THE PRESERVATION AND MANAGEMENT OF ABORIGINAL CARVED TREES

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INTRODUCTION

Designs were carved on living trees by some Australian Aboriginal tribes. The designs were carved in a ceremonial context, in particular, around the graves of important people or as part of initiation (bora) grounds. Some trees were also carved as markers indicating important boundaries or places. Two or three trees were commonly carved around graves, and more than 50 were commonly carved around bora grounds. The most recorded from one site were 120 from around a bora ground in central west NSW (Etheridge 1918).

The designs were not simply an artform but had ritual significance, and were integral to the ceremonies taking place at the site.

The Carved Trees took several forms. The most common type known today had designs carved into the heartwood of the tree after a slab of bark had been removed. Other types involved the removal of only the bark within an outline to expose the wood below, the carving of designs through the bark into the heartwood with no bark removal, or the carving of designs only into the bark (this type is known only from northeastern NSW). Due to the shedding of bark and/or bark regrowth the latter three types of Carved Trees have not survived well as living trees and few examples remain outside museums.

The practice of carving trees was concentrated in NSW and southeastern Queensland, and seems to have been particularly common in central west New South Wales in the Kamilaroi and Wiradjuri tribal areas.

Although Carved Trees were quite common in NSW many have been destroyed or have been removed to museums and private collections. Early this century, 300 sites with Carved Trees were documented (Etheridge 1918). The number of Carved Trees at the sites ranged from one to 120. By 1945 only about one third of these Carved Trees could be located (McCarthy 1945), and today only 78 remain at their original locations (Bell 1980). Of these 78 trees, less than a third are still living (Ravenscroft 1986).

As Aboriginal Carved Trees are very susceptible to destruction from fires, clearing, insect and termite attack, and natural deterioration, the remaining Aboriginal Carved Trees in field locations require active management to ensure their preservation for the appreciation of future generations. At this stage, however, information on techniques for management of Carved Trees is incomplete.

The aim of this paper is to alert people to the endangered status of the Aboriginal Carved Trees and the current lack of knowledge about specific management problems, in particular specialised conservation treatments required to successfully treat wooden objects subjected to field conditions. In addition, knowledge on silvicultural and entomological problems is limited due to the lack of expertise in the government department responsible for management of the trees. It is essential that further research and field trials of conservation treatments be undertaken and silvicultural and entomological advice be sought.

HISTORY OF MANAGEMENT RESEARCH

For the past fifteen years, the National Parks and Wildlife Service in New South Wales has been undertaking work on the protection of Aboriginal Carved Trees. This commenced with surveys to locate and record the remaining Carved Trees in NSW and assess their management status (Sullivan: unpublished NPWS files; Bell: 1979, 1980).

Due to lack of expertise in the Service, a consultant wood anatomist was employed in 1982, to identify the main preservation problems for Carved Trees and to recommend remedial treatments. The consultant assessed the suitability of existing management treatments, assessed the main management categories of the Carved Trees and made recommendations on available treatments for the management problems (Florian 1982).

Fig. 1 - Close up of the Carved face on a living box tree. (Photo: K. Geering)
Due to a lack of existing information on treatments for both dead and living wood in field situations, the consultant, M.L.E. Florian, was not able to provide comprehensive answers to the preservation of the Carved Trees, but recommended that research be initiated on the consolidation for friable surfaces, radiography of closed scars to reveal the carving design and to determine residual strength of trunks of standing trees, the use of polyurethane foam to infill holes to prevent moisture retention and insect damage and a methodology of determining the extent of the root system of standing trees (Florian 1982:45).

Subsequently a consultant conservator was employed to assess the condition of as many Carved Trees as possible, to prepare realistic treatment proposals and to select a number of priority trees for immediate conservation treatment (Ravenscroft 1986). Although the Consultant Conservator was able to fulfill most of the aims of the contract, time did not permit extensive research into longer-term management problems with no available solutions.

Consequently, Ravenscroft recommended that many of the conservation problems associated with the preservation of the Carved Trees required further research of an interdisciplinary nature and that there was a need for ongoing research into conservation treatments as new techniques and methods became available (Ravenscroft 1986:62, 101).

As a result of the work by the consultants it became apparent that Aboriginal Carved Trees were an endangered site type and unless urgent management work was undertaken they would disappear completely. However, despite acknowledgement of the urgent need for management work this was, and still is, being severely hampered by a lack of money and a lack of knowledge about some specific wood preservation problems. This is accentuated as in situ Carved Trees are subjected to field conditions and conservation treatments developed for use on wooden objects in controlled environments such treatments are often not suitable or successful, and few Conservators are actively working on the preservation of wood in field situations in Australia.

The solutions for Carved Tree management require a multi-disciplinary approach with input from Aboriginal communities, cultural resource managers, conservators, silviculturalists and entomologists. The expertise as well as time and finances required to research these solutions is not available in government cultural resource organisations and requires input from external organisations.

This lack of available information on suitable treatments has led to the use of treatments that have not always been in the best interests of the trees. Although these treatments were carried out in good faith they were adapted from techniques used for lumber, and we now know that these techniques are not suitable for heritage artefacts (Florian 1982, Ravenscroft 1986).

Some examples of treatments which were used but have proved to be unsuitable include: the use of creosate or linseed oil (no successful alternative consolidant has yet been found); the use of cement for mounting dead fallen trees (no alternative vertical mounting system has yet been found); capping of the hollow pipes of trees to prevent the accumulation of water inside the tree (erection of shelters preferable as they allow circulation of air); and the cutting back of callus regrowth to reveal the carving below (this method may be successful in some cases but numerous issues need to be considered prior to taking action). Also, where solutions to the management problems appeared impossible, trees were commonly cut down and moved with no real consideration of where they were going to be housed or whether the proposed housing was going to provide the trees with better protection than already existed.

**MANAGEMENT PROBLEMS**

A comprehensive management programme for the preservation of Aboriginal Carved Trees involves both preventative measures and treatments of current problems. Currently all remaining Carved Trees require some form of preventative treatment.

The management of Carved Trees involves consideration of many different issues. When preparing a management plan it is essential to consider the Burra Charter, the Conservator’s Code of Ethics, the wishes of the local Aboriginal Land Council, and of landowners, and the availability of finances to undertake work. At times consideration of these will involve conflict, and the Cultural Resource Manager must balance all the issues and attempt to draw up a management plan acceptable to everyone, and in the best interest of the Carved Tree. This is further complicated by the lack of knowledge about how to deal with some of the major management problems. This lack of expertise results in part from the relative infancy of specialist conservation research in Australia, and in part from the lack of such expertise in the authorities responsible for the management of Aboriginal Carved Trees in field situations.

Carved Trees exist in four broad management categories: Living Carved Trees, Dead Standing Carved Trees, In Situ Dead Fallen Carved Trees and Dead Fallen Carved Trees removed to other locations (usually in gardens outside farm houses). Each of these categories has a suite of specific management problems; however, this paper will only outline the major management problems requiring resolution.

At this stage the urgency of the implementation of management works and conservation treatments cannot be stressed enough. The condition of most remaining In Situ Carved Trees is deteriorating very rapidly and unless work is undertaken urgently the condition of most will deteriorate beyond recognition. Despite several attempts to instigate routine monitoring of the condition of the Carved Trees...
Trees in NSW at this stage no comprehensive regular monitoring of all Carved Trees has been taking place. Even so, it is known that during the last ten years: at least four Carved Trees have been destroyed by fire; one seriously vandalised; one cut down illegally and moved; several have fallen (one of which shattered into several hundred pieces on impact); the carved faces on two have been substantially destroyed by termites; and stock have substantially destroyed portions of the carved faces of four trees.

As a first step it is crucial that emergency work be undertaken on the trees in order to stabilise them and to save them deteriorating further. Emergency measures for stabilising Carved Trees, even where they may involve “don’ts”, are better than no action at all, and will help buy time until further knowledge or resources are available to carry out more permanent management work: both treatments of critical management problems and long-term preventative measures. Emergency measures involving “don’ts” should only be implemented if they are reversible.

Even emergency measures require a commitment of labour, time and finances beyond that currently available in year-to-year budgets. However most trees cannot be left in their current state for more than a few years before damage has advanced so far that the carvings will either have been destroyed or substantially damaged. To preserve Carved Trees in the long term, it is essential that stabilisation of the tree condition as far as current knowledge allows takes place immediately, and is not delayed until research and field trials of conservation treatments are undertaken.

We continually meet with disbelief from authorities responsible for management of Carved Trees, local Aboriginal communities and landowners, when we admit the lack of knowledge of treatments for Carved Trees and our current inability to solve major problems threatening the survival of them. It can also be difficult to obtain funds for management work, costing up to three or four thousand dollars, which only addresses some of the management problems. However, unless the temporary stabilisation work is undertaken then there will be few if any Carved Trees remaining for longer term treatments.

A frequent response to the lack of knowledge about some management problems, as well as to the financial and labour input required to undertake management work, is for people to suggest that the tree be cut down (if it hasn’t already fallen) and be transported to a museum. This however raises major ethical, philosophical and practical problems.

Firstly, apart from the Carved Tree(s), the site is also historically and culturally significant. Every attempt should be made to preserve the entire site. Ideally, because of the association between the Carved Trees and the site at which they are located, every Carved Tree should remain in situ.

If a Carved Tree is beyond conservation on site, or if treatment is not approved, preservation of the site should become the major consideration.

Secondly, in the past it was common practice for Aboriginal Carved Trees to be cut down by museums and private collectors and moved well away from their original locations. Most Aboriginal people in western New South Wales are opposed to the moving of Carved Trees to a museum. Housed in a museum, the tree is geographically separated from the local Aboriginal community, which has no say in the housing or interpretation of the Carved Tree. In fact, many Aboriginal people would rather see the tree decay or be burnt than have it moved to a museum. This situation could be alleviated if local Aboriginal Communities had display areas of their own, but few exist currently in western NSW. The practicalities of getting funding for this purpose mean that keeping trees which all parties have agreed should be moved to inside housing, under the control of the local Aboriginal community, in the short term, is not a feasible solution.

Fig. 2 - Two dead standing Carved Pine Trees. In order to reduce the likelihood of the trees being hit by lightning or blown over the trees were lopped above the Carved Faces. A shelter will be erected over the trees in the near future. (Photo: K. Geering)
The major management problems which currently exist in trying to preserve Carved Trees at their original locations, and which urgently require research and field trials are:-

1. **Perpetuating the life of Living Carved Trees** which are threatened by clearing, soil disturbance and the application of fertilisers not suitable for native Australian trees. While the tree is still alive there are fewer management problems relating to structural strength, decay of dead wood in contact with the ground, risk from fire, and maintaining the tree vertically. Most Living Carved Trees are located on agricultural land, and agricultural practices are often indirectly killing the trees. In addition some Living Carved Trees have fungal problems including heartrot and there are currently no available treatments which have been successfully trialed which are not harmful to the carved face of the tree.

2. **Control of termites.** Five different species of termites have been identified as being a threat to Carved Trees (Ravenscroft 1986:22). The five different species have differing impacts on the Carved Trees and also require different methods of elimination. Termites threaten all four categories of Carved Trees. The use of conventional sprays is detrimental to wood, hence alternative methods need to be found to control termites. The control of termites will always be an on-going process as they re-colonise areas readily, but at this stage no techniques have yet been developed which can be readily taught and undertaken as a routine procedure by district NPWS staff. Termites are very voracious and are currently a major threat to 80% of the Carved Trees in NSW. If action is not taken soon, few carved faces will exist intact. In addition the presence of termite nests inside the trees can lead to retention of moisture which increases the rate of decay of the wood. It can also be difficult to assess the damage to portions of carved faces obscured by regrowth.

3. **Surface consolidation.** Tangential exfoliation of the heartwood exposed on the Carved Face is a major management problem leading to loss of the raised sections of the carved face, and hence loss of the design. Exfoliation of heartwood from the carved face appears to be a bigger threat in dead trees but is also occurring on living trees. It also occurs more rapidly on pines than hardwoods. No successful field consolidant has been found to slow this process nor have suitable enduring glues been found to stick pieces which have been shed back on. As a short-term solution the only thing we can do to try to slow the rate of tangential exfoliation is to erect shelters over the trees to reduce some of the impact of the prevailing weather.

4. **Suitable mounting systems for Dead Fallen Carved Trees.** It is inevitable that all living trees will eventually die. Once dead, the root systems biodegrade, the trees become structurally unstable, and they eventually fall. Once fallen they are in contact with the ground and will rot away unless preventative action is taken. As a short-term solution we are currently laying trees horizontally on granite blocks. However many Aboriginal communities as well as the wider public would like to see the trees standing vertically. Cement, metals and wood are all unsuitable for mounting trees, and vertical display systems which are not detrimental to the life of the artefact need to be found. This is even more critical when the trees are housed in field conditions.

5. **Structural re-inforcement.** As discussed above once a tree has died the root systems biodegrade and a loss of structural strength occurs. It is only a matter of time until the tree becomes structurally unstable and falls. In addition the dead wood at the base of the tree in contact with the ground is susceptible to decay which increases the loss of structural strength. Once the tree falls, the urgency of and degree of management work increases significantly. In
order to prevent trees from falling and being damaged in the process or becoming subject to the problems confronting a dead fallen tree, methods of structurally-reinforcing dead standing trees need to be found. Further, trees may be subjected to considerable movement in high winds which can lead to an increase in the rate of cracking of the carving and surface exfoliation on the carved faces.

6. **Callus regrowth.** All living Carved Trees are undergoing active callus regrowth. In some cases this has lead to the regrowth obscuring most of the carving. The pressure from callus, regrowth, particularly in eucalypts with hollow pipes, can lead to splitting of the carved face and expulsion of some/all of the pieces. Although callus regrowth was cut back on some Carved Trees by the Service about ten years ago, and appears to have been practiced early this century, this activity can be detrimental as it may predispose and tree to pathogens which can hasten death of the tree, and if not done under strict guidelines may result in the loss of important information about the practice of carving the trees. In addition, as a result of the fresh injury the tree may increase the rate of callus regrowth (rapid regrowth has occurred at several Carved Trees which were treated by the Service in the last ten years to the extent it is estimated the regrowth will have returned to its original position within 20 years).

**CONCLUSION**

In order to preserve Aboriginal Carved Trees, a concerted effort needs to be made urgently to implement emergency protection methods, research major management problems which currently have no solutions, and set up long-term routine monitoring schemes. The expertise, labour and finances to undertake all of these is beyond budgets available to authorities responsible for Cultural Resource Management, and this requires input from other organisations and funding bodies.

In particular, ongoing research into specialist conservation techniques is urgently needed and is most difficult due to the current lack of knowledge, the need for long-term field trials to determine the success or otherwise of treatments, and the difficulty in predicting the amount of time required to find suitable solutions. The development of conservation treatments may be most successfully tackled in the long-term if conservators in research institutions become actively interested in the problems.

**BIBLIOGRAPHY**


