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TREE CONSULTANCY

TreeAH: a new method of assessing trees for heritage designation

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Summary

Historic moments in time, landmark buildings and significant community achievements all contribute to our cultural heritage, which in turn accumulate to define the boundaries within which society sits. These links with our past help educate our children about things that really matter and allow all of us to better understand how we can improve the future. Trees are an integral part of this cultural framework, inspiring us to appreciate the natural world around us and enjoy all the benefits that nature has to offer. However, these irreplaceable living features are very sensitive and vulnerable to modern-day pressures. From ancient churchyard yews in England and Wales, to endangered olive trees in Palestine, these cultural links to our past are under threat all over the world. Tree Assessment for Heritage (TreeAH) is a method of assessing the heritage value of trees (www.TreeAZ.com). It provides a means for those concerned about the loss of our living heritage to systematically assess the importance of individual trees. The method assists enthusiasts and professionals alike wishing to identify and conserve trees that communities decide are worthy of special heritage protection.

Local residents in Tamworth, New South Wales, Australia, campaign to save an avenue of English oaks that they believe are of significant heritage value. TreeAH was used to formally confirm the heritage status of these trees.

Introduction

Our historic landscapes

Trees are familiar and often beautiful components of many landscapes, vital to the healthy functioning of the global ecosystem, and providing a range of useful materials and cultural benefits. Indeed, trees are often inextricably linked to economic prosperity and social customs, with a multitude of uses. Trees have frequently served as sacred altars and temporary churches to be preached under and marriage vows heard. They have provided convenient hideouts and watchtowers for monarchs, rogues and soldiers alike. They have been danced around, decorated, built in, used as hanging gibbets, shelters and very often played in by children. Some have been connected with death and others with the power of life, healing and restoration powers. They have guided pilgrims, provided landmarks and signposts for travellers, and even used to demark astronomical events.

Through the centuries, landscapes around the world have been under threat from human intervention and in the 10,000 years since the ice age receded, natural forest cover has been altered as human populations settle and intervene. In the UK, our intricately sculptured past has meant that we have a vast array of historic tree wealth, from majestic old oak pollards in aristocratic parks to ancient yews hidden away in old churchyards. These living relics form the most impressive collection of old trees that can be found anywhere in the world, a resource we feel is well worth protecting and conserving.

The meaning of heritage in the context of TreeAH

In its purest interpretation, heritage means an association or object of historical importance. However, this rather limited approach could reasonably be extended to cover all trees that are valued by the local community. In practice, such trees can be recognized by a range of terms including 'scheduled', 'listed', 'notable' and 'designated', in addition to 'heritage'. In this less restricted context, TreeAH, broadly interprets a 'heritage' tree as possessing characteristics that are presently of value and likely to be valued by future generations, making it worthy of special effort to protect and conserve. These valued characteristics can originate from past associations and/or present circumstances, and do not necessarily have to be old.

Heritage trees in the UK

In the UK, we are fortunate enough to have many ancient trees reminding us of our past. A typical example is the Ankerwycke Yew which grows in the grounds of the ruined priory of Ankerwycke where Henry VIII is said to have met Anne Boleyn under its branches in the 1530s. Estimated to be 2000 years old, it stands close to the River Thames and was silent witness to the sealing of the *Magna Carta* by King John in 1215. Compare the line drawing opposite (provided kindly by Archie Miles) with how the tree looks today in the image below.

The Ankerwycke Yew is still a magnificent tree, thought to be up to 2,000 years old, with a diameter of nearly 3m (10 Feet). The tree was recently threatened by development proposals and, through the efforts of local enthusiasts, it is now owned and protected by the National Trust. (Image courtesy of Archie Miles)

Of a slightly more sinister nature, one of the few remaining hanging trees in England is the 'Wyndham's Oak', dating from the 1600s and of specific relevance around the time when the throne was succeeded by James II in 1685. During these turbulent times, a revolt started in support of the illegitimate son of his predecessor, Charles II, but was speedily suppressed by the infamous 'hanging Judge Jeffrey', who was recruited to defeat the rebels. He apparently hanged over 300 peasants in the locality and is reputed to have shouted, sworn and laughed at his victims as they were punished. Many of the supporters are known to have been hanged from the tree.

Wyndham's Oak is one of the few remaining 'hanging' or 'gibbet' trees in England. It stands in a quiet Dorset parish, its present surroundings not reliably reflecting its gory history. This spectacular ancient tree has a trunk more than 3m (10 feet) in diameter.

Slightly less gruesome or ancient, but nonetheless significant in its contribution to our cultural heritage, is the Bramley apple tree, grown from a pip planted by a young Mary Ann Brailsford in the early 1800s. The apple was first recognised as an excellent variety by a local nurseryman, Henry Merryweather, who asked the owner of the tree at the time, Mr Bramley, if he could take cuttings. Mr Bramley agreed, but insisted it should bear his name, when really it should have been called the Brailsford's apple. In 1900 it fell over, but remained rooted and continued to grow. The current owner restored it to better health and it is still producing heavy crops of Bramley apples today. There are now more than 500 Bramley growers in the country and the total UK market is worth around £50 million ($75 Million). Amazingly, this true national icon all began with a pip!

The present owner of the original Bramley apple tree proudly cherishes this living link to the past tucked away in the corner of her back garden. (Image courtesy of Archie Miles)

These, along with many other obvious heritage trees are links to our past which can never be replaced, yet we are still finding many other significant cultural trees that do not have heritage recognition under threat in the UK!

Threats to the UK tree heritage

Political pressure and legislative loopholes

Threats to heritage trees come in many different guises, but none are more prevalent than that of damage or destruction caused by development or mismanagement. Although the UK has a very effective tree protection system, it still has a number of loopholes where infrastructure and large development projects are creating the biggest risk, and some of these irreplaceable assets are being lost in the name of progress.

Even some ancient churchyard yews in England and Wales are very much under threat where modifications or improvements are being made around church grounds. Sadly, some of our greatest and oldest trees are being lost because they have slipped through our national tree protection rules. Examples of ancient trees hidden away in many of our churchyards now find themselves victim to modern day pressures and the chainsaw. Here are some examples where trees are being mismanaged or lost.

This aerial view of Llanlleonfel Church, near Powys in Wales, shows a magnificent yew tree (red box) in front of the main entrance in the early 1990s. The tree was thought to be at least 500 years old and had a trunk diameter just less than 2m (6 feet).

A visit in 1999 revealed the tree had been pruned back to a stump with only a few shoots remaining. Following enquiries to the Church management, a written assurance that "the intention was not to fell it" was made. However, despite that promise, a visit three years later found the trunk and stump had been completely removed. (Photo courtesy of Tim Hills of the Ancient Yew Group – www.ancient-yew.org)

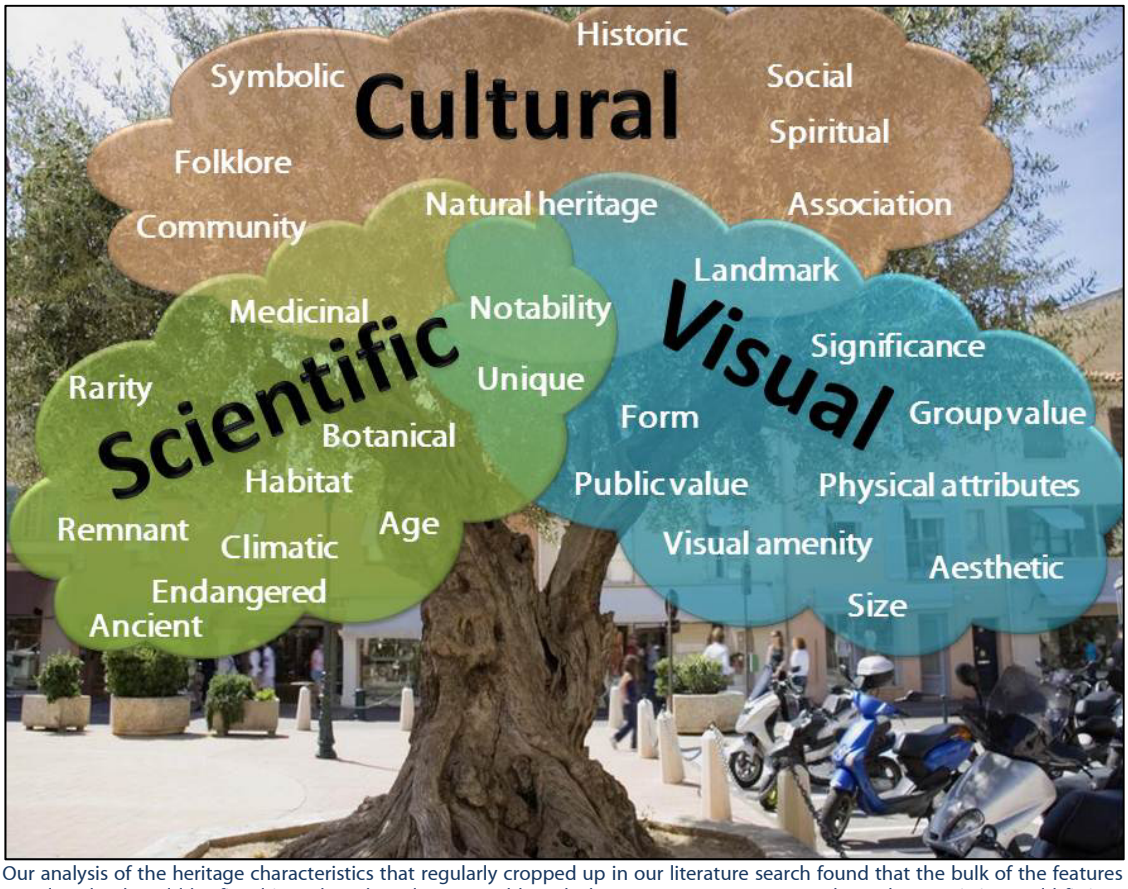
This ancient churchyard yew at Fryerning, a small village to the northeast of London, had two of its three major limbs removed to solve a problem of branches overhanging a grave. Despite the obvious importance of this tree, it was still badly managed, with very little serious consideration of its heritage value by the church authorities. Thankfully, the tree was not completely felled and there is still a good chance that it will survive, although its health has been obviously compromised. (Photo courtesy of Tim Hills of the Ancient Yew Group – www.ancient-yew.org)

The evolution of TreeAH

Worldwide heritage tree programs

In the context of such valuable trees being lost, Barrell Tree Consultancy began to look for methods of assessing heritage characteristics that would allow us to formalize the identification of these important trees. We started by reviewing all the methods we could find from internet searches and came across many examples. However, all of them dealt with local circumstances and most were unsuitable for application in a wider context. In the absence of finding a specific method we could use, we set about developing one that would suit our needs, but be of use to others around the world who were encountering the same problem. We analyzed all the methods we could find and began to list all the characteristics they listed to identify or define heritage value.

As we carefully reviewed all these characteristics we found they could be fitted into three broad groups that could be described as **visual**, **cultural** or **scientific**.



Our analysis of the heritage characteristics that regularly cropped up in our literature search found that the bulk of the features people valued could be fitted into three broad groups, although there was some crossover where characteristics could fit into more than one group.

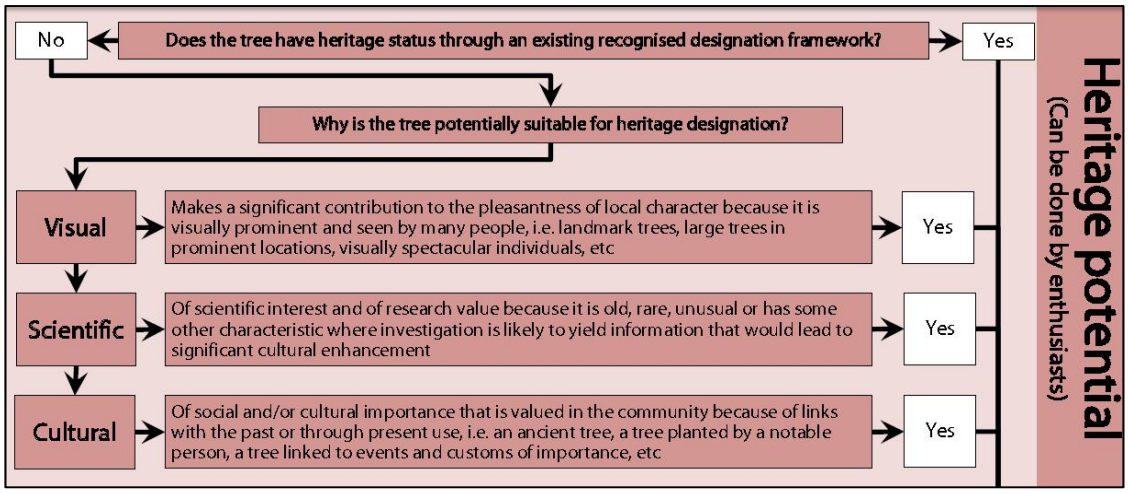
The assessment process

From our experience of dealing with these issues, we realized the method needed to be simple and quick to use if it was going to be of help to communities in danger of losing heritage trees. So, we designed the method to make it easy for assessors without any tree management knowledge or experience to assess and justify the heritage value of a tree very quickly. An integral part of this is the TreeAH assessment form, which has been designed and field-tested to be a systematic and simple checklist. It fits on two sides of A4 to provide a record of investigations, and has a series of brief notes to act as an *aide memoire* for assessors.

The assessment process is divided into four sections of different colors on the form, which should be completed strictly in order, from the top first to the bottom last. Each shaded box provides a brief explanation of what heritage characteristic is being assessed. Arrows from each heritage characteristic box lead to a white box that represents a decision or choice that can be marked with a pen as a formal record of the decision-making process. Download the form and explanatory notes from www.treeaz.com/tree_ah/.

Heritage potential

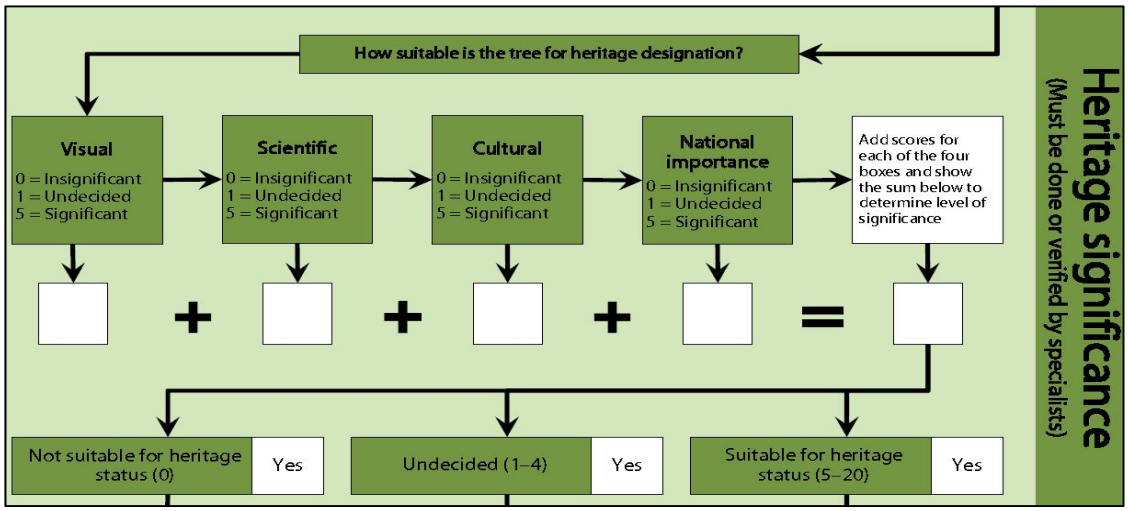
Starting with the admin section at the top of the form, there is space to identify the tree being assessed, and to record other relevant site details. The assessor then moves onto the *Heritage potential* part of the form, which is intended to be a very quick and simple preliminary assessment that can be carried out by anyone with an interest in trees, irrespective of their level of expertise. If a tree has no obvious visual, scientific or cultural merits, then there is no need to go any further; such trees have no heritage potential. What makes a tree special is a subjective judgment, and there may be differing opinions about what qualifies a tree for the elevated heritage status. Trees under threat often generate intense emotional reactions and it is to be expected in such circumstances that there will be individuals who have strongly polarized opinions. This first stage of the TreeAH assessment allows the expression of strong views.



However, the validity of the personal opinions of the assessor (who need not be a specialist at this preliminary stage) will be tested in the *Heritage significance* section, which applies a more detailed analysis and must be carried out by a specialist with experience of heritage and tree assessment.

Heritage significance

If the preliminary assessment of *Heritage potential* identifies a tree as potentially suitable for heritage status, the process moves on to the more detailed *Heritage significance* assessment, which requires a higher level of experience to carry out. The green section below is a summary that can be reviewed at a glance on the form.



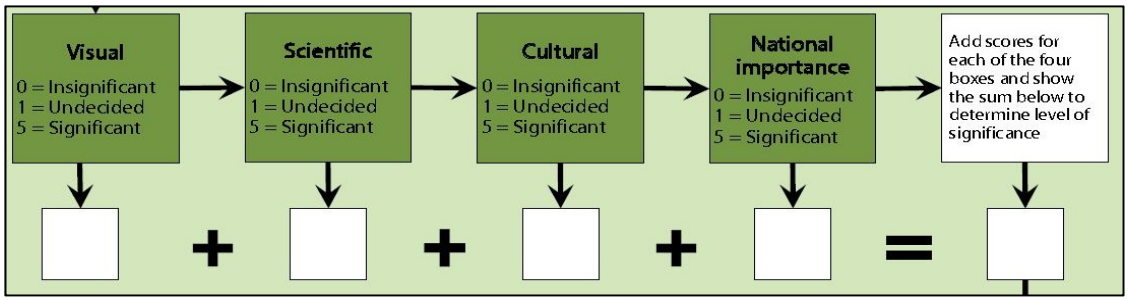
If more detailed analysis and explanations are required, a second page has been provided on the back of the form which is an expanded version of that summary, allowing the assessor to explain the reason for each decision. If the circumstances are complex, this part of the form can guide the assessor through the process and assist others to understand the decisions being made.

National Importance

There is also a section included on the form relating to *National importance*, which provides a means of allocating a higher level of importance to trees that have an impact beyond their immediate location. For example, a confirmed heritage tree that is important to the local community, i.e. planted by a local dignitary, but it is not widely known about on a regional or national level, would not score. However, a confirmed heritage tree that has a national status and is widely known about would be an obvious candidate. For clarification, this scoring criterion can only be used if the tree is confirmed as a heritage tree for visual, scientific or cultural reasons, i.e. it cannot be used as a sole reason for heritage designation.

The scoring system

This uses numbers because it is intuitively obvious that the lower the number, the lower the significance, and the higher the number, the greater the significance. However, the score options do not increase in regular increments due to the nature of the characteristics being assessed, i.e. cumulating low scores cannot be add up to eventually reach a threshold where a tree becomes significant. There are three heritage characteristics in the *Heritage suitability* section that have to be scored 0, 1 or 5, along with the optional *National importance* criterion that is scored in the same way.



This scoring structure is designed to minimize the opportunity for biasing the figures by making the requirements for each score difficult to dispute. 0 and 5 represent each extreme, which should always be obvious, and 1 is where a choice does not fit into either extreme. Each heritage characteristic and the optional *National importance* criterion can score 0, 1 or 5, with a possible total score range of 0–20, which represents the *Heritage significance* spectrum. TreeAH divides this range into three simplistic *Heritage significance* categories, i.e. *Unsuitable* (0), *Undecided* (1–4) and *Suitable* (5–20). This scoring system means that low scores of 0 or 1 in all the options cannot add up to reach the necessary total of 5, which is the threshold for a tree being suitable for heritage status. Similarly, one significant score of 5 is enough to cross that threshold and further high scores only serve to increase the relative strength of the heritage status of the tree.

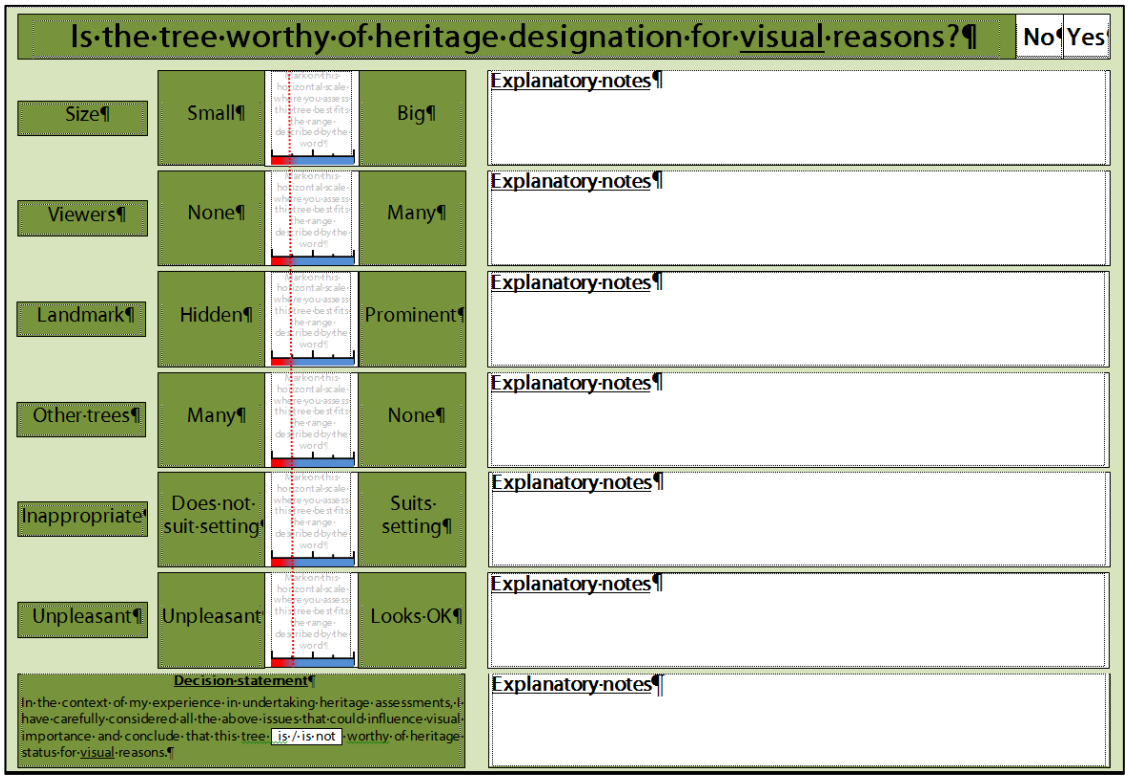
Working through the detailed analysis section

Visual

Assessing the visual importance of a heritage tree is subjective and very difficult to devise an objective scoring method that will provide a reliable and definitive answer. However, there are a range of individual components of visual importance that frequently arise when assessing whether a tree is special enough to qualify for heritage status. TreeAH identifies the six most frequently cited components of visual importance referenced in methods from around the world as size, number of viewers, prominence, number of trees in the vicinity, inappropriate for the setting and unpleasantness.

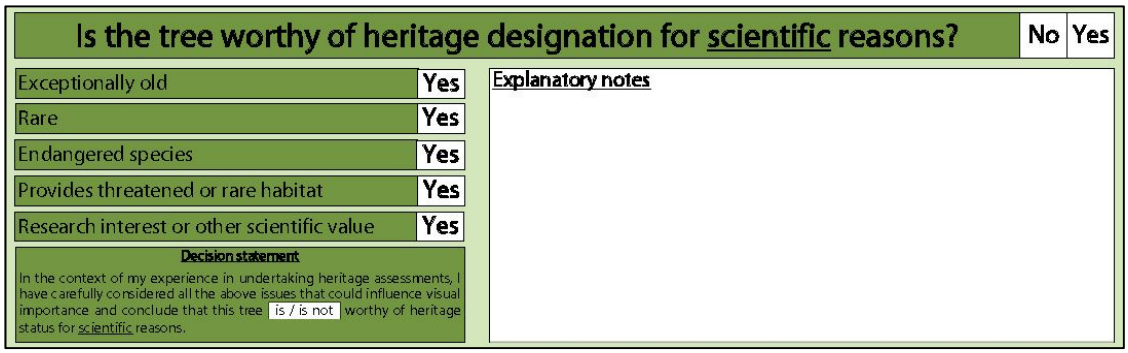
These six components can affect visual importance and the better a tree scores for each, the more likely it will be suitable for heritage designation. However, by far the most important consideration is a tree scoring at the lowest extreme of any component because that is likely to dominate (trump) high scores in any other component. If a tree falls into the lowest extreme for any component, i.e. it is very small, no people can see it, it is hidden from view, there are many other trees, it is inappropriate for the location or it is unpleasant to look at, then no matter how many other high scores it gets, it is unlikely to be suitable for heritage designation for visual reasons. In simple terms, a lowest score in any component would normally rule a tree out of being suitable for heritage status (identified as the red area on the horizontal scale). Because it is not realistically feasible to assign precise scores to each component, the form provides a scale between both extremes as a horizontal colored line and the assessor estimates where the tree sits on that scale by a pen mark (a vertically drawn line or arrow is best, but it must be bold and visible). Clearly marking where the tree sits on the scale for each of these six components creates a visual dashboard that can be reviewed at a glance to assist the subjective decision-making process. Having all the scores available in one

view is very helpful; assessors can be confident they have considered all the components, being able to easily compare and review them because they are close together. This dashboard-type display illustrated below is a simple but intuitive framework for the assessor to visually review and weigh-up all the components in the decision-making process.



Scientific

In contrast, to the subjective visual assessment, the scientific values of a tree are usually more obvious. Very old, rare, unique or unusual individuals where scientific investigation is likely to lead to some beneficial cultural enhancement are more likely to qualify. These are trees that will contribute to public benefit for scientific reasons and are important from a heritage perspective. The bulk of the tree population that are normal, with no special or outstanding characteristics, would not be expected to qualify as scientifically important. However, exceptionally old, rare, unique or endangered species of obvious interest and value, that make a significant contribution to scientific knowledge, are more likely to be suitable for heritage designation under this heading as illustrated in the extract below.



Is the tree worthy of heritage designation for scientific reasons?	No	Yes
Exceptionally old		Yes
Rare		Yes
Endangered species		Yes
Provides threatened or rare habitat		Yes
Research interest or other scientific value		Yes

Explanatory notes

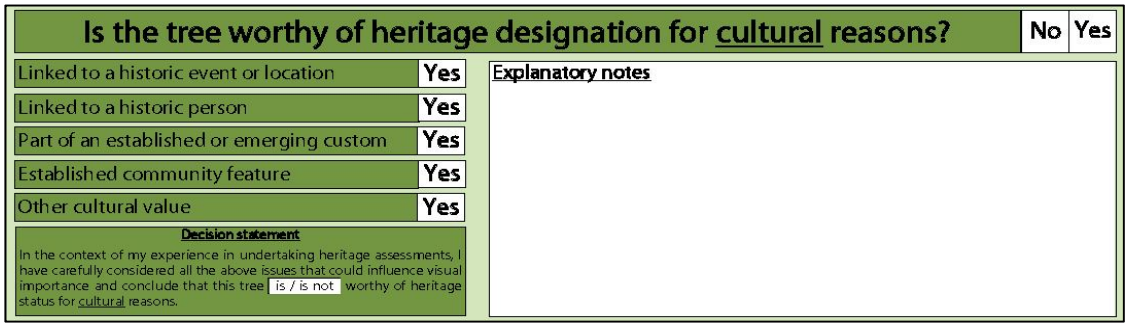
Decision statement

In the context of my experience in undertaking heritage assessments, I have carefully considered all the above issues that could influence visual importance and conclude that this tree [is / is not] worthy of heritage status for scientific reasons.

Cultural

The Cultural value is a broad characteristic that encompasses trees with historical, social, cultural and/or spiritual associations, and obviously extends to trees embedded in traditional folklore. In principle, any tree that has links or associations with what people used to do, or are doing now, is likely to have some level of cultural merit.

The integration of trees into traditions and customs, both well-established and emerging, can significantly enrich people's lives and greatly enhance the cultural experience of individuals and communities. Obvious examples are trees that were present when a historic event occurred or trees that are linked to a historic person. However, it is also commonly held that trees which have been present within a community for longer than living memory have great psychological importance because they provide a living link with ancestors who are no longer physically present. It is unlikely that trees in gardens and streets that are part of the fabric of the community, but not specifically connected to traditions or customs, would be suitable for heritage designation. However, trees that make a significant contribution to cultural enhancement because they are directly linked to existing or emerging traditions or customs, or have been present for longer than living memory, would be strong candidates.



Is the tree worthy of heritage designation for cultural reasons?	No	Yes
Linked to a historic event or location		Yes
Linked to a historic person		Yes
Part of an established or emerging custom		Yes
Established community feature		Yes
Other cultural value		Yes

Explanatory notes

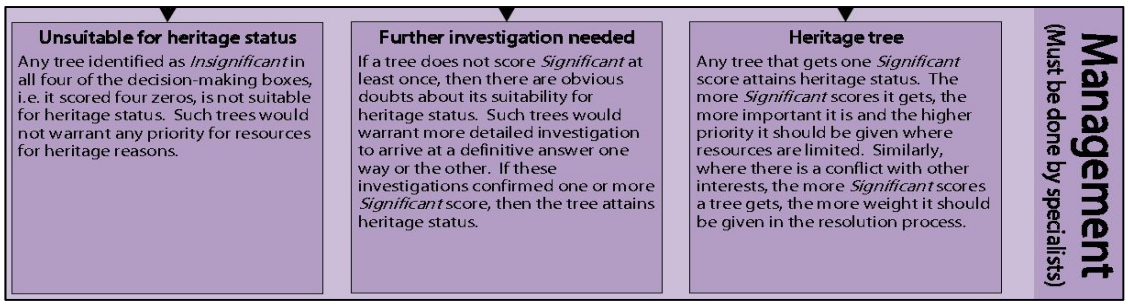
Decision statement

In the context of my experience in undertaking heritage assessments, I have carefully considered all the above issues that could influence visual importance and conclude that this tree [is / is not] worthy of heritage status for cultural reasons.

Providing management and resources for heritage trees

It is important to stress that heritage assessment in principle has very little to do with safety; a tree can be falling to bits or dead or an immediate hazard, but that condition does not automatically remove heritage characteristics that are associated with its presence, associations and location. Safety is a management issue that is best considered once the heritage assessment has been done.

However, once it is a recognized and valued feature of a community, it is likely to consume the resources of time and money. TreeAH is particularly useful where manpower and/or funds are limited because it can be used as a systematic method for prioritizing how those resources are allocated. The purple section on the form (shown in the extract below) identifies this requirement by separating the scores at the end into 3 areas for management priority. Trees scoring 0 are obviously unsuitable for heritage status, so no priority for resources should be given to them. Whilst trees scoring 1-4 would obviously be given more weight, they are still not suitable for heritage designation and so further consideration would need to be given to whether resources should be allocated to them. The greatest weight will be given to trees scoring 5–20 and the priority is based on the size of the scores.



International application of Tree AH

Ancient yews in the UK

In practice, TreeAH has already been successfully used in the UK on several occasions. Most recently, a joint initiative between the Conservation Foundation and Ancient Yew Group reviewed the importance of ancient yews in churchyards that could potentially be under threat. In the spring of 2011, a heritage tree survey trial led by Russell Ball (ISA UK/I Chapter President) identified and assessed 11 ancient yews under Church management within one diocese. Five of the trees were given the maximum 20 points because they were highly visible, and the remaining six were given 16 points, either because they were less visible, or they had minor defects that downgraded them. Whilst they all scored sufficiently to warrant heritage protection, only seven were already formally protected by a Tree Preservation Order (the UK tree protection mechanism), so there was concern that the remaining four may be vulnerable to mismanagement or felling with no legal ramification. As a result of the TreeAH findings, the members of the initiative were able to approach the diocese and successfully work together with it to provide suitable protection and management for these trees.

Russell Ball (center left) and the Bishop of London (center with spade) plant a new yew.

Endangered ancient olive in Palestine

Internationally, TreeAH has been used in a number of high-profile cases where important heritage trees have been under threat. In Palestine, when an irreplaceable ancient olive tree thought to be about 1,500 year old, was recently set to become the latest casualty of the ongoing land dispute on the West Bank near Jerusalem, the method was used to assess its heritage importance. The ancient tree, located in the Palestinian village of al Walajeh, is close to the proposed route of the West Bank Barrier, a large construction project to install a new 8m (25 feet) tall concrete wall. If the wall was installed, the construction of its foundations and buffer zone were likely to cause extensive damage to the tree.

For such an ancient olive, it is hard to put a cash value on its cultural importance; generations of people will have benefited from its shade, eaten its fruit and used it as a focal point for social gatherings. The tree is the direct link with those people, unique because it is a living witness to those events and irreplaceable because these links with the past can never be re-forged.

Having made an assessment with the TreeAH system, the maximum possible rating was scored on all criteria reaching 20 heritage points, making this a very significant heritage tree. Such a high scoring individual is right at the top of the heritage hierarchy, which formally recognized its immense value. The situation is not yet resolved, but we are hopeful that this tree will be retained to conserve its benefits for future generations.

The nearest neighbor of this ancient olive, Abu Waji, enjoying its shade. Generations of his family have lived on the land over the wall to the left. The new 8m (25 feet) concrete wall would have replaced that wall and its construction would have inevitably caused serious harm to the tree.

Memorial avenue of oaks under threat in Australia

In Tamworth, New South Wales, Australia, residents have recently been frustrated at their attempts to prevent development proposals for a new access road that will result in the removal of an avenue of over 160 trees forming a significant green gateway into their town (aerial image opposite). These English oak trees were planted by the Community of Tamworth in 1936 as a memorial to the recently deceased English king (King George V).

Although still relatively young for oaks at 76 years old, the canopies already grow together either side of the road to form a cathedral-like effect and offer a place of high amenity for the town. It is unique because it has the longest continuous canopy of English oak trees in Australia, providing a beautiful shady and peaceful place for the community and visitors to enjoy.

With limited resources and an abundance of community spirit, the residents have mounted a vigorous campaign to get the tree feature listed as a heritage item on their Local Environment Plan, adopting TreeAH to assist and support their efforts

to save the trees.

King George V Avenue from beneath its canopy illustrating all the obvious amenity benefits mature trees can provide for local communities

Follow the campaign to save these historic trees at www.savingourtrees.wordpress.com.

The future for TreeAH

Since its launch in 2009, TreeAH has emerged as a very effective framework for the formal assessment of heritage tree value. It has been used on an international scale to help communities identify and protect important trees, and is continuing to be fine-tuned based on feedback from these practical applications around the world. For anyone interested in identifying and conserving heritage trees, it offers a means of adding weight to existing protection mechanisms and acting as a standalone assessment method where no legal protection exist. Either way, it provides an opportunity for ordinary people to make sure extraordinary trees are recognized and protected for future generations.

Mark Wadey
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