholders to undertake work
- Funded 22.9 km of fencing to protect 178.92 ha remnant sites
- Funded 20.08 ha of revegetation, 50,370 trees planted

# 8. THREATS TO STRZELECKI KOALAS

## 8.1 HABITAT LOSS AND FRAGMENTATION

Habitat loss is where ecosystems capable of supporting indigenous endemic species are destroyed by natural processes – wildfire, flood, drought etc or human activity where natural vegetation is replaced by farmlands, plantations of non indigenous forest species, mining, urbanisation, weed infestation or dams. Approximately 52% of the vegetated land in the West Gippsland CMA region prior to European settlement has now been cleared (WGCMA, 2003)

Habitat fragmentation occurs when a naturally occurring large and continuous area of habitat is reduced to smaller scattered remnants of habitat. Fragmentation leads to isolation as well as decreases the number of animals supported by the habitat (Preece H, 2007). The South Gippsland Landcare Network is severely fragmented, with small areas of remnant remaining on both private and public land.

This loss of habitat and fragmentation will increase the risk of koalas populations becoming more susceptible to natural pressures as well as increased opportunities for disease to spread in localised and sometimes overcrowded pockets (Lumney & Reed, 1990)

Koalas are commonly seen in South Gippsland and the Strzelecki ranges in paddock trees, along roadsides and in urban areas. This can be due to koalas simply moving around their home range, or koalas migrating from their home range due to population pressures, territorial dynamics or natural disasters. This movement increases the subject to higher levels of mortality, as they are more vulnerable to predators such as dogs; collisions with vehicles; harsh environmental conditions; stress; or starvation which may exacerbate the effects of diseases such as Chlamydia (Preece H. , 2007).

## 8.2 INTRODUCED PLANTS AND ANIMALS

The climatic conditions and soil in South Gippsland provide optimum conditions for blackberries to flourish. Blackberries (*Rubus fruticosus sp*) form dense thickets which koalas are unable to move through, restricting access to vegetation especially in gullies and along waterways, where blackberries thrive. This can restrict koala's access to cool refuges with trees with moisture rich leaves over summer. Blackberry infestations also may harbour predator animals such as foxes.

Pest animals including foxes (*Vulpes vulpes*) and wild dogs (*Canus familiaris*) have been reported to prey on koalas. (Melzer, 2011). Livestock, particularly cattle, may also harass and even kill koalas that are attempting to cross paddocks.

## 8.3 URBANISATION, ROADS AND DOGS

As the extent and quality of native vegetation is reduced, koalas are moving into urban areas in search of suitable habitat. Dogs are a crucial threat in urbanised areas as they have been reported to attack and kill koalas.

Koala strikes by motor vehicles are the second most common cause of koalas being admitted into care and the second most common cause of mortality (Senate Environment and Communications References Committee, 2011). Roads can also present an insurmountable physical barrier for koalas to cross leaving them isolated in pockets of bush land (Senate Environment and Communications References Committee, 2011).

## 8.4 DISEASE

Chlamydia is the most prevalent disease found in koalas and is manifested in time of stress (such as when habitat is reduced.) The effects of chlamydial disease in koalas includes eye infections, that can lead to blindness, urinary tract infections which cause cystitis, which leads discoloration and ulceration of the koala's rump ("dirty tail" or "wet bottom") due to incontinence. The greatest threat to koala populations from chlamydial disease is from the effects of upper reproductive tract infection in female koalas. In these animals, chlamydial infection and the resulting inflammation of the upper

reproductive tract organs can cause structural changes (fibrosis) which can, cause sterility (Polkinghorne, 2012)

Virtually every wild population of koalas in Australia is infected with Chlamydia, and in many cases, the level of disease is a severely threatening process. Of the nine currently recognised species of Chlamydia, two infect koalas, *C.pecorum* and *C.pneumoniae*. Recent studies in SE Queensland show that approximately 50% of animals are infected, with *C.pecorum* being the most common and most virulent species (Jackson et al 1999)

Koala Retrovirus (KoRV) is associated with a range of conditions, including leukaemia and an immunodeficiency syndrome. Up to 100% of koalas in Queensland and NSW have KoRV, but the proportions are lower in southern populations (Tarlinton 2006) There is some evidence that chlamydiosis may be exacerbated by KoRV as chlamydiosis is often associated with immunodeficient states (Tarlinton et al, 2005)

## 8.5 CLIMATE CHANGE

The koala is recognised by the International Union for Conservation of Nature (IUCN) as a species highly vulnerable to climate change. However, the impact of climate change on its distribution is not well understood. Under a future hotter and drier climate, current koala distribution, may be forced by habitat changes into areas where koala populations are under threat already from human encroachment, dog attacks and vehicle collisions (Adams-Hosking et al, 2011)

In parts of the koala's range, the effects of climate change may be manifested, or exacerbated, by their influence on the fire regime. In recent times devastating fires have occurred (e.g. Victoria's Black Saturday wildfires). The mortality of koalas resulting from these fires has not been quantified, but loss of habitat was extensive and koalas are particularly exposed to injury in crown fires that occur in these intense bushfires. A substantial proportion of koala habitat has been burned in Victoria in recent years (Senate Environment and Communications References Committee 2011). A recent study of the influence of fire and other factors on koalas in Port Stephens suggested fire is a significant threat to koalas, but that changing the fire regime may not improve the population's viability. That is, changing the regime from infrequent, large fires to more common, smaller fires did not improve modelled population viability (Lunney et al. 2007).

Professor Ian Hume, Fellow of the Australian Academy of Science, and his students from the University of Sydney have been researching the effects of CO2 increases and temperature rises on eucalypts. Results from laboratory experiments have shown that increases in CO2 affect the level of nutrients and 'anti-nutrients' (things that are either toxic or interfere with the digestion of nutrients) in eucalypt leaves. Anti-nutrients in eucalypts are built from carbon and an increase in carbon dioxide levels will favour the production of anti-nutrients over nutrients. Koalas are selective about the species of eucalypts that they eat as different species contain different ratios of nutrients to anti-nutrients. Some eucalypt species may have high protein content, but anti-nutrients such as tannins bind the protein so it can't be used by the koala.

Koalas' warm fur and thick skin enables them to endure cold conditions in southern Australia, but they do not cope well with extreme heat. Unlike most other arboreal marsupials, Koalas do not use a tree hollow for shelter, which also contributes to their greater susceptibility to extreme temperatures and drought. During particularly hot periods, koalas descend to the ground and go in search of water. When at ground level, koalas are significantly more exposed to predators (ICUN, 2009)

## 8.6 ADDITIONAL POTENTIAL THREATS

Bell Miner Associated Dieback (BMAD) and myrtle rust could adversely affect koala habitat.

BMAD occurs patchily from south-east Queensland to Victoria. BMAD affects wet and dry sclerophyll forest communities often dominated by eucalypts. Climate change could allow the associated psylids ingress in to southern forests.

Myrtle rust is a recently arrived fungal pest of plants of the family Myrtaceae, including eucalypts. It is now found extensively across eastern NSW and Queensland and has infected over 90 plant species. A small number of Koala food tree species have been infected but these infections have been minor to date. Myrtle rust does not appear to be a current threat to Koala habitat.

# OUR TARGET SITUATION

# 9. THE IDEAL SITUATION

The overall aim of this project is to protect, enhance and restore vegetation in South Gippsland as part of a strategic Network wide attempt to improve Strzelecki Koala Habitat. Ideally, this project will contribute to the long term goal of healthy remnants connected by successful biolinks, across a sustainably, productive farming landscape.

## 9.1 HEALTHY REMNANTS

Private landholders are crucial custodians of koala habitat, especially in South Gippsland where much of the remnant remains as fragmented patches across the landscape.

Koala habitat quality is defined on the basis of the proportion of preferred Eucalypt species and soil type, which collectively affects leaf chemistry including nutrient levels and toxins. Healthy remnant vegetation on the other hand can be described as healthy, mature trees, regenerating saplings and shrubs, diverse understory and ground habitat and few pests and weeds (Meat and Livestock Australia, 2005).

It is fundamental we design projects that create fully functioning ecosystems and not simply a narrow shelter belt with only Eucalyptus species that allow koala to pass between. Any remnant we restore must be fully functioning and managed to support all endemic fauna and flora. By creating good quality koala habitat, we will achieve the significant by-product of creating habitat for all endemic species found in the habitat.

Any remnant protected or enhanced must be done in accordance with the Victorian Investment Framework Department of Sustainability and Environment Vegetation Work Standards. See the appendix for further details.

Habitat buffers can contribute to the long term survival of koalas in high quality primary and secondary koala habitat by ensuring that incompatible uses, development or activities do not occur or immediately adjacent lands. Buffers can also help protect remnants from nutrients impacts, wind damage and weed invasion (McAlpine et al, 2006).

***Amount of Habitat***

The amount of habitat required to support a viable koala population is difficult to determine. The Planning Guidelines for Koala Conservation and Recovery (2006) recommends that at least 40-50% of the landscape as primary and secondary koala habitat across landscape should extend in a 1 kilometre radius around where koalas occur. This however is particularly difficult in a thriving agricultural landscape such as South Gippsland; especially as koalas are commonly see throughout the entire Network. Other studies have found where the percentage of habitat is below around 20% for Ballarat, 30% for Port Stephens to 50% for Noosa, than there is a greater likelihood of koalas being absent then present (McAlpine et al, 2006).

Habitat does not need to be made only of primary and secondary habitat, but can be a mosaic of different classes. Having adequate amounts of marginal or low quality habitat in conjunction with primary and secondary habitat is an important component for maintaining viable koala populations (McAlpine et al, 2006).

The Planning Guidelines for Koala Conservation and Recovery (2006) recommends patches should be larger than 50-100ha in size with lower priority given to patches smaller than 2ha. The highly fragmented nature of South Gippsland means however nearly all patches we will be working on, will be less than 2ha.

***Shape***

In order to minimise edge effects, koala habitat patches should be more circular than linear in shape. As habitat patches become smaller the amount of edge relative to the patch increases. For koalas, edge effects may lead lead to increased predation risk by dogs or increase stress leading to disease. However, the very nature of most projects incorporated in farm plans such as shelters belts around paddocks, riparian links, and corridors make this not always possible.

## 9.2 CONNECTED BIOLINKS

The Habitat for Life project is aiming to create effective corridors that link key patches of remnant habitat across private land in South Gippsland. Projects submitted into this program will be ranked by their potential connectivity to remnant vegetation, as well as to be near modelled species movement.

Fragmentation is a major issue for koala conservation as koalas will not travel far between habitat fragments due to their low-energy, low-nutrient diet provided by eucalypt leaves (Mitchell, 2012). Studies have found koalas will move a median distance of 100m a day for females and slightly more for males. Overall, koalas will disperse generally in their home ranges around 3-4km. However, prior to establishing a home range, koalas can disperse long distances up to around 10km (McAlpine et al, 2006).

Additionally, small populations of koalas living in highly isolated patches tend to suffer far greater than populations that are connected to each other via corridors allowing for animal movement.

Because of these factors it is crucial to maintain a network of habitat patches and corridors linking blocks of koala habitat. Small patches of vegetation, which may not be able to maintain a population of their own, can become crucial links if positioned between other large patches. If habitat patches are close enough together for koalas to move freely between them on a daily basis then they are considered to be highly connected (100-200m) (McAlpine et al, 2006).

Where blocks of habitat are separated by more than 10km with no linking habitat between them successful koala dispersal between them will be rare. White (1999) found that koalas often use isolated paddock trees and make frequent long-range movements (> 2 km) across open ground, and concluded that koalas were not reliant on continuously-vegetated corridor systems which were absent from the study area.

Therefore, links can be made up of a range of healthy habitat areas such as core areas, corridors, nodes and stepping stones, which will be enhanced through a sequence of works projects, some small scale and some larger scale.

Stepping stone corridors of one or more stepping stones of suitable habitat may be sufficient to allow koalas to move through a relatively developed landscape (ensuring there are no barriers such as roads or dogs in the way). However, as this project aims to be all encompassing, some wildlife species have difficulty living in or moving through a developed landscape. They require a continuous link of suitable habitat between two vegetation patches. Therefore continuous habitat is also required.

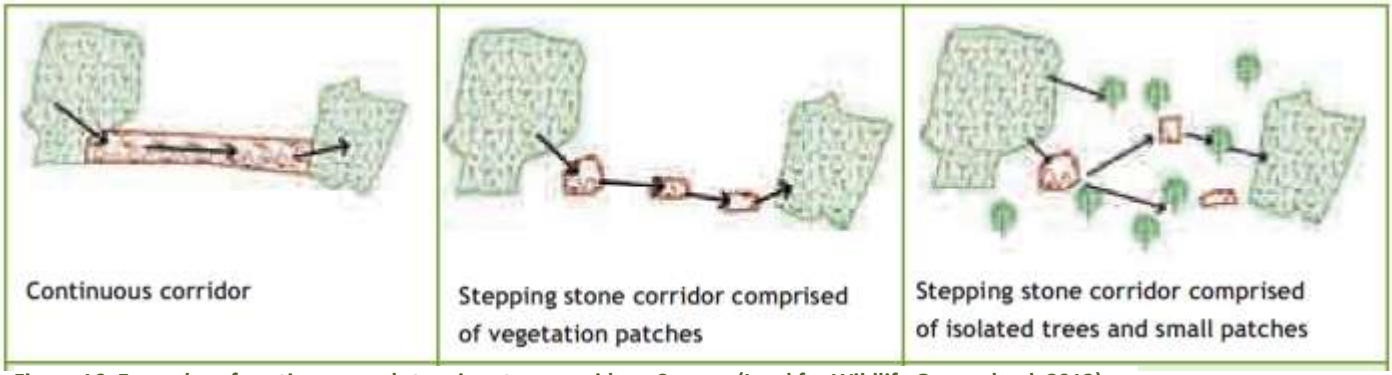


**Figure 16: Examples of continuous and stepping stone corridors. Source: (Land for Wildlife Queensland, 2012)**

## 9.3 AN AWARE AND RESPONSIVE COMMUNITY

The Friends of Strzelecki Koala Project not only aims to improve habitat quality for Koalas, but also to support the communities they live amongst. The success of this program is reliant on community capacity and the mobilisation of the community to assist.

Why is this important? Firstly all Landcare programs, including this one, rely on private landholders wanting to volunteer and contribute labour and land. People who know more about ecological processes and the practices that support environmental health are more likely to adopt those practices (Curtis et al. 2008). However, a shift to a new practice is more likely when the practice delivers benefits to a person and their business and is easy to test and learn about (Pannell et al 2006).

Landcare creates social capital, bringing neighbours together to share ideas and implement cooperative projects (Compton & Beeton, 2012). However, changes in Natural Resource Management funding, whereby funding is directed straight at landholders, bypassing groups has meant Landcare groups have been bypassed.

This project aims to re-empower groups by giving them responsibility to direct where the key areas for projects, to create networks of neighbouring linkages and rally non-Landcarers to participate. The project aims to be guided by a bottom up approach (the Landcare group's Koala Action Plans) as well a top down approach (mapping of key areas, guided by priorities from the State government). This project aims to reward landholders who work with their Landcare group (or neighbours) to create biolinks across the landscape

Please see the communication plan on page 53 for more information on how this will be achieved.

# PLAN DEVELOPMENT

# 10. METHOD

## 10.1 DESKTOP REVIEW

The first stage of this Koala Preservation, Enhancement and Restoration Plan was a desktop study on:

- Background technical information
- A snapshot of the Network and projects
- Discussion with stakeholders including HVP plantations, the South Gippsland Shire, DSE and Landcare Groups. Special focus was placed on reviewing ranking of social benefit of environmental projects.

## 10.2 DEVELOPMENT OF STEERING COMMITTEE

The project steering committee comprised of representatives from:

- DSE ecomarkets team
- HVP plantations
- Monash University
- South Gippsland Landcare Network
- Mardan/Mirboo North Landcare Group
- West Gippsland Catchment Management Authority
- South Gippsland Shire

The role of the steering committee was to assist with the scope of the project, and provide technical advice and guidance to the project team. The steering committee will meet four times a year.

## 10.3 DEVELOPMENT OF PROJECT CRITERIA THROUGH ENSYM

The project team worked with the DSE Ecomarkets team to develop project criteria that incorporated not only environmental benefit, but also social benefit of a project site.

***Environmental benefit***

In order to ensure projects achieved high environmental outcomes and improved koala habitat, criteria was created to rank projects.

***Quality***

Vegetation quality is a measure of the intactness and viability of vegetation in relation to its site condition and landscape context. Koalas do not especially prefer habitat based on quality but rather a range of factors including the palatability of trees (based on soil type) or proximity to mating species.

However quality is an indicator of ecosystem health and biodiversity. Enhancing and protecting remnant vegetation improves the entire ecosystem including native flora and fauna, reduces the threat of pests, improve the resilience of the patch to climate change and other threats.

Restoring remnant back to a healthy state and managing for all endemic species is crucial. It is fundamental we manage projects that act as a fully functioning ecosystem and not simply a narrow shelter belt that lets the koala pass between.

By protecting and enhancing remnant vegetation we are assisting not only the koala, but the entire ecosystem including birds, bats, plants and other mammals. Targeting the koala however enables us to umbrella all species under them.

The quality of each project will be assessed using the Habitat Hectares assessment method. This will be done at a site visit. A Habitat Hectare assessment is a site based measure of quality and quantity of native vegetation that is assessed in the context of the relevant native vegetation type. This assessment fits in with current DSE standards and desired outcomes.

***Patch Size and Landscape Connectivity***

Works undertaken closer to other corridors and large patches are more beneficial than those that are created in isolation. Ideal koala habitat is large areas of high quality leaf grown on fertile soils in close proximity to neighbouring habitat patches of similar quality and low proximity to roads (McAlpine et al, 2006)

The closer an area of koala habitat becomes to this ideal the more effectively the habitat will support high quality breeding and low risk movement (McAlpine et al. 2006). Larger patches of vegetation are more beneficial as koala habitat as they are able to support larger, more diverse populations and reduce the risk of koalas having to move from patch to patch. Additionally, a larger project (either

remnant protection or enhancement or revegetation) will gain more environmental benefit than a smaller one in the same location.

The proximity of a project to remnants (and their size) as well as the size of the proposed project will be measured by Ensym.

***Koala Habitat Preference***

Koala habitat is described as either core, primary or secondary habitat. Core habitat is any forested area known to be used by koalas (Licari & Phillips 2011). Primary and secondary habitat differentiates between habitat quality and regardless of koala presence. If the area is dominated by tree species known to be preferred by koalas it is considered primary habitat (Licari & Phillips 2011). If the forest is dominated by non-preferred tree species yet preferred tree species still occur it is considered secondary habitat (Licari & Phillips 2011).

Tree species are grouped into primary, secondary and supplementary preference classes according to the level of utilisation by koalas (McAlpine, Rhodes, & Possingham, 2006).

The South Gippsland Landcare Network has created a koala map based on EVC dataset mapping. This judges whether the EVC is likely to support primary, secondary or supplementary trees.

This map is based on data provided to the Network by HVP plantations based on 119 sites surveyed in the Strzelecki Ranges. This is based on the strike rate around Eucalyptus species (proportion of survey trees).

EVCs were sorted into four levels:

1. Likely to characterised by primary species and have koalas present
2. Likely to be characterised by both primary and secondary and/or supplementary species
3. Likely to be characterised by secondary and/or supplementary species
4. None or very little Eucalyptus likely to be present

Please see appendix 2 for individual EVC rankings.

***Natureprint Species Distribution layer***

In order to capture an essence of koala movement across the Network, a Natureprint layer is also used to assist with ranking project sites.

In summary, the modelling process looks at the environmental features, where the species has been found (and not found) and extrapolates beyond the known locations to other areas with that combination of environmental features. Rather than a simple binary (i.e. 'yes' or 'no') response like the traditional range map, the species distribution model provides a sense of likelihood of a species (or its habitat) being present (DSE, 2012). Therefore producing a 'best guess of model of where else the species' habitat might be located. The probabilities on the map are not probabilities of species occurrence. They might be best thought of as an index of potential habitat suitability (DSE, 2012).

As it is a model, it includes potential unconfirmed habitat, and may include habitat that is only occasionally occupied (DSE, 2012).

***Social benefit***

The Friends of Strzelecki Koala Project not only aims to improve habitat quality for Koalas, but also to support the communities they live amongst. Additionally, the project aims to re-empower groups by giving them responsibility to direct where the key areas for projects in their group are, to create networks of neighbouring linkages and rally non-landcarers to participate. The project aims to be guided by a bottom up approach (the Landcare Groups Koala Action Plans) as well a top down approach (Mapping of key areas, guided by priorities from the State government).

A scoring matrix was created by the project team in order to support projects with high social benefit outcomes. The matrix aims to prioritise projects that:

- Encourage Landholders to work with their Landcare Group as part of their Landcare Action Plan
- Encourage farmers who are not active to participate in the project
- Encourage farmers who are not in a traditional Landcare immediate area to participate in the project
- Encourage Landholders to work with their immediate neighbours to form links

## 10.4 LANDCARE GROUP ACTION PLANNING

The South Gippsland Landcare Network identified 10 key groups in the first year of the project to undertake a Koala Action Plan. These groups were included if they were in the Strzelecki Ranges, had undertaken koala projects in the past, were interested or 'ready' in undertaking a project and did not have another major biolinks or vegetation project in their area. The groups included Arawata, Allambee South/Community, Foster North, Franklin River, Halston, Mardan-Mirboo North, Mt Eccles/ Wild Dog Valley, Nerrena and, Tarwin Valley. A project officer attended one or more meetings to explain the project and work with the groups to explain the program.

Groups assisted to identify missing links in corridor and to approach landholders to assist if required. Each group completed a unique Koala Action Plan that was then brought together by the South Gippsland Landcare Network to create an overall strategic plan. These plans are to be updated continually, as community education generates new interest and momentum in the group.

Other groups will be included in future years as the need arises.

## 10.5 PLAN DEVELOPMENT

The South Gippsland Landcare Network then brought all the information together in order to develop the plan. The plan combined the desktop research and work with DSE to identify areas of important remnant and potential connectivity, identify criteria for ranking onground sites according to benefit to koalas, as well as collated group action plans, key remnant corridor areas and remnant assets to create a proposed landscape wide naturelinks.

## 10.6 PROJECT PLAN COMMENT PROCESS

Every Landcare member in the ten target group was sent a copy of their own group's koala action plan. Each member was asked either to comment on the plan or submit an expression of interest for an individual project as part of the plan.

## 10.7 PROJECT ALLOCATION AND IMPLEMENTATION

Onground works will be funded according to criteria that are now included in Ensym scoring and decided upon by this plan. All projects will be undertaken in line with correct procedures. See grant allocation section for more information. The communication and monitoring and evaluation plans will also be implemented.

## 10.8 GROUP UPDATES AND PLAN REVIEW

At the beginning of each year's funding round all target groups will be updated by their project officer on projects occurring in the area and asked to review their group plan. The group will be asked:

- If the aims have been met, can the plan be expanded?
- If the aims have not been met, are we on track? What needs to be done i.e. more engagement or speak to a certain landholder?
- Does the plan need to be altered due to changed circumstances?

***Summary of social outcomes***

| | |
|---|---|
| **Encourage landholders to work with their Landcare Group as part of their Landcare Group Koala Plan** | Landcare groups are the keystone of Landcare; they provide members with support, knowledge, connection with local issues and one another.<br><br>In the past, many Landcare groups managed their own landscape scale projects, giving the group ownership and control over the project outcomes. However, recent federal and state funding programs have tended to support larger scale projects, which are more likely to be administered by Landcare Networks.<br><br>As Landcare Networks are administrating funds, many landholders now work directly with them to undertake environmental works, bypassing the Landcare group altogether. Many Landcare groups feel frustrated by this process, as they have no idea what works are happening in their area and feel powerless to support where these works occur.<br><br>This aim aspires to re-empower groups as they are more likely to take ownership of the project (and feel enthusiasm towards it) if they are given the opportunity to control their own destiny and influence the decisions that affect their lives (Zimmerman, 1995).<br><br>By encouraging landholders to work with their Landcare Group as part of their Koala Action Plan, we are placing worth back onto the group, giving them the ownership and power to decide where works will be best suited, where missing gaps in corridors are and who landholders suitable for the project are. Landholders who work with their group will be favoured, compared to those who work alone. |
| **Encourage landholders who are not active in Landcare to participate in the project** | Landholders who participate in their first Landcare project are nearly always 'trialling' at first to observe how successful the procedures and the outcomes are.<br><br>By encouraging Landholders to take their first steps into Landcare, we are not only providing an opportunity for the landholder to learn the skills needed to apply the innovation (Pannell et al 2006) but also reducing uncertainty about the relative advantage of the practice (Tonks 1983).<br><br>Anecdotal evidence from the South Gippsland Landcare Network has also observed that many landholders, when first participating in Landcare face issues such being rejected from the project or finding the procedures too arduous, become discouraged and will mostly not return to undertake works (Bartlett, 2013).<br><br>By encouraging this trialability, we are potentially encouraging far larger projects. For instance the South Gippsland Landcare Network has observed many landholders who trial a small project in the first instance that has only a small benefit to the environment, who go on to undertake far greater and larger projects. This is because landholders have developed the skills to undertake the project, as well as reduced the uncertainty of the risk. |
| **Encourage landholders who are not in a traditional Landcare immediate area to participate in the project** | The South Gippsland Landcare Network has observed that there are many pockets of the Network that have little to no Landcare presence. In other areas, nearly every farm on a particular road is a member.<br><br>Landholders have a strong influence over their neighbour. A neighbour can make a landholder aware of a new technology or practice, as well as showcase whether the technology or practice is is or is not suited to its need. If they succeed, neighbours see and learn, and a process of informal diffusion occurs.<br><br>Sociologists argue the farmer is likely to seek conviction that his thinking is on the right path from peers by means of interpersonal channels individual farmers seem to innovate on their own (Case, 1992).<br><br>By encouraging landholders to become members in traditionally non-Landcare areas, there is potential to influence more landholders. |
| **Encourage landholders to work with their immediate neighbours to form links in the landscape** | The aim of this criteria is to connect the landscape; both physically and socially.<br><br>Firstly, the benefits of supporting neighbours working together means projects will be of a larger scale, closer together and strategically worked to achieve the most benefit for the farmers and the environment.<br><br>Secondly, by supporting neighbours to work together we are encouraging transfer of knowledge between landholders. |