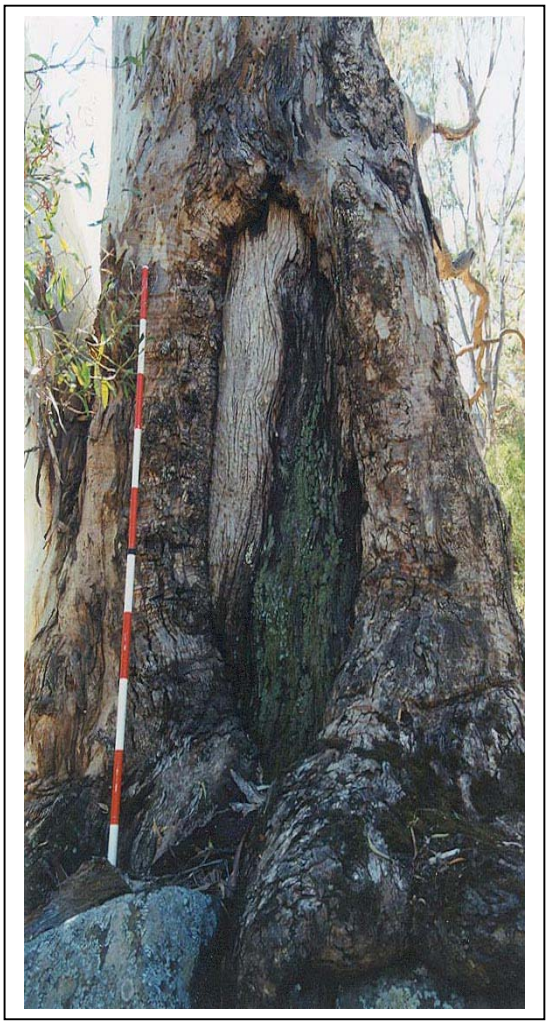
Scarred Trees

An Identification and Recording Manual



Prepared for

Aboriginal Affairs Victoria

by

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Background

This manual has been prepared to assist in the identification and recording of Aboriginal scarred trees in Victoria. Scarred trees form one of the most distinctive and visually impressive forms of Aboriginal heritage site in Victoria, and yet they are also one of the least understood.

The manual consists of three parts;

- *Section 1:* An introduction to scarred trees, including an explanation of how they form, why they are important, what they can tell us about Aboriginal culture and what we can do with the information they provide.

- *Section 2:* A review of the different types of scarred tree, deliberate, natural and incidental.

- *Section 3:* A basic guide to identifying and recording scarred trees, explaining what features to look, how to assess the information they tell us and preserve them for the future.

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Section 1: Introduction

What are Scarred Trees?

Scarred trees are caused by the removal or loss of bark, due to a wide range of natural, accidental or deliberate processes. This results in a panel of wood (called a 'dry face') exposed on a tree trunk or limb, where the tree has been damaged. Bark can no longer grow on these 'dead' sections of tree, and the underlying wood will start to weather and crack. In some cases trees will bear these scars permanently, though given enough time they can often seal the damage by closing over the wound with new growth extending across the dry face from adjoining areas (called 'overgrowth').

This 'classic' curved scar has been modified by more recent fire damage (Shepparton, NE Victoria).

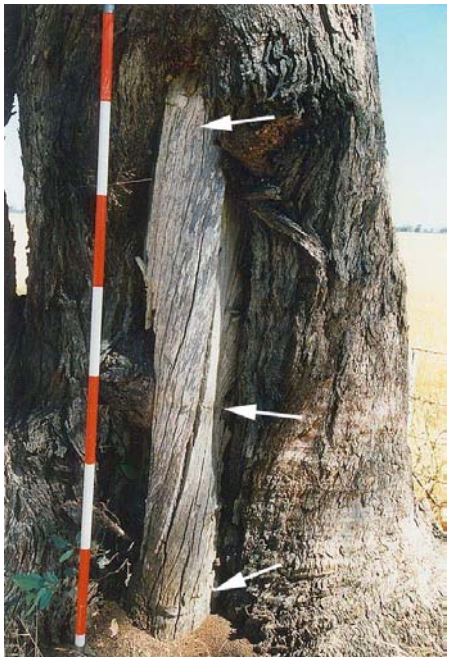
Aboriginal scarred trees are trees which have been scarred by Aboriginal people through the deliberate removal of bark or wood. There are numerous reasons why Aboriginal people took bark from trees, as it was a versatile and plentiful material that could be used for a wide variety of purposes, including shelter materials, watercraft, containers and many other artefacts. Other forms of scarring include the deliberate marking of trees, the removal of wood for artefact manufacture or to access the centre of the tree for collecting food or the manufacture of holds for climbing the tree.

A line of small rectangular scars on a single tree, overgrowing at different rates (Boort, NW Victoria).

Early European settlers copied Aboriginal techniques of bark stripping, through for a more limited range of uses, mostly cladding and roofing buildings. It is often very difficult to distinguish scarred trees resulting from 'traditional' Aboriginal activities, with those made for a later purpose.

Any cultural scar longer than 3 metres is most probably the result of canoe manufacture (Goulburn River, Mitchelltown).

Today, people rarely strip bark deliberately, and its use has been entirely superseded by widely available manufactured products. As such, most 'authentic' scarred trees are over a hundred years old, and are becoming increasingly hard to find as the host trees age, die or are removed. However, there are a wide range of natural and incidental impacts that continue to form scars, many of which can be mistaken for evidence of deliberate cultural scarring.

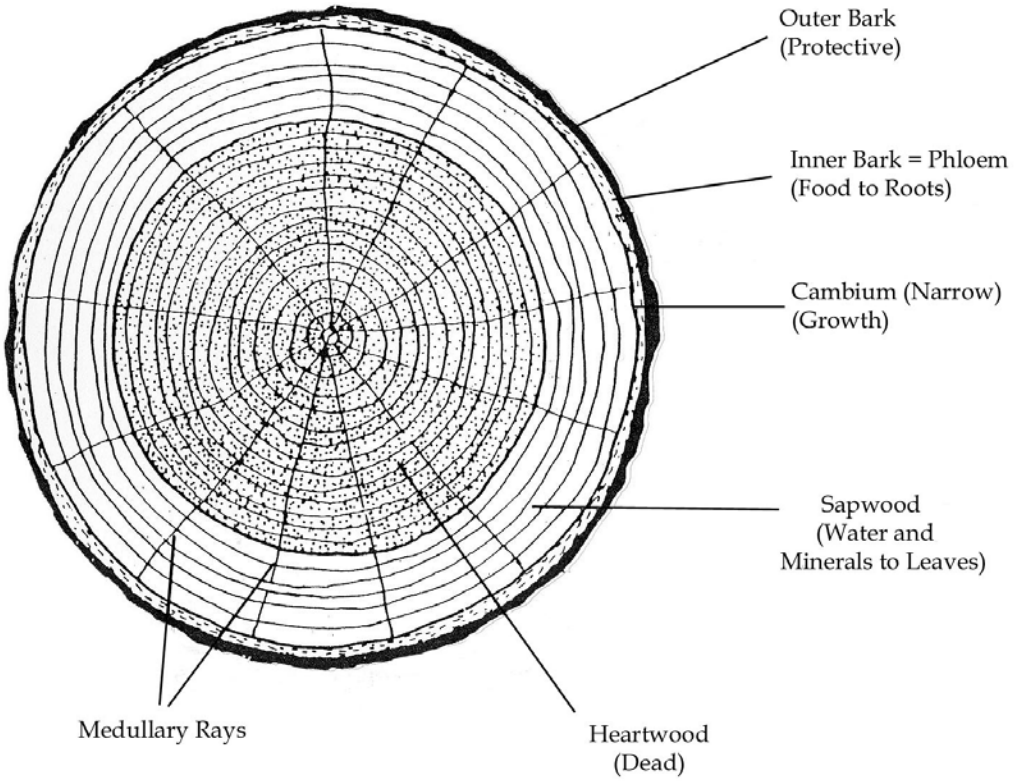


A scar made from the removal of two separate sheets of bark. The arrows indicate lines of tool marks where the bark was cut (Yundool, NE Victoria).

A sleeve has been removed from around this entire tree bole, resulting in tool marks at both top and down the side (Bumbang Island, Robinvale).

How do Trees Grow and Scars Develop?

All trees grow, that is increase in girth and height, by adding a sheath of wood over the whole of the existing stem and branches but inside the covering layer of bark. This growth takes place by division and expansion of the cells in the '*cambium*', or growth zone that occurs at the interface between bark and sapwood.



(Source: Hadlington & Johnston 1979)

When bark is removed from a section of tree, the cambium is damaged as the bark is separated from the stem, and the cells exposed will dry and die. Once the cambium has been killed, growth ceases under the dead cells until the wound has been covered by fresh tissue invading from the sides. This fresh tissue is known as 'accelerated growth callus' or 'overgrowth'. The wound is also often associated with the growth of an 'epicormic stem', which sprouts from the base of the scar. The development of this subsidiary limb is stimulated by an interruption of the upward flow of water and plant nutrients, and provides an alternative conduit to a leaf system.

This new wood may be pressed onto the 'scarred' surface but will never bond with it. As the scar is 'healed' from both sides, the 'callus tissue' will eventually meet and, with continuing overgrowth, the cambial cells from the two sides will join and ultimately hide the scar beneath new wood and bark.

Damage to the cambium, by removal of bark, normally stimulates cambial growth around the margins of the wound with minimal response at the upper

and lower ends, and enhanced growth along the sides. Because the healing of a wound takes place in this manner, the visible or apparent dimensions of a partially healed, or occluded wound may bear little relationship to the original dimensions of the wound. If left to develop naturally most scars will assume a round-ended 'canoe' shape regardless of the original cause or shape of the scarring event.

Features of Scarred Trees

The common features of tree scars are:

- *Dry Face* – this is the dead, exposed timber that forms the scar surface. As the scar ages, the dry face becomes increasing cracked and weathered. Tool marks where the bark was cut and prised away are often preserved towards the top, bottom and occasionally across the centre of the scar.

- *Overgrowth* - the scar tissue or 'accelerated growth callus' that forms along the sides of a dry face. This is a natural response from the tree to cover the damaged area rapidly and protect the wound from decay and infestation. Overgrowth generally develops at a much faster rate than the tree's normal growth, and is often distinctive from the surrounding bark. Eventually wound may be completely absorbed into the trunk and hidden from view by overgrowth.

- *Epicormic stem* – a subsidiary limb which can often develop at the base of a scar. This is also part of the trees natural response to damage, by providing a way for the root system to re-connect with the leaf system, thus

The dry face of this red gum scar has been completely covered with overgrowth. Only a vertical join and distinctive radial 'creaselines' along the margins show where the scar is hidden (Bumbang Island, Robinvale).

An epicormic stem has developed at the base of this stringybark scar (Halls Gap, the Grampians).

ensuring a two way flow of starches from photosynthesis, water and plant nutrients from the soil. Without epicormic development, the root system below a large scar may die, seriously weakening the tree.

- *Dieback* – an area of secondary damage above or below a scar, directly linked to, but separate from the original scarring process. Typically this will occur where a large bark removal scar has interrupted the free flow of water and nutrients, which are forced to divert widely around the damaged area, thus killing off a larger part of the tree than originally affected.

The dry face of this scar has been extended by dieback. The arrows indicate two lines of tool marks showing the length of a wide bark removal scar (Barmah, Northern Victoria).

Why We Look for and Record Scarred Trees

1. The main reason is to ensure their future protection. Realistically, this can only be achieved if their location, or approximate location is known. Scarred tree protection may involve recognising the existence of a scarred tree so that it is left unharmed by a development or other form of human land use, such as logging, firewood removal or pasture clearance, or taking steps against a natural or incidental process such as bush fire, stock damage, vandalism, timber rotting or tree collapse.

A 10 year old scar on a vigorously growing young River Red Gum, clearly showing the original outline and overgrowth callus tissue (Mooroopna, NE Victoria).

2. A second reason is that scarred trees are significant evidence of Aboriginal occupation in what is now a highly modified, agricultural

landscape. There are few agricultural regions in the world where signs of pre-modern indigenous activities are preserved in the fabric of living plants. This makes the Victorian scarred trees a record of human activity of potential world importance.

3. Thirdly, they can tell us much about past Aboriginal activities in the area that they are located, which can help us understand and preserve information about Aboriginal culture and the way in which it interacted with the environment. Scarred trees are evidence for the use of perishable materials which rarely survive in archaeological sites, and only a very few bark artefacts have been preserved in Museum collections.

This unusual scar is the result of a mistake. The bark sheet tore when it was being removed, leaving much of the cambium of the left side intact. (Bumbang Island, Robinvale).

What can we Learn from Scarred Trees?

There is an enormous amount of information that can be gathered from scarred trees, though so far this potential has not been widely explored. Generally, the more scars are recorded, the more we can learn from them. When several hundred scarred trees have been recorded, we begin to get a clear picture of the diversity of scar forming activities within a particular area.

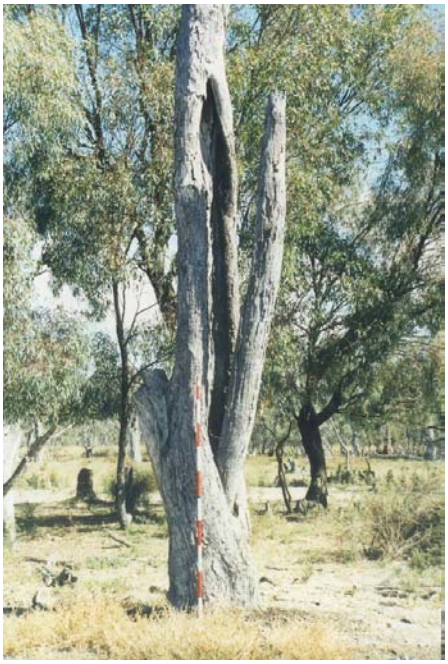
This scar was entirely hidden from view until the collapse of the tree split the trunk open. Mature red gums in particular may have numerous scars hidden behind their apparently seamless bark (Walgett, NSW).

Here are just a few of the ways in which scarred tree information can be used.

- They are an important record about traditional places and events in Aboriginal history, and can help us visualise how the landscape would

have looked before clearance.

- Scarred trees represent places where an Aboriginal event took place, generally the manufacture of an artefact, such as a canoe, the erection of a shelter, or food collection. This allows us to study where these activities generally occurred, and identify aspects special to a particular region or tribal group.



The dry face of this canoe scar has decayed at a faster rate than the dead tree which it was on, causing it to fall out of its surrounding overgrowth (Gunbower, near Cohuna).

- The characteristics of a scar can tell us much about the nature of an activity, and the role that bark performed in the activity. For instance, by looking at the shape, size and position of a group of scars we can tell whether bark sheets were commonly used for building shelters, or whether other materials must have been used.

- The natural characteristics of the tree, scar and its overgrowth can tell us much about the age of a scar, and the age of a tree when it was scarred.

This unusual shaped scar is clearly defined by tool marks, possibly made by adjacent steel wedge (inset). This scar was located on a reserve where Aboriginal people lived until at least the end of the 19th century (Longerenong, Horsham).

- The number of times a tree has been scarred can tell us a lot about the local availability of suitable bark, which gives us information about the intensity of scarring activities and the number of Aboriginal people living in that area.

Section 2: Common Types of Scarring

In this section three main types of scarring causes encountered in Victoria are described; these are deliberate cultural scarred trees, as well as scars resulting from natural or non-deliberate ('incidental') processes.

A. Aboriginal Scarred Trees

Before European settlement, Aboriginal cultural activities resulted in large numbers of deliberate bark removal scars throughout the landscape. Although bark was also used in other traditional cultures around the world, it appears to have been of highest importance to Aboriginal people living in the forested parts of south eastern Australia. Early explorers, like Hume and Hovell, tell us that trees bearing Aboriginal 'marks' were located even in the most remote places. Scarred trees were a very common feature of the landscape during the 19th century, though land clearance and natural tree healing processes have removed or obscured much of this evidence by today.

After European settlement, Aboriginal people continued to collect bark for their own purposes, as well as being employed to strip bark for settlers huts. Most of the scarred trees visible today are thought to date to this period. Many Aboriginal people have continued the tradition to the present day, and some scars used to make canoes or shelters are only a few decades old.

Because of this long association, scarred trees have special significance to Aboriginal people today, and a large number of scars can be directly connected to Aboriginal activities. There is, however, much overlap between scars of Aboriginal and European origin, and scars made by Aboriginal origin for a European purpose.

Fortunately there are a number of common characteristics that can distinguish exclusively Aboriginal scars from other types.

- Aboriginal scars are reflected a wide range of bark removal, wood removal and toe hold scar forms.

- Aboriginal scars may occur on a wide range of tree species, including various gum, box and stringybark species.

- Aboriginal bark removal scars have a wide range of sizes and shapes, reflecting the numerous purposes for which it was used.

A rare example of tool marks from a scar with curved ends (Gunbower Island, NE Victoria).

- Scars deliberately positioned on a bend in the tree are invariably Aboriginal in origin. These are termed 'curved pre-forms', and were used as canoes or containers, depending on their size.

- Deliberate scars greater than 3 metres in length were normally used for canoes. These are invariably Aboriginal in origin.

- Aboriginal scars can occur in a wide range of positions around the trunk and limbs of a tree.

- Traditional Aboriginal scars will not display marks made by a full size woodsman's axe (10-15 cm L), but post-contact ones may.

This dead tree has numerous small rectangular scars on it, most of which have entirely healed over (Lake Boort).

- Scarred trees with three or more scars are generally Aboriginal in origin.

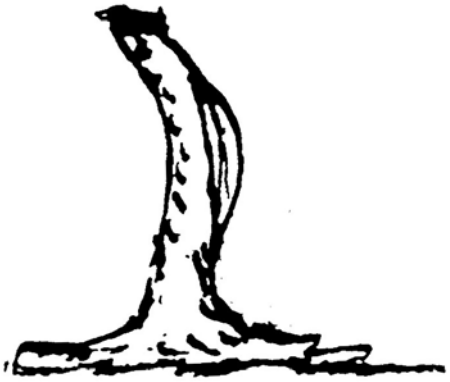
- Scars with stone tool marks will have an Aboriginal origin.

- Scars older than 170 years in age will be Aboriginal in origin. This may only be determined through scientific dating.

Aboriginal Scar Forms

1. Curved (pre-form) bark removal scars

This category consists of circular, oval or elongated scars resulting from the removal of a pre-formed artefact, such as a canoe or container, that took shape from a curved section of either the tree bole, a major limb or a large burl. The original curvature is frequently disguised by subsequent growth in the tree, but is invariably preserved in the scar dry face.



A curved pre-form scar, drawn by George Augustus Robinson in the 1840s.

2. Bark slab (sheet) removal scars

Sheet and slab artefacts are produced from rectangular or square sheets of bark. Invariably these slabs did not actually require a specific form; the resultant shape was, therefore, a matter of convenience in the removal process. Historical photographs of stripped trees and shelters suggest that sheets of various sizes and shapes were utilised as part of a single shelter. Sometimes these bark pieces required further shaping, such as flattening, or modification and it is possible that large sheets were divided to create smaller items.

A bark slab scar. Note the square end at the top of the scar (nr Broken Creek, North east Victoria).

In contrast to curve-formed artefacts, the larger pieces were probably manufactured from mature trees with a larger circumference; this would produce larger, flatter sheets requiring less manipulation. The main trunk characteristics required were a straight stem with no surface defects.

Measurements from surviving scarred trees indicate that bark was commonly removed from 50-75 per cent of the bole circumference, though sometimes the bark was removed as a sleeve around the entire trunk, effectively killing the tree.

3. Toe holds

Toe holds are a series of small incisions into the bark designed to create a hold to assist with tree climbing. Although they are commonly known as 'toe holds', the shallow cuts could be equally used with the hands. Normally they occur in staggered lines on steep to moderately steeply angled trees resulting from a single tree climbing event. Given the small size of these scars, authentic Aboriginal toe holds are only found on dead trees.

Toe holds on a dead tree (Natimuk, Wimmera).

4. Resource extraction holes ('Possum holes')

These features consist of holes cut into a hollow trunk or limb for means of accessing game (e.g. possums and birds) or honey. Two types are currently documented:

- Smoke holes – usually located at the base of the hollow section of a tree. A hole will be cut and a fire lit to smoke the game out onto an accessible part of a tree. Frequently, these will be cut through existing scar surfaces. Occasionally additional holes will be cut further up the trunk. There will often be associated indications of burning.

A partially closed over smoke hole (Mt Korong, nr Wedderburn).

- Access holes – usually located higher up in the tree. These will be cut to get direct access to animals sheltering in a cavity within the tree or a bee's nest.

The age of these features is open to question, and all such holes observed by the author have been cut by steel axe, and occasionally by chainsaw. It is probable that many of these scars were created during the Depression by Aboriginal and European people alike attempting to live off the land.

5. Other scar forms

There are a number of other historically documented scar types which have not been convincingly identified as Aboriginal sites in Victoria. Many of these scar types caused only slight damage to the tree, and may survive only on dead trees.

- *Bark strip removal scars* - Strip and fibre bark components were used in the manufacture of a wide range of artefacts and consumable commodities, such as fishing line, nets, fire brands, tinder, blankets and clothing accessories. The raw material was generally collected in small pieces, such as strips removed from fibrous tree species. In most cases the final product did not resemble the size and shape of the original piece of bark removed, or the artefact was formed using only the outer bark, making it difficult correlate function with any surviving scarred tree evidence. Furthermore, this evidence is less likely to survive in the archaeological record, as damage to the trees was generally slight and tended to affect species with a limited longevity, such as shrubs. It is unclear in the literature whether bark fibre was pulled directly from the trees, or whether bark panels were removed first, with fibre subsequently extracted after the soaking phase.

A historical bark strip removal scar (Mt Korong, NW Victoria).

A curved pre-form made from a burl, probably used to make a container. This is only known example of this scar type (Boort, NW Victoria).

- *Grub procurement scars* - The ethnohistorical literature suggests that grubs found beneath the bark of many species of tree formed an important part of traditional Aboriginal diet, and were considered a delicacy. Descriptions of the process of obtaining these grubs involve the hewing away of the bark, both for individual grub holes and over large areas of grub-infested trunk.

- *Marked and carved trees* - Tree marking and carving were documented in Victoria during the 19th century, though no

surviving physical evidence for them has been identified to date.

- *Wood removal scars* - Various wooden artefacts were manufactured from different parts of trees by Aboriginal people, such as shields, boomerangs and waddies. There is little direct physical evidence for this activity, as in many cases an entire limb was removed to produce the artefact, leaving few identifiable traces. Given the rapidity with which these deep, but relatively narrow incision will be occluded, it is considered that this activity will only be evident through oral information or on trees that died soon after the scarring event.

B. European Scarred Trees

European people rapidly adopted bark as a construction material and a raw material for various manufacturing processes (e.g. tanning), during the earliest days of settlement (post-1830s). During this period a large number of trees were debarked for purposes unrelated to the Aboriginal use of bark, however much of this activity resulted in the widespread felling or destruction of trees which will not survive in the landscape today.


BARKING GUM-TREES.

The exclusive European use of bark was highly limited, resulting in a restricted range of scar type and scar position. There were also a number of modifications to the method of stripping bark that help distinguish scars of likely European origin from Aboriginal scars. These include the types of tool used, the methods of cutting and excising the bark slab and the quantity of bark removed from each tree. In general, the historical European use of bark was highly destructive to the environment, whereas deliberate care appears to have been taken by Aboriginal people to manage and preserve the resource for future use. Many aspects of European bark removal are well documented in early accounts and 19th century instruction manuals for settlers.

The following features can be used to distinguish European scarred trees.

- Historical European scars are generally limited to bark removal scars and resource extraction holes.

- European scars occur on a selected range of tree species, mostly stringybark, messmate and box species. River red gum appears to have been seldom used.

- European bark removal scars are limited to rectangular panels, approximately 1-3 m in length, which reflect their primary use for building cladding.

- Large scars may be divided up into two or more panels, separated by a line of tool marks where the sheets have been split.

- European scars are invariably located at the base of a tree, generally ending within 0.5 m of the ground surface.

- Europeans made frequent use of a full size woodsman's axe (10-15 cm L), especially when severing the bark slab near ground level. Steel hatchets were often used at the top of the scar, but never stone tools.

Zig-zag axe marks (Locksley, NE Victoria).

- Cross-diagonal ('zig-zag') tool marks are a common feature of European scars, especially at the top of the scar.

- European scars will be less than 170 years in age.

European Scar Forms

There are three types of European scar which occur frequently in Victoria.

- *Roofing scars* - These rectangular bark slab removal scars generally conformed to a standardised length (1.5-2.5 m), though the width of

panels varied according to the girth of the tree. They can only be readily be distinguished from Aboriginal shelter scars by their relatively recent age, the presence of zig-zag tool marks and the use of full size axes (10-15 cm blade L) when cutting the bark.

- *Survey and blaze marks* – These comprise a range of small square or triangular cuts on the lower bole of a tree, representing survey markers. They are frequently found in road reserves and on river banks.

- *B*ark *strip scars* – In north west Victoria, amorphous scars with parallel lines of tool marks have been identified, indicating where long strips of bark have been removed. Their precise purpose is unclear, though they are all relatively recent in date.

A large European bark removal scar, in two panels separated by cross-diagonal tool marks (Goulburn River, nr Seymour).

A series of lightning scars winding around a tree trunk (Moree, NSW).

C. Natural Scarred Trees

A wide range of natural processes can cause scarring. Generally these processes have diagnostic features that distinguish them from deliberate scars. Some natural processes can be quite traumatic and often create more damage than would occur from bark removal alone.

Lightning strikes

Lightning is discharged to earth through sap in the cambial layer between the bark and sapwood of a tree. The bark is seared in the process and either splits on impact or subsequently sloughs away.

Typical characteristics:

(a) These scars are very common in forested areas, particularly on river red gums, which, as a species, tend to survive these traumatic events more effectively. Due to the damage inflicted on the tree the degree of overgrowth is comparatively limited and the tree is reduced in vigour following the scar event.

(b) The process invariably forms thin, elongated scars extending down the length of the tree, usually widening towards the base and often curving around the trunk.

(c) Dead branches and/or stubs generally protrude from the scarred surface.

(d) Branch tears (see below) and splintering to the upper limbs of the tree are often associated with fire damage caused by the lightning strike.

(e) The scar may develop into an extensive hollowed area, particularly when also affected by fire. The exposure of extensive areas of sapwood will ultimately result in the premature death of the tree.

Misidentification:

These scars can be confused with irregular, elongated ('canoe') scars with obscured or damaged bases, particularly if they have rounded margins. Check to ensure that the shape of the extant scar accurately reflects the area of the original scarred area. This can be achieved through an inspection of overgrowth patterns, variations in surface weathering and the presence of axe marks to determine between these two types.

Branch tears

The loss of a branch during or after high winds will invariably cause scarring. If the branch falls from the socket where it connects with the trunk, it will rip a section of bark, and possibly wood, away from the trunk below the limb.

A classic branch tear 'keyhole' (Gunbower, N Victoria).

Typical characteristics:

(a) Very common in river red gums, which are naturally susceptible to branch loss.

(b) This process leaves a characteristic keyhole or 'tear' shaped socket at any height on a tree.

(c) A prominent branch socket or cavity will be present at the top of the scar.

(d) The internal structure of the sap or heartwood is sometimes exposed due to the loss of the scar, but not necessarily in every case.

(e) The fallen branch may be located on the ground below the tear mark.

(f) The bole above the scar will frequently jut out, indicating the position of the 'crook' between the limb and the parent bole.

(g) The ultimate form of the scar will depend on the size of the branch lost. In the case of small limbs, the socket will frequently be occluded; larger cavities, however, will allow internal decay, resulting in irregular hollows. The resultant feature will continue to display a 'keyhole' shape and the pre-existing shape of the surrounding trunk area – for example, the pronounced jutting upper edge of the scar.

Misidentification:

Normally easy to spot due to the distinctive 'keyhole' shape, the jutting upper edge and the socket left by the branch; however, if this rots away it becomes less certain to distinguish between this scar type and hollowed cultural scars.

Larval activity

The formation of holes and galleries in the cambium and sapwood by grubs causes the death of the trunk section and the eventual loss of the bark. This is a gradual degenerative process that can take several years to result in a definable 'scar'.

Typical characteristics:

(a) The presence of numerous grub holes and galleries located across the scar surface. Galleries will take the form of shallow 'tracks' running across the dry face.

(b) The resulting scars are frequently irregular in shape, occur near the base of the tree and often extend down to ground level.

(c) If the tree has been affected for an extended period of time, compound scars can occur, resulting in subsidiary lines of overgrowth across the scar surface as the insects infest increasingly larger parts of the tree.

A scar caused by grub activity. Note the exit holes (Nagambie, NE Victoria).

(d) Grub activity can kill large parts of a tree relatively quickly, and overgrowth is not generally pronounced. As grub activity is limited to the upper layers of sapwood, internal hollowing is not common. Extensive parts of the trunk can die-back in this fashion, resulting in large, amorphous scarred surfaces.

Misidentification:

Field observations indicate that grub holes are not a common feature of cultural scars. In particular, it appears that the species of grub that infests grey box does not occur in dead parts of the tree. It is unlikely that borer activity would be mistaken for bark or wood removal scars, although borer infested areas frequently surround authentic scar dry faces. Grub procurement scars will be characterised by tool marks associated with grub holes.

Termite activity

Infestation of a tree by termites ('white ants') causes the death of the trunk section and the eventual loss of the bark. This is a gradual, degenerative process that can take several years to result in a definable 'scar'; this mechanism is not clearly understood at this stage.

A scar caused by termite activity. Note the old bark falling away on the lower right, with new overgrowth coming through underneath (Nagambie, NE Victoria).

Typical characteristics:

(a) The surface of the scar will contain a number of small insect holes, indicating access points into the sapwood.

(b) In their early stages these scars can appear regular in outline, but only have a lightly weathered surface. The bark on the overgrowth will also be young.

(c) As the majority of damage to the tree is contained within the heartwood, the scarred area will rapidly decay internally, eventually leaving large hollow cavities. These are frequently associated with extensive, accelerated-growth callous around the margins.

(d) The process is progressive, and a scar could be the cumulative result of a number of smaller scarring events defined by small ridges of re-growth. The bark can take several years to completely detach and can often be left hanging off the tree, revealing a scar with minor overgrowth.

Misidentification:

This process can create fresh scars and also influence the deterioration of existing scars, the latter providing an easy access into the heartwood. The regular outline associated with this form of scarring can frequently lead to misidentification with cultural scars less than 2 metres in length, which have a similar rounded profile. They are primarily distinguishable through differences of surface weathering.

Bird damage

A number of species of flocking birds (e.g. galahs and cockatoos) strip bark from various species of trees (e.g. grey box) to leave distinctive scars on the trunk and limbs of a tree.

Typical characteristics:

(a) This type of scar normally occurs in the central and upper parts of the tree, and is rarely present at the base.

(b) This process is progressive, and a scar could be the cumulative result of a number of smaller scarring events defined by small ridges of re-growth.

(c) Scars in this category are generally small to medium in size, with a maximum dimension of less than 1.5 metres; they are often wider than they are tall.

(d) The resulting scars are highly irregular in shape, and frequently 'curve' around the trunk.

Scars caused by recent bird activity. (Broken Creek, NE Victoria).

(e) All documented examples appear to be very recent in origin.

Misidentification:

The irregular shape of this type of scarring is highly distinctive. The irregularity of the 'original' scar will be retained in the 'extant' outline, but as the scar heals it will be increasingly hard to distinguish from cultural scars of the same age. Only recent bird damage scars have been identified to date, but it is important to consider the role this process may have played in creating scars in the past.

Fire damage

The action of intense heat generated by a bush fire or lightning strike can frequently kill the cambium of a tree without necessarily burning or scorching the underlying sapwood. These are the most common type of scars in forest environments.

A classic triangular fire scar (near Mooroopna, NE Victoria).

Typical characteristics:

(a) Two distinctive types of scar are formed by fire
1. A distinctive triangular scar with a wide base descending to ground level;
2. A continuous elongated, or discontinuous series of small curvilinear scars extending up the length of the trunk.

(b) The scars invariably form on the leeward (downwind) side of the tree, where the heat is most intense, particularly in locations where there is sufficient build up of fuel (e.g. log jams resulting from floods).

(c) The dry face may initially be burnt, but eventually weathering processes will act to reveal a surface of unburnt heartwood. In other cases the bark will slough away after the fire, revealing an unburned surface.

(d) Dead Branches and/or stubs generally protrude from the scarred surface.

(e) Often associated with lightning damage and burnt hollows. If the tree is repeatedly burnt, the scar may develop into a large hollow at the butt.

A series of small fire scars curving around a tree butt (Heywood, SW Victoria).

Misidentification:

These scars can be potentially misidentified as cultural scars, particularly where there is no evidence of burning. Check to ensure that the shape of the extant scar accurately reflects the area of the original scarred area through an inspection of overgrowth patterns, variations in surface weathering and the presence of axe marks. Check adjacent trees for similar scarring with the same aspect, historical records of bush fires and the direction of the prevailing wind for comparative evidence of fire damage.

Abrasion

The repeated action of rubbing by adjacent limbs results in the loss of bark and creation of a scar.

The upper part of this scar is abrasion damage, caused by an epicormic limb rubbing against the trunk. The lower damage is an almost totally healed Aboriginal scar, which is the reason for the development of this subsidiary limb (Dookie, NE Victoria).

Typical characteristics:

(a) The scar may be partially hidden by an associated limb or trunk. This limb may have been removed or fallen subsequent to the formation of the scar. This is a gradual process that can result in the continual modification of the scar shape and size.

(b) The exposed surface may have a clean, polished surface.

(c) As the host bole and adjacent limb continue to grow, the morphology of the scar may show exogenous irregularities such as subsidiary lines of re-growth, smaller adjacent scars and the shape of the scar surface may conform to the shape the 'active' limb.

(d) As these scars weather they are likely to develop very similar characteristics to cultural scars, though they may have a number of atypical features such as polishing, surface irregularities and subsidiary scarring.

Misidentification:

These scars can be potentially misidentified as cultural scars largely occluded by epicormic stems. Check the position and surface of the scar carefully to determine whether the secondary limb resulted from the creation of the scar, or vice versa.

Other natural damage

There are numerous other minor impacts which can create small scars on trees, but which are not easy to identify. Many of these relate to minor fire, impact or insect related activity. In general these will be comparatively modern in date, as small 19th century or older scars will typically be healed over by now on healthy living trees. These only need consideration as potential cultural scars on long dead trees, where the overgrowth processes could have been arrested soon after scarring.

D. Incidental Scarred Trees

In addition to deliberate scars, tree scarring can also occur as an incidental result of human land use and other activities. These can often be confused for deliberate scars as they can display tool marks.

Impact damage

The collapse of an adjacent tree, loss of a branch or impact from a substantial log (or other form of debris) during a flood can create a variety of scars. The most probable non-natural causes are vehicle damage (e.g. bulldozer scars and car accidents) and felling damage.

A scar formed by a falling limb (Halls Gap, W Victoria).

Impact damage from machinery at Mt. Clay.

Typical characteristics:

(a) These scars can be identified by an irregular outline and damage to the heartwood (e.g. splintering or a branch tear).

(b) It is common for limbs and trunks to fall into tree forks, leaving opposing scars on either fork.

(c) The active, 'impacting' trunk or limb is frequently located in alignment with or adjacent to the resultant scar. The location of tree stumps may also provide evidence when the limb is not present.

(d) As these scars weather they are likely to develop similar characteristics to cultural scars, though they are more likely to display a number of non-

cultural features such as branch tears and impact marks, indicating where the point of contact occurred.

Misidentification:

These scars can be potentially misidentified as a range of cultural scar types. Check to ensure that the shape of the extant scar accurately reflects the area of the original scarred area through an inspection of overgrowth patterns, variations in surface weathering and the presence of axe marks. An examination of the immediate environment of the tree can provide contextual evidence, such as the orientation of the scar in relation to water-courses and fallen trees/stumps.

Stock damage

The prolonged use of a thinned woodland paddock for grazing, particularly horses and cattle, will result in abrasion scars near the base of the tree. Trees and other hard, upstanding features such as fence posts are invariably used for 'scratching' to reduce discomfort from parasites and other irritants.


Stock damage scarring (Dandenong, Victoria).

Typical characteristics:

(a) The area of land will have a history of stock grazing.

(b) The result is a highly polished scarred area, frequently around the circumference of the bole. Associated dieback may extend the damaged area higher the tree trunk.

(c) The scarring may effectively 'ringbark' the tree (see next section). This damage is likely to kill the tree, and so will probably appear to be relatively recent with little indication of surface weathering; frequently bark will still be adhering. If not dead, the tree will probably be in poor condition.

Misidentification:

These scars can be potentially misidentified as square or rectangular scars, as they are frequently similar in size, shape and position. The minimal weathering and stock surface-polish should distinguish between these types.

Ring barking

The cutting of a concentric groove or the removal of a concentric strip around the base of a tree trunk, which generally kills the central bole and any higher limbs; however under certain circumstances the tree can recover, sometimes resulting in scars displaying a prominent horizontal lines of axe cuts. The aim was to kill the tree with a minimum of effort, thus increasing the carrying capacity of the land for pasture grasses.

Various techniques were used to ringbark different tree species, depending on their relative vigour:

- *'Collar cut'* – the removal of a broad strip of bark around the butt of the tree without pronounced incision.
- *'V-cut'* – an unbroken circular axe cut deep into the sapwood.
- *'Frilling'* – a series of downward, overlapping axe cuts resulting in the bark hanging off the lower bole in ribbons.

A collar cut which has succeeded in killing this red gum (Mooroopna, NE Victoria).

A V-cut has also succeeded in killing another red gum (Mooroopna, NE Victoria).

Typical characteristics:

(a) Ringbarking normally manifests as concentric ring(s) of full size axe 'cuts' (and occasionally 'marks') around the base of a tree and/or around a stem. It invariably kills the tree.

(c) In some cases a tree will survive a ringbarking attempt, leaving small scars displaying axe marks at the level of the damage.

'Frilling' at the base of this scar (Broken Creek, NE Victoria).

A partially healed collar cut on a red gum tree, which has resulted in a scar (Barfold, Central Victoria).

Misidentification:

These scars can be potentially misidentified as either:

- Large sleeve scars, resulting from the removal of a large sheet of bark from the entire tree bole, effectively ringbarking the tree. Generally these will be defined at the top and base by tool marks, rather than 'axe scarfs' or cuts, though in some cases panel sub-division and /or dieback can result in a line of tool marks across the apparent centre of a dry face.

- Small square or circular scars located near the base of the tree.

Three ringbarked epicormic stems on a black box tree. The one on the right has regenerated, leaving an oval aperture which resembles now a small scar (Balpool Station, NSW).

These can be identified by examining the tree and environs for other obvious ringbark events and assessing the length of exposure on the scar surface. Regenerated ringbark scars will tend to be relatively unweathered and occur at a consistent level – about 1 metre above the base of the trunk.

Miscellaneous damage

There are numerous other types of incidental process, which can leave un-natural forms of scarring on trees. These are not necessarily clearly identifiable in the field, but could result from various farmland or woodland management activities.

A large scar caused by a running a cable around a Grey Box tree. Note the abraded grooves at half height (near Mooroopna, NE Victoria).

Typical characteristics:

(a) The resultant scars are generally small (< 0.5 metres long), though in the case of rope or cable abrasion marks, wide sections of a tree can be ringbarked.

(b) Tool marks, cuts and other surface abrasions are invariably located across the surface of the scar panel. These often take the form of 'cuts' into the sapwood, rather than 'marks' across its surface.

A scars on a tree caused by using this tree as a boundary marker (Buangor, nr Ararat).

Misidentification:

The cuts and abrasion marks can be misidentified as steel tool marks on authentic bark removal scars. However, they are invariably the result of activities unrelated to bark removal. It is important to note that even two or three axe cuts can damage the cambium sufficiently to result in a definable scar, which frequently becomes wider than the area of original damage through the effects of dieback. Similar marks can also be found on the surface of authentic cultural scars, representing later damage to the scarred surface.

Section 3: How To Identify and Record a Scarred Tree

Previously, this guide has outlined the common types of scar, and the range of cultural, natural and incidental impacts from which they result. It is now important to discuss where you can expect to find cultural scars and how to clearly distinguish them from the non-cultural ones.

Before outlining the features to look for when identifying scars, it must be realised that the majority of scars that exist in the Australian landscape today are the result of natural and incidental causes. The cumulative effects of natural tree growth and decay, land clearance and forest management have removed most of the mature trees which held cultural scars in the pre-contact and even historical periods of Australia's past. These have largely been replaced with younger trees bearing the impacts associated with the agricultural and forestry use of the landscape which followed the earlier subsistence use of the landscape after c.1870.

The number of surviving cultural scarred trees, both Aboriginal and European, within the vast array of existing scars is low, and the environmental circumstances in which they occur are limited. There is no hard and fast procedure for identifying scarred trees, though some general principals apply. There are, however, far more exceptions than there are rules to follow, and in the end the accuracy of a scarred tree identification will depend on the experience and understanding of the recorder, and the opportunity provided by the tree to reveal any evidence of cultural intervention and the way this is interpreted.

Some scars display all the hallmarks of an authentic cultural scar – age, form and the telltale signs of bark removal in the form of tool marks where the bark has been cut and prised off; but these are generally all large scars of a particular type on trees which have halted in their development at an ideal stage to preserve such features.

Others are much less clear, where later impacts and peculiarities in the healing patterns have distorted or hidden the original form and features of the scar. In other cases it is easy to recognise the common features of Aboriginal scars on trees which could not possibly be old enough to have been scarred through traditional or even historical Aboriginal activity.

It has to be expected that some trees of non-cultural origin will be registered as Aboriginal heritage sites, while others of a cultural origin will elude discovery. It is through the proper documentation of both the trees and the environment they inhabit, that these inconsistencies will be resolved, and this guide can provide the starting point.

How to Tell a Scarred Tree from Natural or Incidental Types of Scarring

If you find a tree which you suspect may have an Aboriginal scar, it is important to ask yourself the following questions and finding satisfactory answers before recording it as a heritage site.

What are the characteristics of the local environment?

Understanding the local environment is a crucial first step in determining the origin of a scar. At the most basic level, it is important to recognise whether the environment is natural, and whether the scarred tree is part of this environment. Authentic Aboriginal scarred trees are invariably on native trees that have grown naturally in that environment – most typically these will be red gum, box, stringybark or messmate trees, though numerous local variations exist. Aboriginal scars will not occur on exotic trees, plantation trees or trees which have been regrown in logged forests.

The most promising locations for the survival of both Aboriginal and European scarred trees are in locations where elements the original, 19th or pre-19th century forest or woodland has been preserved. These include road, river, creek and other water reserves, where logging or tree removal has been limited. Scarred trees can also survive as isolated specimens in paddocks, parkland (e.g. Melbourne Park) or forest, but generally these areas have been highly modified and contain mostly introduced vegetation.

This remnant grey box woodland reserve provides good opportunities for finding scar on some very old trees (Dookie. NE Victoria).

This forest consists mainly of regenerated saplings, and the potential for scarred trees is limited .

Forests in particular do not offer high potential for preserving scarred trees given the high impact of logging and firewood collection, though isolated pockets of original trees may survive. Riverine forests, however, have not generally sustained clear felling, and scarred trees often survive around water margins, or on

dead trees, ringbarked during forest pasture thinning operations 50-120 years ago, as can be seen on Gunbower Island, near Cohuna.

Bumbang Island near Robinvale is the best example of a logged forest where scarred trees do survive in large numbers. This is because they occur mainly on dead trees, which have not been cleared away for firewood given its isolation on a cut-off bend in the Murray River.

There are numerous scars on dead trees in this thinned black box woodland on Bumbang Island, Robinvale.

What impacts have occurred in the vicinity of the scar?

The impacts which create a scar on one tree will probably have caused scarring of a similar nature on other trees in the same place. If in doubt about the cultural origin of a scar, it is very important to check other trees in the vicinity to see whether the same features occur elsewhere, and the form that they take. This can help eliminate natural or incidental scars that coincidentally resemble cultural scars through the shape of the outline they have left.

How old is the tree on which the scar occurs, and how long has the scar been there?

With a few exceptions, Aboriginal and other historical scars in Victoria can only exist on trees greater than 100 years old. This assumes that in most areas the last widespread bark removal activity occurred before c. 1920 on trees that were 10-15 years old at the time of scarring. Although in some specific localities, bark removal for building shelters, often by Aboriginal people, continued up to the 1950s and beyond, these instances are generally associated with well documented settlements and reserves, and across most of the State the extensive use of bark had ceased before the end of the 19th century.

It is difficult to estimate the correct age of a tree given that after 100 years, most trees have acquired the uniform attributes of maturity. Tree aging is a technical skill, which involves assessing the girth of the tree, the state of the crown, the extent of any damage and the position of the tree in its local environment.

The old age of this cracked and weathered dry face is demonstrated by the presence of possible stone tool marks (Broken Creek, NE Victoria).

In general the larger the tree, the older it is; but there are numerous exceptions to this. Some small, stunted trees could be very old, while other much larger trees could be only 40 or 50 years old. There simply has not been enough scientific study on the age of commonly scarred tree species to develop an effective visual dating system beyond the first 50-80 years of its life.

An accurate tree age may only be gained through a scientific process involving both C^{14} dating and growth ring counting. This may involve destroying part of the tree, though epicormic stems and other major limbs can sometimes be used instead of the main trunk.

One simple way that could be used to assess the age of a scar, and very roughly the tree, is to examine the degree of weathering on a scar dry face. As dead timber is exposed to the elements, through bark removal for instance, it dries and cracks. The more cracked and weathered the dry face, the older the scar is likely to be. Scars that have little cracking are unlikely to be very old, and would not normally count as heritage sites, even if they are cultural in origin.

A very recent scarred black box (5-20 years), showing an unweathered dry face and the clearly defined young bark on the slight overgrowth (Bumbang Island, Robinvale).

The age and extent of overgrowth can also be used to assess a scar's age, as this indicates the length of time a tree has had to repair the damage. Some species, notably red gum, have a remarkable ability in some cases to completely heal over even large areas of damage, while others, such as grey box, cease overgrowth relatively early. One of the best indicators of scar age is whether the overgrowth is covered with old or young bark. It is easy to identify young bark as it is quite different in appearance and texture from bark on the trunk

surrounding the scar. Young bark proves that the scar can be no more 10-50 years old.

What impacts have occurred to the tree, and can you work out the order in which they have occurred?

Many scars are the result of several processes, rather than simply the act of removing a sheet of bark. One of the most basic, is the process of dieback which can extend the damaged area up and down the tree, dramatically altering the shape and size of the scarred area. This can easily be spotted where tool marks or an early line of overgrowth are preserved, but often there is very little to interpret. In other cases, more recent fire or lightning damage, or distortion caused by the crushing of the dead scar 'dry face' by the surrounding living wood.

Can you identify the form and size of the original scar on the tree?

One of the most important considerations is to view of the scar as it originally occurred, rather than as it appears today. In this way the changes that have occurred to the scar over the years can be identified and discounted as part of the original cultural event. One common mistake is to assess a scar in relation to its current shape, without reference to the age of the tree, the age of the scar and the involvement of other impacts in creating what we view today. In some cases healing of the scar can completely obscure the evidence of a cultural scar with overgrowth callus tissue, or decay may totally destroy a scar dry face, and it will not be possible to determine the original form of the scar, or at least without cutting into the tree.

The form of this scar bears little relation to its original shape. It contains two scars, both clearly defined by tool marks (Yundool, NE Victoria).

Is the tree providing enough opportunity to determine the origin of the scar from a surface inspection only?

In some cases it may be possible to make an instant determination, in others the process may take a long time to complete comparing a wide range of factors, and a determination in the field may not be possible. If there is any doubt about the Aboriginal origin of a scar, specialist advice should be sought. This may involve technical information on the age of the tree, the use of the land or how to read the evidence displayed by the scar and its overgrowth.

How to Tell an Aboriginal Scarred Tree from a European Scarred Tree

Caution should always be used when attempting to determine between an Aboriginal and a European origin for a cultural scar. While there are several characteristics that are uniquely Aboriginal, there are comparatively few uniquely European attributes, making it hard to demonstrate beyond doubt that an Aboriginal person was not involved in the bark removal process.

The main criteria that are thought to distinguish between a (traditional) Aboriginal scar and a (historic) European scar are the age and type of scar, the types of tools employed and the way in which they were used. The following section briefly discusses each criterion and assesses their usefulness in making a distinction between an indigenous and a non-indigenous scar.

Scar Age
The European use of the landscape post-dates the exclusively Aboriginal use of the landscape, and so logically within the broad group of scars, European scarring evidence will be more recent. While scientific dating through C14 or growth ring counting can demonstrate that a scar was made during a particular time bracket, this is hard to demonstrate through a subjective appraisal of weathering and overgrowth, except in very recent examples.

Type of Scar
The European collection of bark for construction purposes was extensive, but involved only a narrow range of slab sizes and shapes. These were exclusively rectangular sheets, measuring about 1.5-2.5 m in length, taken from the base of trees, sometimes from around the entire girth. This largely excludes European involvement from scars of different shapes, sizes and positions on the tree, but does not discount Aboriginal people from using similar rectangular sheets for shelters in the same timeframe.

Tool Types and Patterns
Given the availability of manufactured steel tools in Colonial society, stone hatchets were never widely adopted by Europeans. While it appears that the use of full-size steel woodsman's axes (blade measuring 10-15 cm L) was not integrated into traditional Aboriginal culture, steel hatchets were rapidly adopted as soon as they became available on the eastern seaboard during the late 18th century. On scars where a full size axe has been used, particularly in a cross-diagonal pattern (an innovation apparently originating in the historical period), a European origin is more likely, but it does not preclude the use of the same tools and techniques by Aboriginal people in the employ of Europeans.

To summarise, any claims for an exclusive European origin of a scarred tree must carefully consider all the scar attributes and contextual data (e.g. environmental & historical) before drawing this conclusion.

How to Fill Out an AAV Scarred Tree Site Form

This section is intended to help explain to those unfamiliar with the scar recording process to complete an AAV Scarred Tree site form. This will provide a consistent and accurate database of information on scarred trees on the Victorian Aboriginal Heritage Inventory System (VAHIS), and further a better understanding of scarred trees in general.

For simplicity, only those attributes unique to scarred trees are outlined.

- *Species* – a range of common tree species are provided (red gum, black box etc.). A range of field guides to Victorian trees are available, which should be consulted for general background information about tree species and their attributes. If in doubt, a generic name (e.g. gum, box or stringybark) will suffice as these broadly describe the type of bark that was available.

- *Condition* – in general most living trees should be described as being in good health, unless it has lost most of its foliage due to stress (e.g. lack / surplus of water). Even in these cases, the tree may recover and continue living for decades longer, so poor health should only be used where it is clear that the death of a tree is imminent. The remaining categories are self-evident.

- *Toe Holds* – whether they are present or not and their number in total. In many cases toe holds will be the only scars on a tree.

- *Girth at 1.5m High* – a consistent measure at chest height that allow comparisons to be drawn between different trees. Note: this only applies to the main bole, not subsidiary limbs. If these get in the way of the measurement, try the nearest clear spot up or down the trunk, and note the location of the measurement on the form.

- *Scar Dimensions* – the form allows for the recording of up to five primary scars on a tree. If there are more, use extra sheets. For consistency with the previous site registry system measurements are made of the internal dimensions of the extant dry face, rather than attempting to estimate the original dimensions of the scar panel. Where present, the length should be measured between the outer bands of tool marks.

- *Overgrowth* – there are at least two dimensions to overgrowth, thickness (radial, from the centre of the tree) and width (measured from the outer edge of the overgrowth, where discernable, to its inner edge over the dry face). These measurements (top , left, right, bottom) record the *width* of overgrowth, and allow an estimate to be made of the amount of the scar no longer visible. Overgrowth can be very uneven, and so an average measurement will suffice in most cases. When dieback has extended the length of the scar beyond the original bark removal panel, as demonstrated by axe marks or weathering discontinuities, do not record the top and bottom overgrowth measurements as they are misleading.

- *Scar orientation* – the compass orientation to which the scar is facing (to the nearest 15°), or cardinal point if in doubt.

- *Origin of Scar* – this can be very hard to demonstrate, though it can be assumed that in general most cultural scars will be considered Aboriginal rather than European heritage sites. Use the criteria outlined in this guide, and if there is any doubt whether a scar is cultural or not, tick *Uncertain*.

- *Type of Scar* – these types are explained in this guide. In general most Aboriginal scarred trees will be bark removal scars, created by the removal of bark alone.

- *Scar Preservation* – this is combination of two attributes. Firstly, the extent to which the original attributes of a scar are preserved (e.g. shape, integrity, tool marks), and secondly the extent to which the scar timber has physically decayed. An *Excellent* condition scar will have a clearly defined shape, little distortion to its outline and be solid and stable. A *Very Poor* condition scar will have relatively little remaining at all, possibly just a partial ring of overgrowth around a hollow. Only use *Destroyed* when all signs of a previously identified scar have been physically removed from the tree (e.g. by fire).

- *Axe Marks* – these include both hatchet (5-10 cm L) and axe (10-15 cm L) marks. Record the number of surviving marks, and whether they are derived from a steel (axes and hatchets) or stone (hatchets only) marks. Note that stone tool marks are very rare, and that weathered steel tool marks can resemble stone tool marks. If in doubt, tick unknown.

- *T*ype of Axe-Marks – this refers to the pattern the tool marks form on the scar. Parallel or singular lines commonly appear at the top or base of the scar, usually in a horizontal orientation. Very occasionally, the lines will clearly occur in a circular arc, suggesting that the scar may have been a curved pre-form, such as a container or canoe. Criss-cross or cross-diagonal marks can occur as lines of leaning tool strokes, sometimes all in the same orientation, sometimes forming a zig-zag line or series of crosses, where the tree has also been hit with a backstroke. Random tool marks occur in a seemingly patternless grouping, and are either unrelated to the scar, or suggest that the scar was incidental in origin.

- *Stem Regrowth Present* – whether an epicormic stem is growing from the base of the scar or not. In some cases this could potentially be used to date the scar.

- *Sketches* – these are valuable opportunities to document the overall character and dominant features of each scar, and the relationships between scars on a single tree. There are numerous exceptions to the classic scar, and a diagram is the best way of explaining this.

VICTORIAN ABORIGINAL SITE RECORD — **SCARRED TREE**

SITE NAME _____ **SITE NUMBER** ☐☐☐☐ - ☐☐☐☐

Grid Coordinates E ☐☐☐☐☐☐ N ☐☐☐☐☐☐☐ **Datum** ☐ AGD 66 ☐ GDA 94

☐ **Primary Component** ☐ **Secondary Component**

Species

☐ Red gum ☐ Black box ☐ Grey box ☐ Yellow box ☐ Stringybark ☐ Mallee ☐ Box (non-specific)
☐ Casuarina ☐ Cypress pine ☐ Swamp gum ☐ Other gum ☐ Uncertain ☐ Other _____

Condition

☐ Good health ☐ Dead (standing) ☐ Destroyed
☐ Poor health (dying) ☐ Fallen ☐ Removed

Total Number of Scars *(Include toe-holds in total count)* _____

Number of Toe-holds _____

Girth at 1.5m high _____m

DESCRIPTION OF SCAR(S)
Please indicate if the dimensions have been estimated (E)

SCAR NUMBER →	1	2	3	4	5
Length	_____ m	_____ m	_____ m	_____ m	_____ m
Width	_____ m	_____ m	_____ m	_____ m	_____ m
Height above ground	_____ m	_____ m	_____ m	_____ m	_____ m
OVERGROWTH					
Top	_____ cm	_____ cm	_____ cm	_____ cm	_____ cm
Middle (left)	_____ cm	_____ cm	_____ cm	_____ cm	_____ cm
Middle (right)	_____ cm	_____ cm	_____ cm	_____ cm	_____ cm
Bottom	_____ cm	_____ cm	_____ cm	_____ cm	_____ cm
SCAR ORIENTATION Degrees					
ORIGIN OF SCAR					
Definitely Aboriginal	☐	☐	☐	☐	☐
Probably Aboriginal	☐	☐	☐	☐	☐
Uncertain	☐	☐	☐	☐	☐
TYPE OF SCAR					
Bark removed	☐	☐	☐	☐	☐
Heart-wood removed	☐	☐	☐	☐	☐
Resource extraction	☐	☐	☐	☐	☐
Carved tree	☐	☐	☐	☐	☐
Other (Specify)	_____	_____	_____	_____	_____
SCAR PRESERVATION					
Excellent	☐	☐	☐	☐	☐
Good	☐	☐	☐	☐	☐
Fair	☐	☐	☐	☐	☐
Poor	☐	☐	☐	☐	☐
Very poor	☐	☐	☐	☐	☐
Destroyed	☐	☐	☐	☐	☐
AXE-MARKS (Number)					
AXE-MARK METHOD					
Stone	☐	☐	☐	☐	☐
Steel	☐	☐	☐	☐	☐
Unkown	☐	☐	☐	☐	☐
TYPE OF AXE-MARKS					
Parallel (linear)	☐	☐	☐	☐	☐
Parallel (curved)	☐	☐	☐	☐	☐
Linear (singular)	☐	☐	☐	☐	☐
Criss-cross	☐	☐	☐	☐	☐
Random	☐	☐	☐	☐	☐
STEM REGROWTH PRESENT	Y ☐ N ☐	Y ☐ N ☐	Y ☐ N ☐	Y ☐ N ☐	Y ☐ N ☐

RETURN TO: The Heritage Registrar, Aboriginal Affairs Victoria, PO Box 515 EAST MELBOURNE VIC 3002 July 2003

SKETCHES

(Show relationship of multiple scars, overgrowth, axe-marks, toe holds etc. Number scars according to the descriptions on front. Draw cross-sections of scar, if possible. Show scale values)

TREE *View from* _____°

SCAR No. _____ *(Detailed drawing of scar)*

SCAR No. _____ *(Detailed drawing of scar)*

TREE *View from* _____°

SCAR No. _____ *(Detailed drawing of scar)*

SCAR No. _____ *(Detailed drawing of scar)*

ADDITIONAL INFORMATION