A LONG ROAD

BY JEREMY THOMAS

In July 2008 a 750-year-old boab tree began a 3200km, first-of-its-kind trek to its new home in Kings Park, Perth. More than six years later, the magnificent and ancient tree has well and truly set root in its new location and in the hearts of those who have watched its journey.

Previous page
Main 'Gija Jumulu' the 750-year-old boab tree in its new home at Kings Park.
Photo – Dave Blumer

Above The boab tree at its original location in the Kimberley.
Photo – Patrick Courtney

Opposite page
Left It was necessary to excavate the root ball by hand.
Right Lifting out the 37-tonne tree by crane.
Photos – Jeremy Thomas/Botanic Gardens and Parks Authority

Deep in the Kimberley, about 30km from the north-west tip of Purnululu National Park, at a place called Warmun, known also as Turkey Creek, stood a magnificent mature boab tree (*Adansonia gregorii*). The tree, believed to be as much as 750 years old, was in an area to be impacted by planned road works on the Great Northern Highway, and had been identified as significant by the local Gija Aboriginal community. In 2008, representatives from Maunsell, Main Roads' engineering contractors, contacted the Botanic Gardens and Parks Authority (BGPA) for advice on how to transplant a tree of this size. The authority offered one thing better: a new home for the tree, which became known as 'Gija Jumulu'. What ensued was a first-of-its kind operation, which presented logistical challenges at every turn – from its initial preparation and transport, through to its establishment in a new environment more than 3200km south of its origin.

SOWING THE SEEDS

The BGPA has initiated many successful transplant projects during the past 20 years. The translocated plants enhance the amenity of the park and provide visitors with opportunities to learn about tree preservation options in urban development. It was identified that translocating the 'Gija Jumulu' boab would provide millions of park visitors with the opportunity to see and enjoy this ancient specimen while learning about the species and its natural environment. Although smaller boab trees had been transplanted to Kings Park in the past, this project was unique in many ways, and highly ambitious, due to the size and age of the tree, its remote location and the distance it needed to be transported.

It quickly became apparent that the operation would require input from and support of various local and State Government agencies, as well as a range of private companies and community groups.

With only three months to prepare for the move, negotiations began with a range of potential partners including tree transplant experts, transport specialists, the highway construction company and consultant project managers. In total, 13 project partners confirmed their support through generous donations of time, labour and equipment.

Also critical was consultation with and support from the Gija Aboriginal community, who ultimately gifted the tree to Kings Park and whose people performed a traditional smoking ceremony to bless it on its journey to its new home.

THE JOURNEY

To prepare the tree for transport on a low loader semitrailer and enable a two-lane highway journey, some judicious pruning from its original size of more than 17m tall and 10m wide was required. An estimate of the tree's weight was made based on photographs and the necessary equipment was arranged to transport the tree – thought to be between 15 and 20 tonnes. However, it was only when the root ball was unearthed and significant roots were found to be encased in decomposing granite, which required hand excavating, that the weight was found to be 37 tonnes. Thankfully, fast-thinking project managers were able to mobilise new equipment to the site to accommodate the extra unanticipated weight.

At the time of relocation in July – the middle of the dry season – the tree was leafless and in full dormancy. This was an advantage because it provided some natural protection and an offset to trauma that might have occurred during preparation and transport. So, with the tree roots wrapped for protection, and to retain moisture during transport, the long journey began.

ON THE ROAD

The sheer size and weight of the load meant that only daylight travel was possible. This provided many opportunities for people to witness the amazing sight as the tree made its way south and passed through towns such as Fitzroy Crossing, Port Hedland, Meekatharra, Cue, Eneabba and Muchea. Water was delivered to the tree along the way to ensure its roots remained moist, while pilot and police escorts diverted all traffic in front of the boab until it passed. This required major logistical considerations once the tree arrived in Perth where powerlines were lifted or lowered, street signs were removed, parked cars were towed and selected roadside trees were pruned to enable an uninterrupted passage.

Finally, after centuries of growing, several months of planning and six days of driving, the tree was welcomed by thousands of people who came to witness its arrival at Kings Park, where Noongar elders performed a welcome smoking ceremony.

Left The team involved in extracting the boab.
Photo – Jamie Shaw

Above Police escort 'Gija Jumulu' on its six-day journey to Perth.
Photo – Jeremy Thomas/Botanic Gardens and Parks Authority

SETTING THE SCENE

Of course, excavating and transporting the tree was only the start. Preparing the site was critical to the success of the transplant, as experience had shown that boab roots quickly rot and deteriorate if they are transplanted to a site without excellent drainage. Although the natural Kings Park soil is deep yellow sand, more than 70 cubic metres of screened coarse river sand was brought in to ensure there was good soil moisture drainage. Once the site was prepared, a large crane was used to lift and place the tree in its new location overlooking the Swan River.

Once 'Gija Jumulu' was in the ground, a monitoring program was implemented to record its progress. Kings Park staff monitored and recorded soil moisture, and conducted annual aerial inspections of the tree's canopy and root system. In addition, annual inspections of the tree's main stem internal tissue have been carried out using sonic tomography – a sophisticated process in which sensors are placed around the main stem that emit and record sound wave velocity. This provides an indication of the tree's health as the velocity of sound differs through healthy tissue compared with decayed and non-functional tissue. Using a complex algorithm, data is converted into a colored tomogram which indicates areas of change. Different colours represent changes in the functionality of the tissue but, since baseline data is not available for boab wood tissue for comparison, some caution is required to interpret the data. Through consultation with independent arboricultural consultants and ongoing in-house inspections, staff continue to build a database of information that will guide ongoing management.

An impervious cover was also fitted over the surface of the root zone to redirect rainfall and prevent rotting. This cover is removed during the drier months and reinstated during winter. Hydrological data from the Kimberley helps determine the watering schedule, including flood watering which is carried out using a customised subterranean irrigation system.

SIGNS OF SUCCESS

BGPA staff at Kings Park anxiously waited for the first signs of new growth on the boab and indications that it was emerging from its dormant, deciduous state signaling the transplant had been a success. As new apical and epicormic growth emerged within the crown, it was the first flower that surprised everyone at the end of its first summer in Perth.

Seeing multiple flowers developing this soon after the transplant was viewed with cautious optimism. But, concerns were allayed when flowers were discovered for the first time on the other boab trees in Kings Park and 'Gija Jumulu' continued to show positive signs of growth. Initial efforts to hand-pollinate the flowers proved fruitless (literally) as flowers – which emerge at night and last only several days before withering – are naturally pollinated by a Kimberley moth.

ROUGH PATCH IN RECOVERY

During 2009 the first indications emerged that surface decay was occurring on the south side of the tree's main stem and that areas of pressure damage from transport and crane lifting were extending in size. Although inspections initially indicated an increase in decay, new healthy callus (wound wood) was discovered forming beneath it, so close monitoring of the new callus continued. In 2011, arboricultural staff began removing the dead and decayed surface material to protect the new wood and encourage healthier development. Although this process was unsightly, and initially alarmed visitors about the health of the tree, there was little doubt it was in the best interests of the boab. Today, there are damaged areas that have been completely covered by new, healthy wound wood tissue.

"Inspections around the base of the main stem and arterial roots show some typical decay but there is an underlying presence of advanced callus and new roots extending well out beyond the severed roots. These are all positive signs that the tree is recovering well from the transplanting process."

Top left Preparation at the Kings Park site.

Above left Evidence of new root growth.

Above 'Gija Jumulu' in flower.

Below An aerial inspection of canopy growth.
Photos – Jeremy Thomas/Botanic Gardens and Parks Authority

CURRENT STATUS

Since being translocated in July 2008, 'Gija Jumulu' has shown promising progress with new growth above and below the ground. Annual aerial inspections have indicated consistent canopy growth, albeit with lighter density, as would be expected. The portions of the canopy damaged in transit all show positive regeneration of callus and new epicormic and apical growth.

Each year BGPA staff select and inspect an area of the root system to monitor the presence and progression of decay, repair, root growth and extension. Inspections around the base of the main stem and arterial roots show some typical decay but there is an underlying presence of advanced callus and new roots extending well out beyond the severed roots. These are all positive signs that the tree is recovering well from the transplanting process.

Relocating a mature tree of this size, and managing the aftermath of trauma, was always going to be challenging. But 'Gija Jumulu' has demonstrated an extraordinary ability to defend and repair itself while adjusting to its new home in Kings Park. What has also been astounding is the ongoing level of community interest in 'Gija Jumulu' – from the people in the towns it passed through who came out to see it, to those who have visited it in its new home. It has become the second most common subject of enquiry at the Kings Park's Visitor Information Centre and staff working in the boab's vicinity struggle to achieve their work programs due to the enormous visitor interest in the tree. This has prompted the installation of additional interpretation material to meet the insatiable interest in this iconic and much-loved boab, which now stands tall in its new home at Two Rivers Lookout – a far cry from its origins in the Kimberley – where hopefully it will prevail for at least another 750 years.

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