



Australian Government

Department of the Environment

Kangaroo Island Narrow-leaved Mallee (*Eucalyptus cneorifolia*) Woodland: a nationally-protected ecological community



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Covers: Kangaroo Island Narrow-leaved Mallee Woodland when it has been unburnt (front cover), and after a recent fire (back cover). (Matt White)

This guide is intended to develop public understanding of the national listing of the Kangaroo Island Narrow-leaved Mallee (*Eucalyptus cneorifolia*) Woodland as a threatened ecological community—what it is, why it is threatened and what national protection means for people on Kangaroo Island.

In summary:

- The Kangaroo Island Narrow-leaved Mallee (*Eucalyptus cneorifolia*) Woodland (or KI Mallee Woodland in short) is now listed as a critically endangered ecological community under Australia's national environment law, the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).
- The ecological community is only known to occur on Kangaroo Island, South Australia.
- It is identified as patches of native vegetation that have *Eucalyptus cneorifolia* (KI narrow-leaved mallee) as the most common tree in the canopy. *Eucalyptus cneorifolia* is a distinctive tree along roadsides on the eastern part of Kangaroo Island.
- The national Threatened Species Scientific Committee found that the ecological community was highly threatened. Its extent has declined very severely, by more than 90 per cent. It now has a very fragmented and restricted geographic distribution that is under threat, for instance, by weeds.
- The purpose of the listing is to ensure that the species and ecosystem functions within Australia's most threatened ecological communities are taken into account during major new developments and that they receive priority support for conservation efforts.
- The Threatened Species Scientific Committee's **conservation advice** outlines a range of priority research and management actions that provide guidance on how to protect, manage and restore the ecological community.
- The listing promotes a co-ordinated, landscape approach to recovery that supports existing national protection of several threatened species that occur within the ecological community, and other species unique to Kangaroo Island.
- Listing under the EPBC Act means that an activity that is likely to have a significant impact on the ecological community will need to be referred for an environmental impact assessment and approval.
- Routine property and road maintenance and land management practices carried out in line with laws and guidelines covering native vegetation are typically unlikely to require referral under national environment law. This includes most farming activities and roadside maintenance works.
- Australia's national environment law only considers activities that are likely to have a significant adverse impact on a listed ecological community. These are typically large new developments or works that involve permanently clearing large areas of intact, high-quality native vegetation.

Background

Australia's national environmental law protects matters of national environmental significance (MNES), which include nationally threatened species and ecological communities.

The EPBC Act defines an ecological community as an assemblage of native species that inhabits a particular area in nature. They often correspond with types of native vegetation, such as a certain kind of woodland, forest or shrubland.

The native plants and animals within an ecological community have different roles and relationships that, together, contribute to the healthy functioning of the environment. Protecting native communities also protects ecosystem services such as good quality air and water; healthy soils; natural prevention or control of erosion and salinity; shelter for stock; and carbon storage. These all contribute to better productivity of our land and water, which benefits people and society.

The EPBC Act is only triggered if a particular activity has, or will have, a significant impact on a MNES. Human settlements and infrastructures where an ecological community formerly occurred are no longer part of the natural environment and are therefore not part of the ecological community. This also applies to sites that have been replaced by crops and exotic pastures, or where the ecological community exists in a highly-degraded or unnatural state.

Why is the KI Mallee Woodland ecological community important?

Kangaroo Island is an area of unique biodiversity that is home to many plant species that occur nowhere else, or occur mostly on the island except for a few populations on the mainland. *Eucalyptus cneorifolia* is one of those species that mostly occurs on Kangaroo Island, except for a few small populations on the Fleurieu Peninsula.

The KI Mallee Woodland is a unique type of mallee vegetation that provides habitat for many native plants, birds, mammals, reptiles and other animals. It is home to:

- more than 250 plant species that may occur within the ecological community, which include:
 - 31 plant species that are listed as threatened, either nationally or in South Australia.
 - 17 plant species that are only found on Kangaroo Island, such as the Kangaroo Island correa and small-flower daisy-bush.

- two nationally endangered mammals, the Kangaroo Island dunnart and the southern brown bandicoot; and one nationally endangered bird, the Glossy Black-Cockatoo (South Australian); have been observed within the KI Mallee Woodland.



Southern brown bandicoot (Dave Watts)

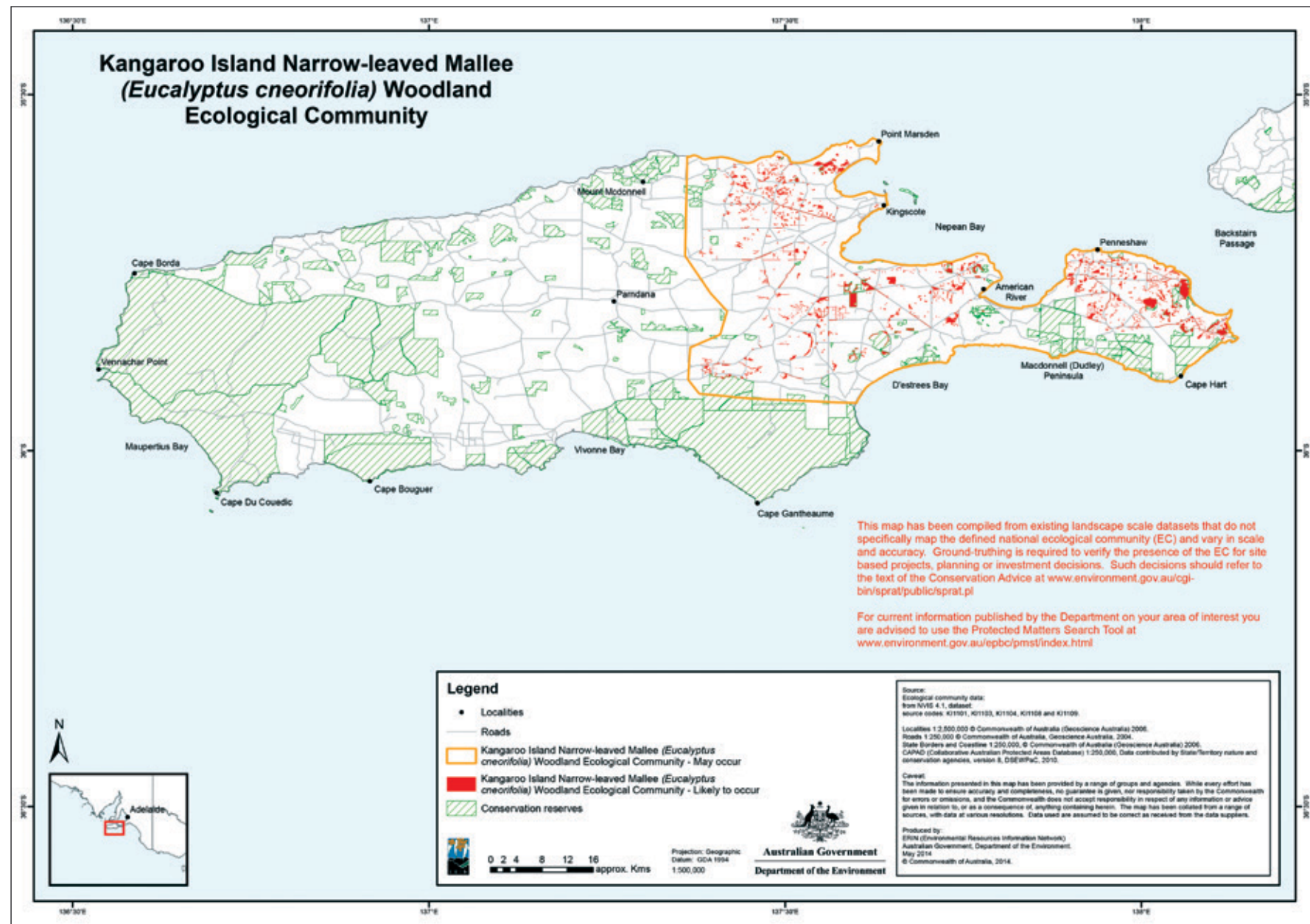


Small-flower daisy-bush (Matt White)

A large portion of the ecological community has already been lost. Remaining areas are fragmented and vulnerable to the impacts of threats, such as weeds and changes in fire severity and frequency. In many areas, especially along roadsides, the ecological community now mostly exists as small and fragmented patches. Protection will contribute to the future survival and recovery of the ecological community on Kangaroo Island.

Where does the KI Mallee Woodland ecological community occur?

The ecological community is only known to occur on the eastern part of Kangaroo Island—a region that has been heavily cleared and is least protected by conservation reserves. Small stands of *E. cneorifolia* occur on the mainland but are not part of the ecological community because they are degraded or belong to different kinds of mallee vegetation.



What is the KI Mallee Woodland ecological community?

The ecological community is a unique type of mallee woodland.

Mallee refers to the growth type of certain eucalypt species, characterised by multiple stems arising from a large, woody base called a lignotuber. The result is a bushy and typically low habit, seldom taller than 10 metres.

The most distinctive feature of the ecological community is the presence of *Eucalyptus cneorifolia* (Kangaroo Island narrow-leaved mallee) as the most common tree in the vegetation canopy.

It is important to note that the dominant tree species, *Eucalyptus cneorifolia* itself is not being listed. The listing only applies to intact patches of native vegetation that have *E. cneorifolia* as the most common tree canopy species.

A range of other species of eucalypt can be present in the tree canopy but are never the most common species present. Examples of these are the: purple-flowered mallee box (*E. albopurpurea*), coastal white mallee (*E. diversifolia* subsp. *diversifolia*) and white mallee (*E. phenax* subsp. *compressa*). Where a mature tree canopy is temporarily absent, as after fire or pollarding, there should be new, regenerating shoots, indicating a tree canopy will re-establish after time.

The understorey is made up of a range of native shrubs and herbs. The density and species composition of the understorey can vary with site and soil characteristics. For instance, some different understorey species may be found where the woodland occurs on limestone. There are also shifts in vegetation structure and composition in response to disturbance—especially the fire history of a site.

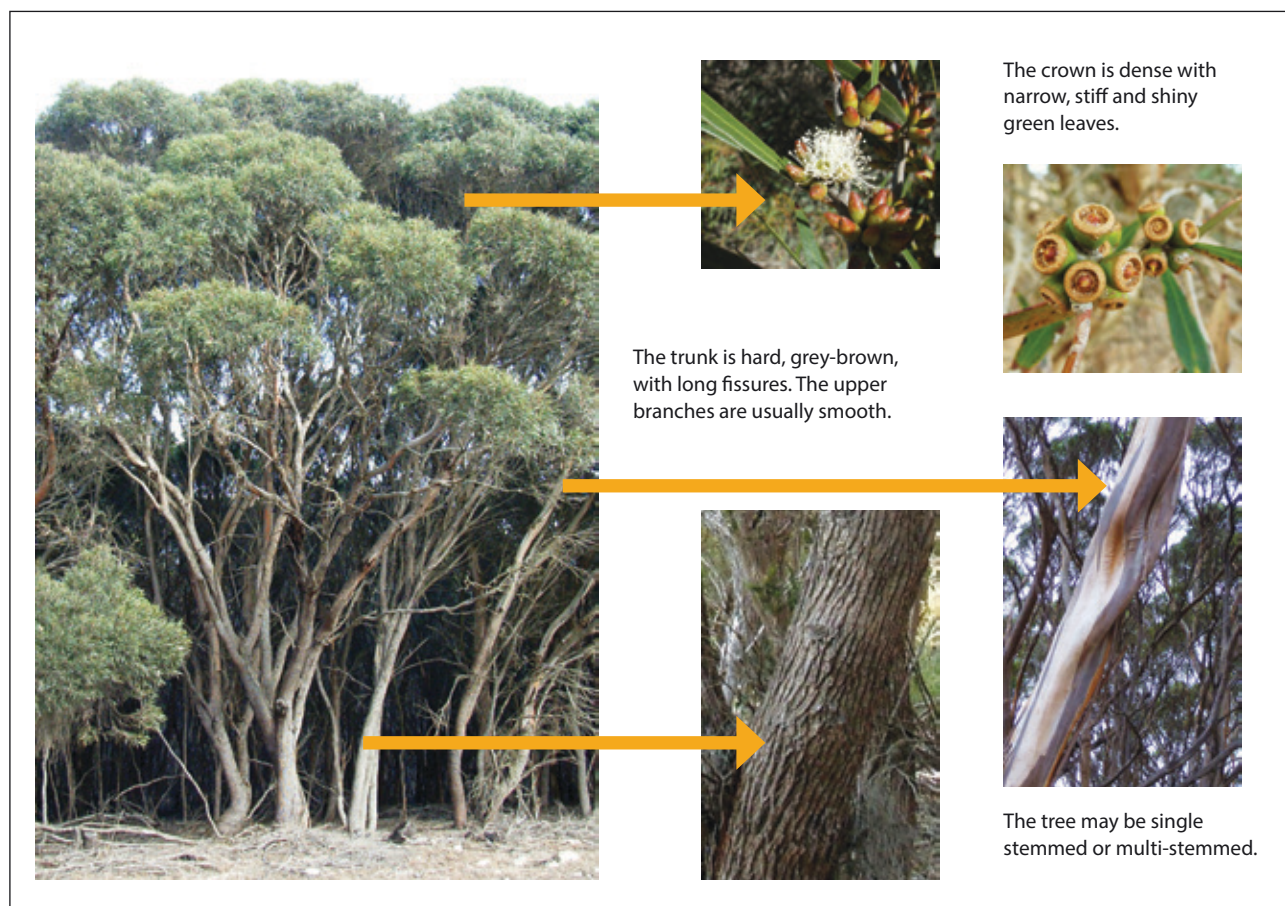


Figure 1: Some key features that help to identify Kangaroo Island Narrow-leaved Mallee, (*Eucalyptus cneorifolia*).
(Matt White and Rosemary Purdie)

Many patches of the KI Mallee Woodland are considered to be in a mature to senescent state that has not been burnt in many decades. The tree canopy is well developed. The understorey is generally sparse with considerable bare ground and plant litter. Some small trees or shrubs may be present, such as paperbarks/tea-trees (*Melaleuca* spp.), scarlet bottlebrush (*Callistemon rugulosus*), fringe-myrtles (*Calytrix glaberrima* or *C. tetragona*), Kangaroo Island correa (*Correa reflexa* var. *insularis*) or heath thryptomene (*Thryptomene ericaea*). The grass-tree *Xanthorrhoea semiplana* subsp. *tateana* (yakka) also is sometimes present.

Disturbances, such as hot fire, can markedly change the appearance of a patch. The tree canopy cover is reduced or removed and replaced by mallee regeneration. Mass germination from the soil seed bank results in a highly-diverse and dense understorey. This thins out over time as shorter-lived shrubs and herbs progressively die out.

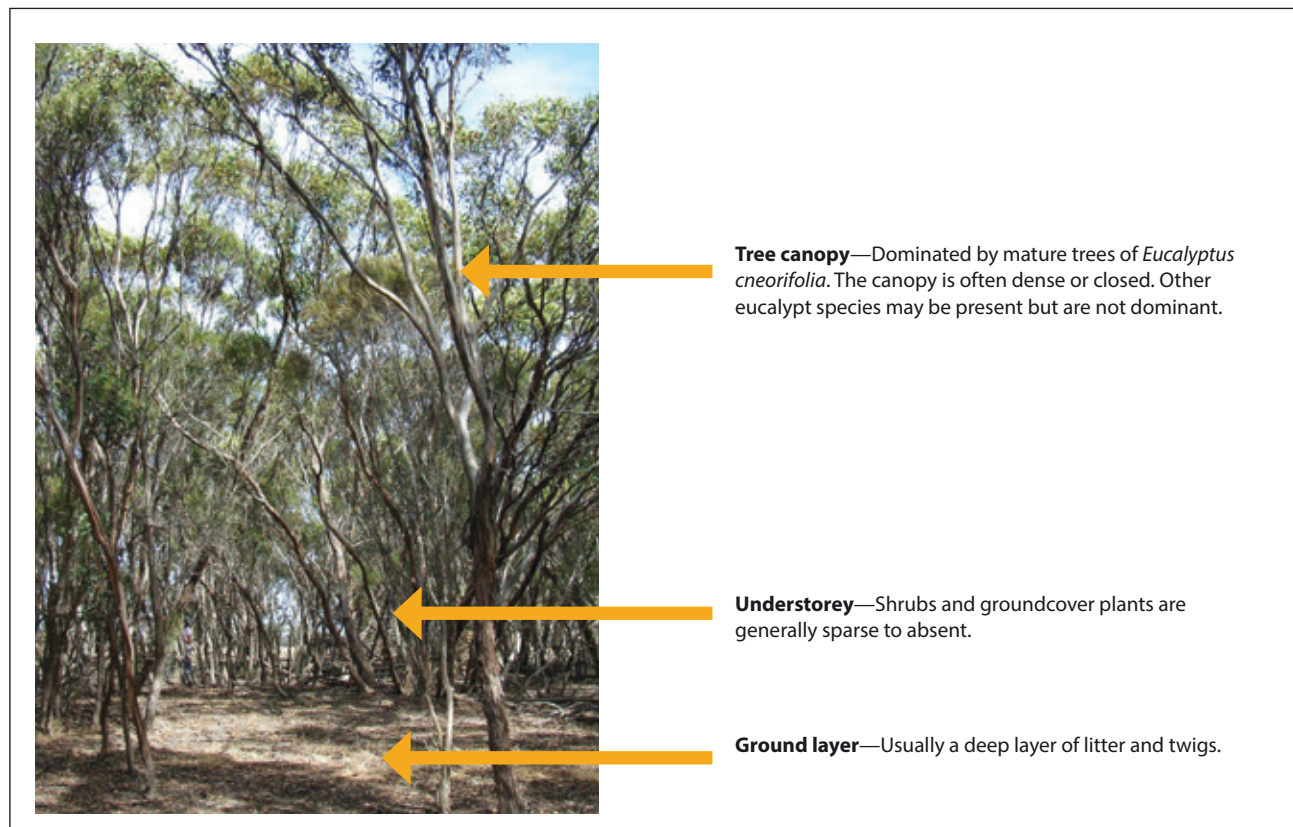


Figure 2: A typical mature patch of the KI Mallee Woodland ecological community. (Rosemary Purdie)

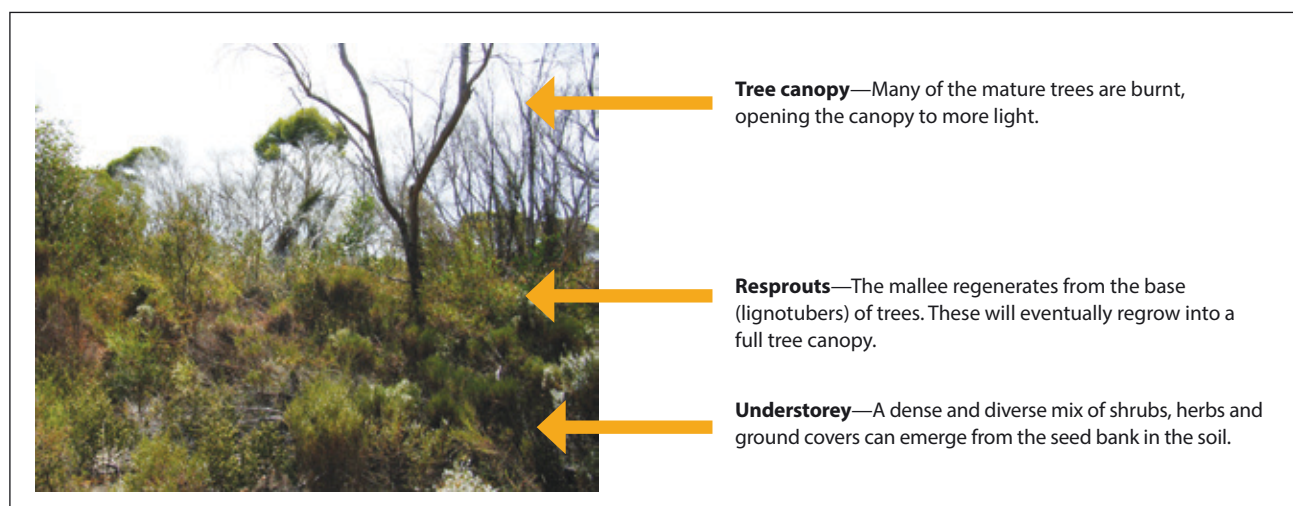


Figure 3: Recent fire can transform the ecological community into a highly diverse shrubland. (Rosemary Purdie)

Why does the ecological community need national protection?

In May 2014, the Minister for the Environment listed the KI Mallee Woodland ecological community after considering the advice of the Threatened Species Scientific Committee. A rigorous assessment of the scientific evidence supported listing as critically endangered as it met the eligibility criteria under national environment law. The Committee found that:

- the ecological community had undergone a decline of more than 90 per cent in its extent
- less than 7000 hectares now remains, most of which occurs as highly fragmented patches under 10 hectares in size
- it has experienced a very severe reduction in its community integrity due to the combined effects of fragmentation, changes to natural fire regimes and weed infestations.

The overall aim of listing is to prevent its further decline and to provide support to on-ground efforts that ensure its long-term survival. The **conservation advice** outlines a range of priority research and management actions that provide guidance on how to manage, restore and protect the ecological community.

Are all patches protected under the listing?

No, listings of ecological communities have condition thresholds that identify when a patch is too degraded for the purposes of protection under national environment law. This allows national protection to focus on the best and most intact patches that remain of a listed ecological community.

The condition thresholds effectively mean that small, degraded patches—such as individual paddock trees, narrow patches, or remnants where the understorey has been largely replaced by weeds—are excluded from a listed ecological community and any actions do not need to be considered under the national environment law.

Minimum condition thresholds

Simple minimum condition thresholds have been developed for the KI Mallee Woodland ecological community, based on patch widths of 60 metres.

- Patches that have a width of 60 metres or more tend to retain intact native vegetation and qualify as the listed community.
- Patches that are less than 60 metres wide along most of their length tend to be degraded, with low native species diversity and high weed cover, and are excluded from the listing. This excludes most stands on farms that serve as windbreaks or shelterbelts, as well as narrow remnants that lie along road verges.

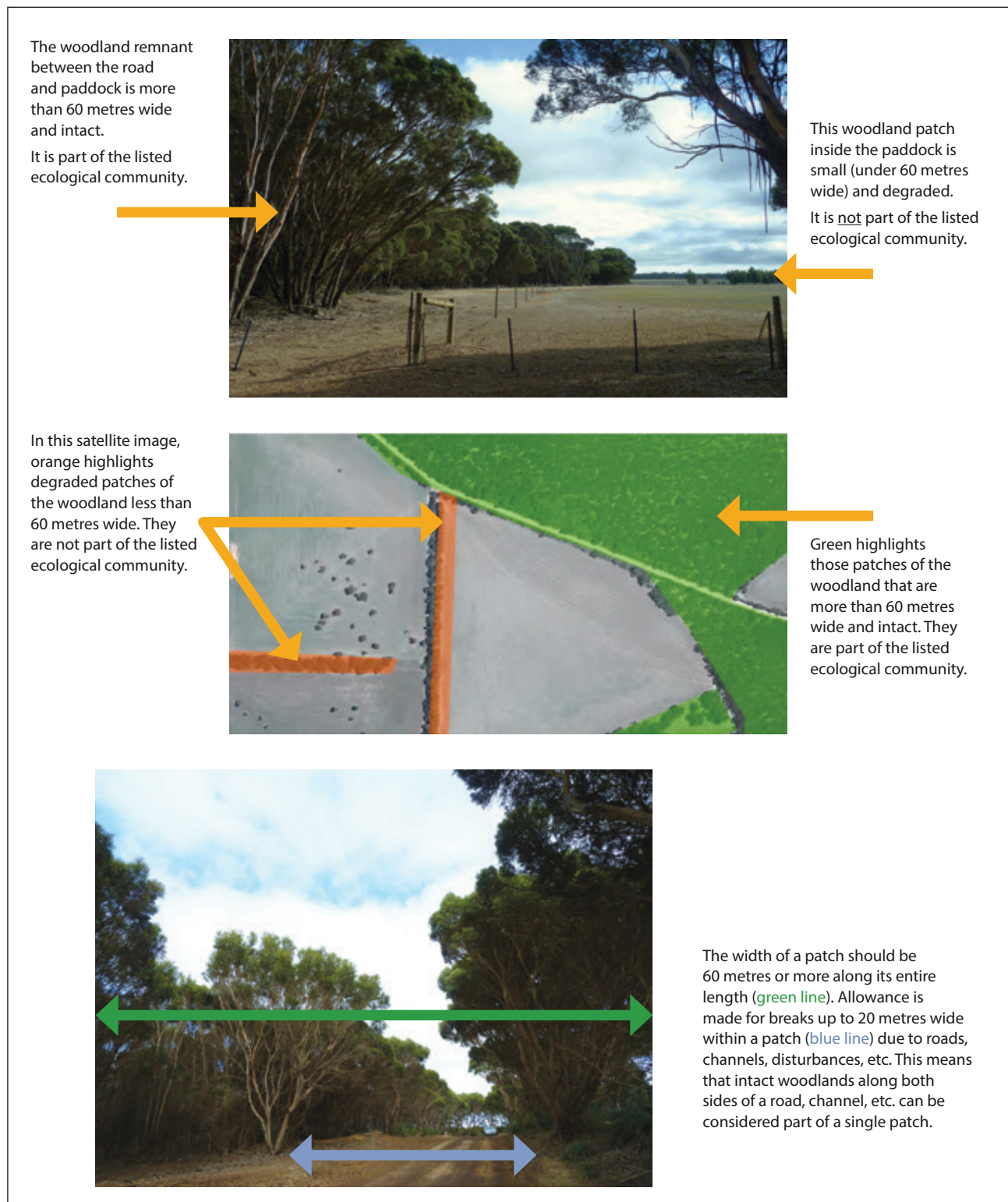
Breaks in vegetation cover of up to 20 metres wide within a 60-metre wide patch are acceptable, and allows for roads, tracks, drainage lines or other disturbances that traverse a patch. It also allows intact roadside remnants that lie along both road verges to be considered part of a single patch.

Short stretches of the ecological community less than 60 metres wide are included if they connect patches that are 60 metres or more wide and less than 500 metres apart. This would apply, for instance, to roads where the ecological community occurs along both verges but there are occasional breaks in vegetation cover along one side of the road only.



Degraded occurrences such as isolated trees or narrow remnants along roadsides or in paddocks are excluded from the listed ecological community. (Rosemary Purdie)

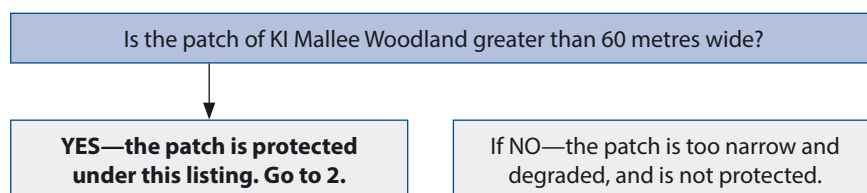
Figure 4: Applying the 60-metre condition threshold to the KI Mallee Woodland ecological community. (Matt White)



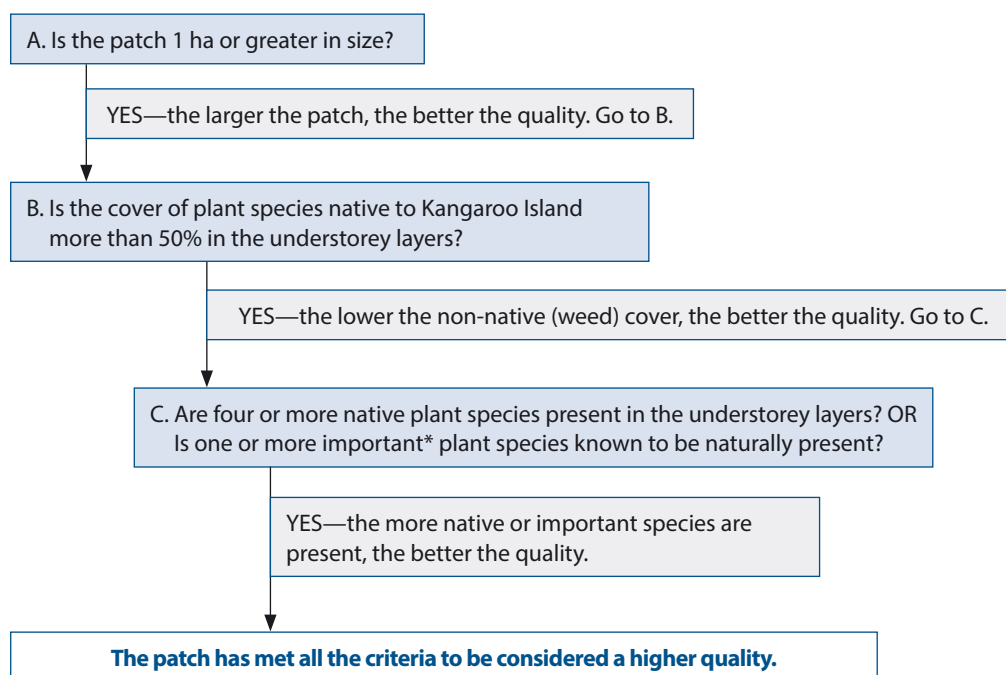
High quality condition thresholds

In addition to the minimum condition thresholds on the previous page, there are further criteria to determine if a protected patch is of higher quality. The presence of high quality patches is indicative of land management practices that support the conservation of the ecological community and should be encouraged. Continuing the protection of such patches is a priority for management and recovery efforts. Higher-quality sites also provide a benchmark for the improvement of lower-quality patches. The flowcharts help to determine if a patch of the KI Mallee Woodland meets the minimum and higher quality condition criteria.

1. Identifying the minimum condition thresholds for a patch to require consideration under the EPBC Act.



2. Identifying if a patch is of higher quality for conservation. These help identify the sites with extra values for protection under the EPBC Act. A patch must meet all the criteria, below, to be considered of higher quality.



* An important plant species is a plant that is either: listed as threatened under national law or in South Australia; or only found on Kangaroo Island; or has a distribution in SA that is mostly on Kangaroo Island. A list of species is provided in the Conservation Advice for the ecological community.

For further detail regarding the key diagnostic characteristics, how to define a patch and determining the condition of the ecological community see the **Conservation Advice** at:

www.environment.gov.au/cgi-bin/sprat/public/publicshowcommunity.pl?id=102&status=Critically+Endangered



KI Mallee Woodland on limestone outcrop. (Matt White)

What are the benefits of listing an ecological community as nationally threatened?

There are a number of benefits to listing ecological communities under Australia's national environment law:

- Listing an ecological community can help to protect the landscapes that provide connectivity, corridors and refuge essential to protect and improve the ecological function, health and biodiversity of the region. It can protect habitat critical for refuge and recruitment of threatened species and for other species that are under pressure in the region. In turn, this helps foster the ecosystem services associated with an ecological community.
- Listing threatened ecological communities helps protect them from future significant human impacts that may cause further decline. The aim of the national environment law is to ensure the matters of national environmental significance are given due consideration, along with broader economic, social and other issues in the planning of any large projects. Where possible, significant adverse impacts to the environment should be avoided, or the impacts mitigated, reduced or offset, when unavoidable.
- National listing encourages agencies and community/Landcare groups to apply for environmental funding opportunities for conservation and recovery works. The Australian Government has a variety of funding programmes to encourage land managers to continue to conserve biodiversity and ecosystem services on their properties.
- A **conservation advice**, published at the time of listing, provides guidance and options for decision-making, including rehabilitation and conservation initiatives.
- In the case of the KI Mallee Woodland ecological community, the listing will:
 - provide landscape-scale protection that complements existing national protection for threatened species that are found within the ecological community
 - protect the environmental values, including the ecosystem functions and services associated with the ecological community, which contributes to the long-term productivity of the landscape
 - raise awareness about the ecological community and provide a range of environmental benefits that may support tourism and recreation activities.



KI Mallee Woodland with yakka grasstree. (Matt White)

What does the listing mean for landholders?

The EPBC Act is triggered if an action has, or will have, a significant impact on the KI Mallee Woodland ecological community. If a proposed action is likely to have such an impact, it would require:

- a referral to determine if the action may have a significant impact on the ecological community; if found likely to have a significant impact, then the action needs:
 - an assessment (the scope of the assessment depends on the complexity of the proposed action and impacts); and
 - a decision on approval from the Minister (who considers all the environmental, social and economic factors).

Strict timeframes apply to assessments to ensure decisions are made as quickly as possible.

The condition thresholds outlined above for the ecological community exclude many patches on properties or along roadside verges that are considered too degraded for protection. In addition, the EPBC Act provides exemptions for continuing (routine) use or where legal permission has previously been given.

The normal activities of individual landholders, residents and councils will typically not be affected by a listing. Routine property maintenance, land management and other established practices, such as ongoing road maintenance works, are unlikely to have a significant impact and so do not typically require referral under national environment law, particularly if carried out in line with other national and state laws covering native vegetation.

For instance, the following actions are unlikely to trigger national environment law:

- ongoing grazing, horticultural or cropping activities
- maintaining existing fences, roads, internal access tracks and firebreaks
- maintaining existing farm gardens and orchards
- maintaining existing farm dams, water storages, pumps and drainage lines
- replacing and maintaining sheds, yards and other farm buildings
- controlling weeds and spraying for pests on individual properties or roadside verges
- maintaining roads in a functional and safe condition.

In all these cases impacts on important patches of the ecological community—such as high quality patches and important corridors for wildlife—should be avoided.

Whether or not an action is likely to have a significant impact depends on the sensitivity, value and quality of the environment which is affected, and on the intensity, duration, magnitude and geographic extent of the impacts.

The major activity that is likely to have a significant impact on the ecological community is permanently clearing important areas of intact or high-quality native vegetation. Examples of this may include:

- major mining, residential, commercial or other industrial development
- building new roads or widening existing roads
- converting large areas into new pastures or cropping fields.

To help reduce the significance of actions, the EPBC Act promotes the avoidance and mitigation of impacts from the early planning stage, wherever that is possible.



Canopy of KI Narrow-leaved Mallee trees. (Matt White)



Bridal creeper invading native vegetation understorey. (John Baker)

Have activities previously been referred under the EPBC Act for this area?

In the area where the KI Mallee Woodland ecological community occurs, some developments and activities have previously been referred for consideration under the EPBC Act due to possible impacts on threatened species that are already nationally protected. No activity has been rejected outright, although some may have been approved with conditions to improve protection of the threatened species.

Do state or local environment laws also apply?

Yes, all native vegetation in South Australia is protected by the South Australian *Native Vegetation Act 1991* and the *Native Vegetation Regulations 2003*. However, these state laws do not replace or stop the operation of the national environment law.

The state legislation ensures that areas of high conservation value are protected and that minor clearance is subject to a thorough assessment process. The Native Vegetation Council (NVC) is responsible for providing advice and for making decisions about the removal and re-establishment of native vegetation in line with state laws. The NVC also administers the Native Vegetation Fund.

Legal clearance of native vegetation may be permissible through one of two mechanisms: either by an application to the NVC or under exemptions contained within the *Native Vegetation Regulations*.

The Kangaroo Island Council manages roadside native vegetation in accordance with the *Kangaroo Island Council Roadside Vegetation Management Plan 2007*, which has been authorised by the NVC. The plan gives the Council delegated authority to clear, and approve clearance by another party, under the *Native Vegetation Act*.

Further information is available online on:

- managing native vegetation in South Australia
www.environment.sa.gov.au/managing-natural-resources/Native_vegetation/Managing_native_vegetation
- the Native Vegetation Council
www.environment.sa.gov.au/about-us/boards-and-committees/Native_Vegetation_Council
- the Kangaroo Island Council roadside management plan
www.kangarooisland.sa.gov.au/vegetation



Kangaroo Island echidnas can occur in native vegetation remnants. (Matt White)

Where can I get further information?

Further information about the ecological community and the EPBC Act is available on the Department of the Environment website:

- Comprehensive Conservation Advice for the ecological community
www.environment.gov.au/cgi-bin/sprat/public/publicshowcommunity.pl?id=102&status=Critically+Endangered
- EPBC listing process
www.environment.gov.au/topics/threatened-species-ecological-communities
- EPBC referral and approval process
www.environment.gov.au/topics/environment-protection
- Australian Government natural resource management initiatives
www.nrm.gov.au/

Enquiries also can be made through the Department's Community Information Unit by phone on **1800 803 772** (freecall), or email at ciu@environment.gov.au

Further advice also may be available from:

- Your local NRM authority:
www.naturalresources.sa.gov.au/kangarooisland/home
- State environment agency:
www.environment.sa.gov.au/Home
- Local council:
www.kangarooisland.sa.gov.au/page.aspx

