



# Saving the GIANTS

The redevelopment of the Valley of the Giants turned a degraded old site into a world-class model of ecologically sustainable tourism.

by **Cliff Winfield and Ariana Svenson**

**H**ave you ever stood inside a living tree trunk or high among the branches, watching birds fly below you? You can do both in Western Australia's South West.

One of WA's enduring tourist attractions is the Valley of the Giants, a forest of 400-year-old red tingle trees that dwarfs its human visitors.

### The past

Twenty five years ago, no tour of the South West was complete without a photograph of the car parked in the giant hollowed-out red tingle tree (*Eucalyptus jacksonii*) in the forest near Nornalup. Visitors to the well-known picnic site called the 'Valley of the Giants' could follow a little path, etched through the dense understorey, to some big tingle trees. There were also burnt out hollow bases creating black caves, and other distorted trunks bearing



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Walking in the crowns of tingle and karri trees. The Tree Top Walk is one of the key features of the Valley of the Giants redevelopment.

*Photo – Trevor Burslem*

**Below** The view from the top. Looking down from the highest point of the Tree Top Walk onto leafy understorey and emerging younger trees of the tingle forest.

*Photo – Michael James*

lumps and eye-like scars, which took on the eerie appearance of aged human faces. This near mythical experience was a highlight for the modest number of visitors seeking the South West forest experience.

Through the 1980s a growing international profile for WA brought about a dramatic change in visitor numbers. In 1989, the annual number of visitors to the Valley of the Giants was 100,000 and increasing. The

carpark had expanded uncontrollably to resemble a gravel football oval. The quaint trail to the 'giants' had become a labyrinth of 'goat tracks' leading to every big tree in the area. The bark on the trees had become polished by thousands of exploring hands and the vital nourishing layer of humus around their trunks had disappeared.



**Right** Mid-way along the Tree Top Walk, visitors are surrounded by the sights, sounds and scents of the forest canopy.

**Below right** The leaf-shaped signs in the Ancient Empire are an innovative feature of the redevelopment.

*Photos – Michael James*

For the huge tree, which had been the main attraction, the end was nigh. Years of people and vehicles trampling around its base had compacted the root zone and strangled its nutrient supply. In 1990, the giant collapsed. The valley was being visited to death.

In 1994, the then Executive Director of the then Department of Conservation and Land Management, Syd Shea, suggested that a tree top walk similar to one he had seen in Malaysia might provide a solution to the site's problems.

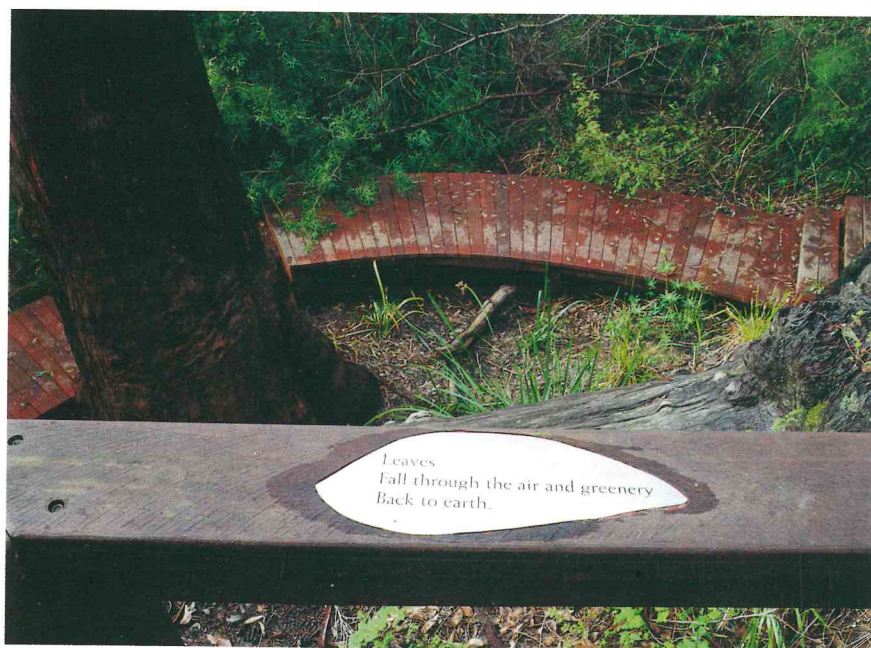
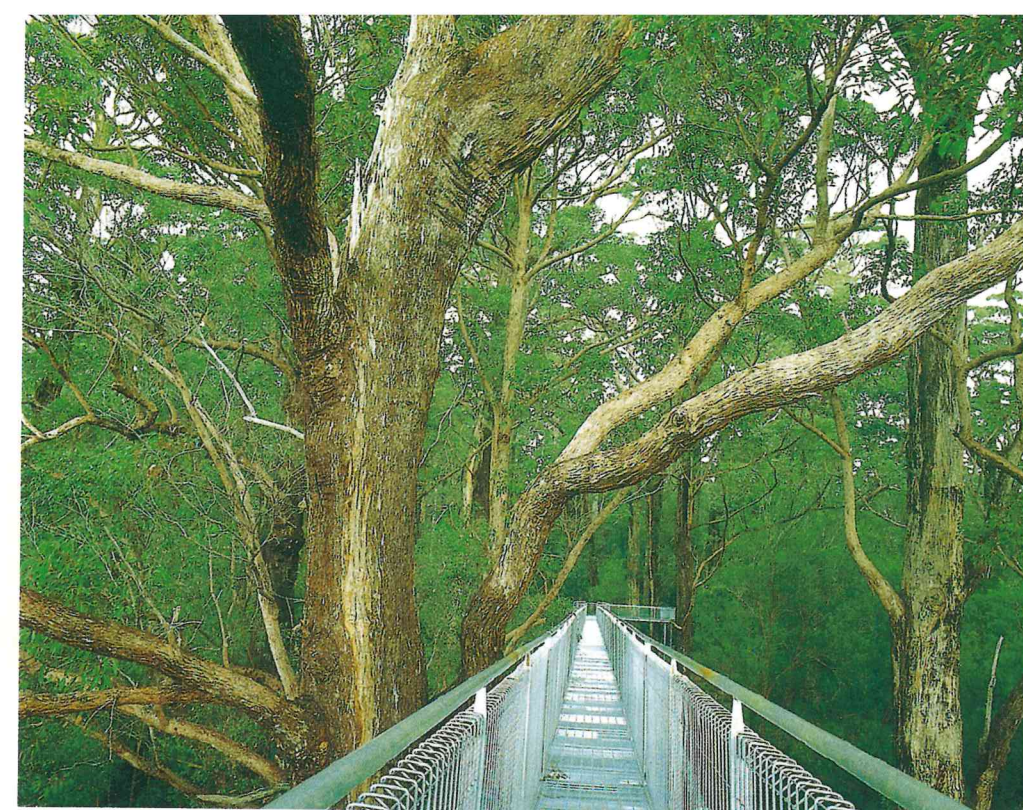
### Treading through the tree tops

After the fall of the great red tingle tree, the need for urgent protection from visitor pressure was evident. A project team examined the idea of using elevated walkways and found that similar structures in rainforest in New South Wales and Queensland were attracting enough tourists to support commercial ventures.

Plans were drafted and it became obvious that a tree top walk would minimise visitor impact on the forest, provide exciting new tourist experiences and help pay for park management, all at the same time. Visitor orientation, interpretation of the forest system and access for wheelchair users were all planned to make the experience memorable and instructive.

### Finding a site

After carrying out helicopter surveys, the team located a group of big tingle trees with trunks and crowns intact, just a few hundred metres north of the original site. So dense was the tingle forest understorey that, despite hundreds of thousands of visitors passing nearby, these 'new



giants' had remained a secret. While planners felt this was the site for the tree top walk, other visitor facilities had to be planned for as well.

With an underpinning philosophy of minimising disturbance to the bush, the master plan had to meet a range of needs including a tree top walk, the old giants, other walks, a carpark to fit 50 cars and six coaches, and a safe access road. A gathering point, to be called the 'Tingle Shelter', was planned between the proposed tree top walk and the old giants. This area later evolved into the existing shop and offices.

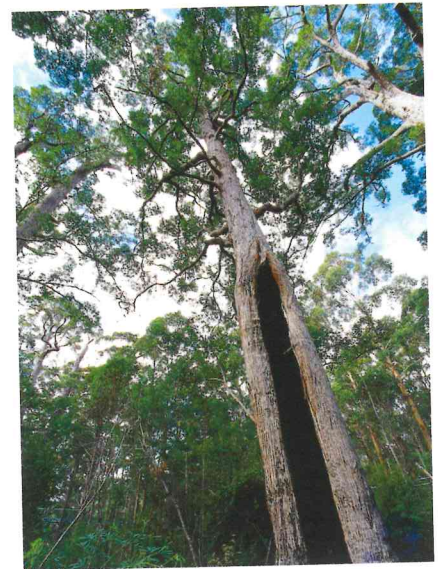
Meanwhile, the new Bibbulmun Track—the long distance walktrail from Albany to Perth—would pass through

the Valley of the Giants, bringing low impact bushwalkers seeking a wilderness experience.

### The nuts and bolts

By far the greatest challenge in the new development was the task of designing and building a tree top walk—without damaging the main attraction, the forest itself. The department held a design competition for the facility.

Designers had to produce a plan that created little disturbance to the forest environment, minimised any long-term impact on the bush and ensured visitor safety was paramount. And they had to meet strict aesthetic standards as well, creating a structure that was sculptural,



with attention to scale, form, line, colour and texture, that would blend into the forest environment.

Some 40 entries were received from around the world. The winning design came from Donaldson and Warn, Western Australian architects leading a team that included engineers Ove Arup and Partners, and environmental artist David Jones.

The design for the Tree Top Walk featured six lightweight bridge spans, each 60 metres long and four metres deep, supported between guyed pylons. The steel trusses rose slowly on a 1:12 grade over terrain that fell to a deep valley. Eventually the bridge spans reached a height of 40 metres above the creek bed. A prototype was constructed by WA-based company Future Engineering and Communication, and was carefully tested for flexibility and choice of decking material.

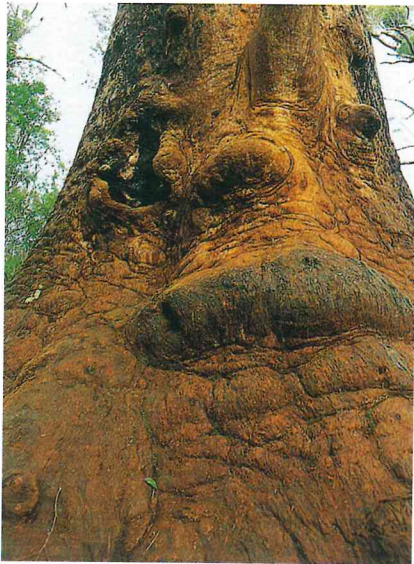
Construction commenced in 1995 after two years of planning. As the Tree Top Walk was designed to minimise the impact of people on

**Above left** The tassel flower, on which the pylon design was modelled, is often seen in the forest.

**Above** An ancient tingle struck by lightning.

**Left** The Tree Top Walk soars 40 metres into the forest canopy. The design for the pylon was inspired by the star-shaped tassel flower (above left).

*Photos – Trevor Burslem*



**Above** The 400-year-old Grandmother Tingle is a veteran of the Valley of the Giants. Her bark has been worn away by thousands of hands touching her before the Valley of the Giants redevelopment. Since the opening of the Tree Top Walk her health has improved, but human interest has left her with the eerie appearance of an old person's face.

Photo – Cliff Winfield

**Right** The boardwalk of the Ancient Empire has been carefully designed to protect the tree roots, while forming a sculptural element within the forest.

Photo – Trevor Burslem



the tingle trees, it was important that the environment was protected during construction. For this reason, the walk was built using a minimum of machinery. No helicopters or cranes were involved. First, the pylons were erected by riggers using scaffolding. The span sections, which had been prefabricated in Fremantle, were moved onto the site using four-wheel-drive utilities, and bolted together on the forest floor. Jacks were used for support, and the pylons were then hoisted into position between each of the pylons using chain blocks.

The winning design created a walkway that, remarkably, only occupies about three square metres of forest floor. The slight movement of the walk was intended to recreate the childhood experience of climbing to the top of a tall tree that sways gently in the wind. The walk moves just enough to deter the very timid, but challenges most visitors to extend their normal comfort zone. The spans are made of see-through steel decking, which

reinforces the sense of being high up in the forest canopy. This experience appeals to people's sense of adventure, and creates memories that stay with them long after their visit.

The inspiration for the design of the pylon platforms and the trusses is the tassel flower (*Leucopogon verticillatus*) and sword grass (*Lepidosperma effusum*), understorey plants of the tingle forest. The pylons are constructed from Austen steel, which oxidises to a rust colour that blends into the forest to give the impression of the walk being suspended in the air.

The low incline of the bridge spans enables access for people in wheelchairs, making the tree top experience available for everyone.

### A worldwide icon

The Tree Top Walk opened on 6 August 1996, costing a total of \$900,000 to build. The entire Valley of the Giants project, including the Ancient Empire Walk, cost \$1,825,000.

About 200,000 people from all

around the world visit each year, and by the eighth anniversary of opening in August 2004, the Valley of the Giants Tree Top Walk had received more than 1.5 million visitors.

In 2001, the Valley of the Giants site entered the Western Australian Tourism Awards Hall of Fame after winning the Significant Regional Attraction award three years in a row. In the same year, it won the Australian Tourism Award in this category.

The innovative and sensitive nature of the design was recognised when the site was awarded the BHP Steel Award, Western Australian Civic Design Award, and the National Project Award in Landscape Architecture. In 1999, the Tree Top Walk won the overall award for Action in Disability Access.

The Tree Top Walk was promoted worldwide by supermodel Elle McPherson as part of the Western Australian Tourism Commission's multi-million dollar advertising campaign and, in 2001, the Olympic Torch was carried over the 40-metre-



**Left** This interpretive panel, which stands near the start of the Tree Top Walk, is one of many examples of the leaf-shaped motif used extensively throughout the Valley of the Giants.

Photo – Trevor Burslem

The flowering cycle starts after 30 years of age, producing small white flowers once every four years in the late summer and early autumn. This can continue for the life of the red tingle, which is approximately 400 years. Trees can reach 75 metres high.

The distinctive feature of the red tingle is its large hollowed out base. The hollows have been caused over a long period of time, by fire, fungal attack and insect attack. Unlike other eucalypts, tingles do not have a taproot. They have a shallow root system that spreads as they grow older, causing the trees to buttress. This gives them more stability and also allows them to absorb more moisture and nutrients.

Its shallow root system and reliance on surface humus for nutrients makes the tingle vulnerable to compaction from people walking close to the base. The Tree Top Walk has been built to allow us to enjoy the forest without causing an adverse impact on the trees, and provides a unique opportunity to view the forest from the canopy.

The canopy, ranging between 30 and 80 metres high, also includes the yellow tingle (*Eucalyptus guilfoylei*), marri (*Corymbia calophylla*) and karri (*Eucalyptus diversicolor*). Jarrah does not grow in the vicinity of the Tree Top Walk.

### Interpreting the tingle

Another challenge facing the planners was interpretation. The Tree Top Walk might alleviate the pedestrian pressure on the forest floor of the new giants, but the problem of protecting the old giants from being loved to death remained.

Based on the theme of the lost era of Gondwana, a walk through more than 400-year-old giants was given the title 'Ancient Empire Walk' and the interpretive planning accents this. Rowena Howard, a landscape architect, was contracted to design an interpretive

high spans by another giant, Olympic basketball player Luc Longley.

The ABC worldwide television coverage of New Year's Eve for the new millennium featured a Lantern Walk through the Tree Top Walk, putting it in the company of Ayers Rock and the Sydney Opera House as a national icon.

### The rare red tingle

Part of the fascination with the tingle forest is the strange, almost primordial appearance of trees with trunks like contorted faces—the stuff of fairy tales.

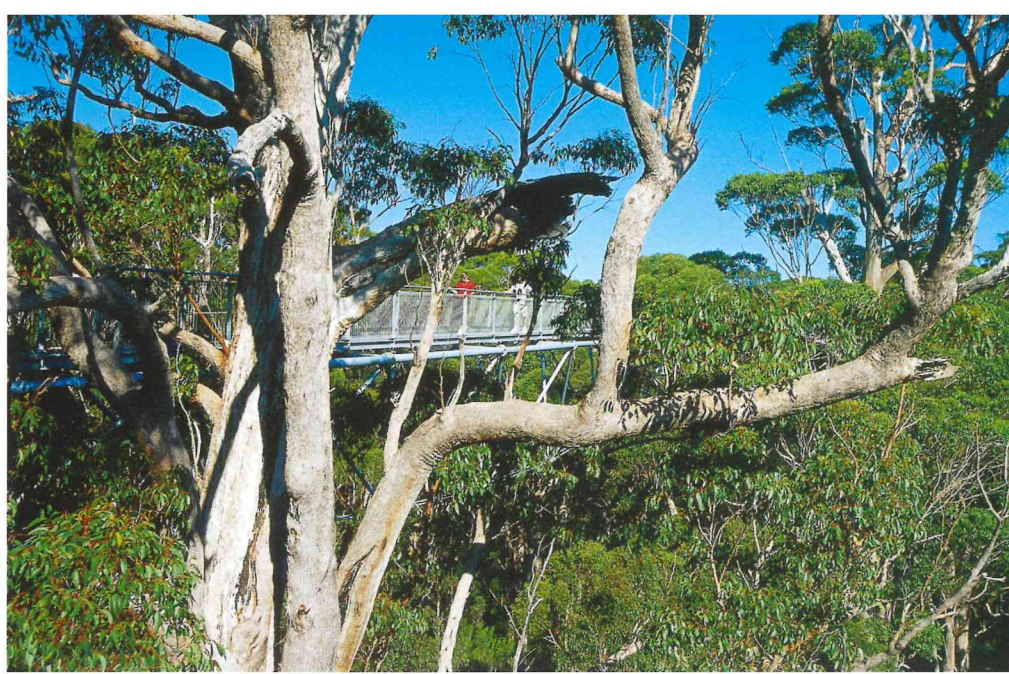
In fact, the tingle trees are caught in a botanical time warp of sorts—research suggests that tingles were much more widespread during a past wetter era. After many thousands of years of diminishing rainfall, their distribution has contracted to just a few thousand hectares around Walpole.

Many of the plants are unique to the South West of Western Australia and can be traced back 65 million years to the supercontinent Gondwana,

when Australia was joined with Africa, India, Antarctica and South America. Fifty million years ago, this landmass drifted apart to form the separate continents we know today (however, they are still slowly moving.)

Since Gondwanan times Australia has experienced much climatic change. However, here in the South West much less change has occurred. This region has an annual rainfall of over 1200 millimetres, well drained gravelly soil, low nutrient content, hilly terrain and minor seasonal change. It is this combination that has allowed species, such as relict spiders and snails from Gondwanan times to survive in the tingle forest.

The red tingle can be identified by its rough, greyish-brown fibrous bark and can have a base circumference of up to 20 metres, which makes it the largest buttressing eucalypt. This tree has an extremely restricted range and can only be found between the Deep River in the west, the Bow River in the east and within 10 kilometres of the coast, an area of about 6000 hectares.



experience, using boardwalks and hardened paths, to explore the science, fantasy, intrigue and grandeur of the old trees. The project attracted funding from the Commonwealth Department of Tourism as a site of national tourism significance.

A universally accessible boardwalk (with wide paths, stable surfaces, no steps and no grades over 1:14) leads visitors to one of the most popular of the gnarled veterans, known as Grandmother Tingle, or The Gatekeeper. The second section of the Ancient Empire Walk is a mixture of boardwalk and stabilised earth path, which winds in and out, up, over and through seven more giants. The path serves a dual purpose. For the young and fit, it is a discovery trail, while the contemplative visitor can make use of the interpretive stops, scattered along the way, with seats and inspirational poetry sculpted into metal leaf structures.

### Getting close to nature

Thousands of visitors enjoy getting close to nature on the Tree Top and Ancient Empire walks, but it became evident that there were visitors who wanted more information about the unique tingle forest.

Valley of the Giants activity programs are run during school holidays and appeal to a range of tastes with varied experiences offered throughout the district.

'Forest by Night' is a special activity that enables visitors to experience the Valley of the Giants in a different light. Led by a guide, visitors spotlight, searching for animals that inhabit the forest, including brushtail possums, woylies and quokkas. Then they

**Above left** A brushtail possum checks out its nocturnal visitors.

**Above** The Tree Top Walk spans the tingle canopy.

*Photos – Trevor Burslem*

**Right** Fungi of the forest often appears for visitors to admire.

*Photo – Richard Robinson*



head up onto the Tree Top Walk for stargazing, as the walk is illuminated and silver in the moonlight.

'Under the Tree Top Walk', a guided experience, is also popular as it gives visitors the opportunity to go under this magnificent structure and learn about some of the principles that were employed in constructing it.

### Animal care

The Valley of the Giants Tree Top Walk has played its part in the *Western Shield* wildlife recovery program, with extremely successful fox baiting in the Valley of the Giants paving the way for the reintroduction of native species.

A total of 42 woylies or brush-tailed bettongs (*Bettongia penicillata*) were released in the Valley of the Giants in March 1999 as one of four woylie translocations in the southern coastal region of the State. These energetic, hopping marsupials are the subject of a comprehensive monitoring program involving trapping and spotlight observation.

### Looking to the future

The Tree Top Walk, Ancient Empire Walk, the activities programs and the link to the Bibbulmun Track

have all helped the tingle forest to recover from a downward spiral. The modern, multi-faceted facility offers a sensitively designed interpretive and educational experience to visitors of all ages and abilities, with an element of environmentally sustainable adventure.

Through careful planning and a touch of ingenuity, the Valley of the Giants has been transformed from a degraded tourism curiosity to a vibrant, state-of-the-art, nature-based tourism experience that is an internationally recognisable icon. A model sustainable ecotourism project, the Valley of the Giants will continue to inform future generations of the value of saving the giant red tingle trees.

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Walpole Wilderness



Department of Environment and Conservation

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