Transplanting an Ancient — The Gija Jumulu Story©

Patrick T. Courtney
Botanic Gardens and Parks Authority, Kings Park and Botanic Garden, West Perth, Western Australia 6005, Australia
Email: patrick.courtney@bgpa.wa.gov.au

INTRODUCTION

Gija Jumulu ("Boab" in the Gija language) is the name of a giant boab (*Adansonia gregorii*) that the Gija people of the East Kimberley bestowed to the people of Western Australia and visitors to Kings Park and Botanic Garden in central Perth.

Due to the realignment of the Great Northern Highway in the Kimberley, Western Australia, a large boab tree located in a flood plain at Telegraph Creek (Fig. 1) was destined for removal. Between March and July 2008, a community-based initiative was planned to save this ancient tree. The work culminated on 19 and 20 July as the Gija Jumulu was successfully planted at Kings Park and Botanic Garden, over 3,200 km (Fig. 1) from where it originally sprouted almost 750 years ago.

The journey is the longest land journey of a tree of this size in history. Beyond all expectations the project, received broad local, national, and international media coverage with the tree even entering popular culture such as political cartoons and morning radio. A "boab phenomenon" also occurred on the journey down as people on the road and whole towns stopped to look, wave, and photograph the 36-tonne boab tree making its way through the vast Western Australian outback into metropolitan Perth.

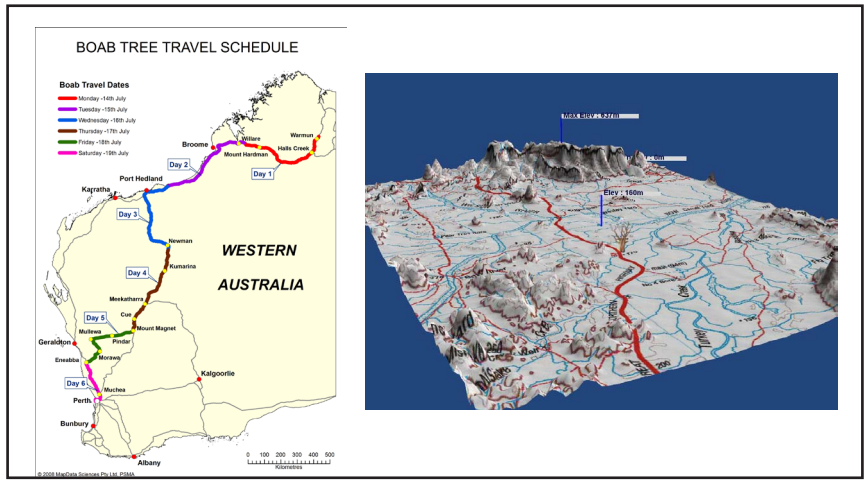

Figure 1. Planned boab journey, July 2008 (left). Boab position on floodplain, Telegraph Creek 3200 km North of Perth (right).

The project's success was based on a number of factors, including: a strong link to traditional owners and community support; detailed logistics and project planning; a strong understanding of propagation, cultivation, and physiology for boab species; and its conservation and educational aspects.

PROJECT DEVELOPMENT

In considering the project, one of the most important criteria for the Botanic Gardens and Parks Authority was that project had strong conservation links and would be a salvage activity providing long-term benefits to visitors of Western Australia's State Botanic Garden.

Integral to the project was the approval and involvement of the Traditional Owners. Shirley Purdie (Fig. 2) and her father (who spoke for the country the tree originated from) both agreed that it was worthy of support. Shirley took the idea to the Warmun community and so the gift was made.

Figure 2. Gija Elders prepare a smoking fire for the traditional smoking ceremony (left). Shirley Purdie (far right of image) and other Traditional Owners — group photo with the Gija Jumulu (right).

The first stage of the project was to determine its feasibility via a detailed logistics and project plan and to canvas a range of individuals and organisations for support. Support for the project was phenomenal with people and organisations taking a positive position from the start.

LOGISTICS

Logistic planning was vital in such a major tree transplant operation, which also involved a 3,200-km transport component. Some of the logistical considerations were:

- Transport 3,200 km by land including police and pilot vehicles.
- 40 power line lifts/inspections.
- Removal of road signs and traffic signals.
- Pruning of trees in metropolitan Perth.
- High/wide load licences.
- Sourcing site equipment in the remote North West of Western Australia.

When collecting plants for Kings Park, only small plastic bags and wet newspaper are generally required. In this case the equipment list included a 75-tonne truck, a 100-tonne crane, a 30-tonne excavator, two dozers, an elevated work platform, rollers, and water trucks.

In order to fit in with the road works master project in the Kimberly and comply with licensed times to bring the high/wide load into Metropolitan Perth, a precise schedule for mobilisation was also vital.

SITE WORKS

The first step was to confirm the extent of the underground component of tree. This was the main unknown factor in the planning process. It was discovered that the soil level had been artificially raised around the base of the trunk by up to 1.5 m due to sand mining and other activities at Telegraph Creek. In addition, a massive root ball below the surface, which had compounded itself into decomposing granite subsoil was also found.

These factors combined to dramatically elevate the estimated weight from the pre-estimate of 14–20 tonne. A new site plan was developed and the team built a hard pad next to the tree to allow a closer crane setup and the ability to lift more weight. This eventually freed the remaining anchored roots and successfully lifted the 37-tonne tree. Once new transport (appropriate for the weight) had been sourced, the project was back on schedule with the tree ready to mobilise within 3 days. Figure 3 depicts the main site processes which were:

- Excavation of roots.
- Cutting root system and applying rooting hormone (Auxinone, standard rate).
- Canopy pruning.
- Releasing tree.
- Double lift onto prime mover.
- Securing load and further canopy manipulation.

With the tree successfully lifted and packed onto the 75-tonne trailer, Shirley Purdie and another five elders performed a smoking ceremony to allow the tree to leave the Kimberley for a safe journey to Perth. The ceremony was a great way to end the project phase at Telegraph Creek.

Figure 3. Excavating root system (A), Pruning root system (B), seed collection (C), lift stage 1 (D), lift stage 2 (E), and group photo — tree prepared for travel July 2008 (F).

TRANSPORT

On the road we soon discovered that the "Boab story" had spread. People waved and photographed the scene as they stopped to allow the convoy to pass by, which was wider than the two lanes.

This phenomenon followed the tree all the way to Perth with all the towns and residents on the way coming out to see the mighty tree pass.

Six days later in Perth, a convoy followed a complicated route through the metropolitan area, which involved a pre-approved series of roads and many power line lifts. Pre-planned works including tree pruning and the removal of road/bus signs and traffic signals, made the journey through the city much easier.

The procession, involving a 75-tonne rated truck, 2 police escorts, 3 pilot vehicles, power line lifters, various media vehicles and helicopters, finally arrived in Kings Park and Botanic Garden to a great reception.

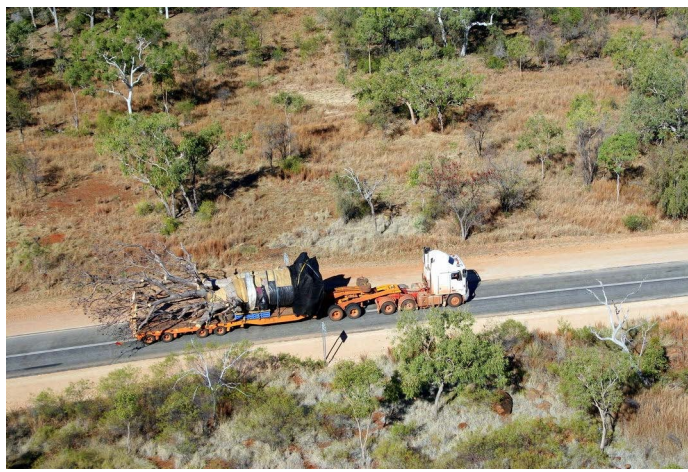

Figure 4. Gija Jumulu travels down the Great Northern Highway (Photograph by P. Stain).

TRANSPLANTING AND TECHNIQUES

The following day the Gija Jumulu was successfully transplanted at the Two Rivers Lookout (Fig. 5), and a welcoming and smoking ceremony was performed by local Nyoongar people to receive the gift from the Giga people and to commemorate the day.

Although every transplant has its own specific requirements, the general technique for *Adansonia gregorii* and most likely other Adansonia species are:

- Transplant when dormant.
- Minimise the diameter of cut roots.
- Try rooting hormone.
- Early preparation to develop a fibrous root system around base could be beneficial (we never had the time to do this due to salvage activities).

Figure 5. Planting the Gija Jumulu in the Two Rivers Lookout, Kings Park and Botanic Garden, Perth, July 2008.

- Do not change the soil level of the tree when transplanting.
- Some people say to keep the same alignment, i.e., north, south, etc.
- Avoid crown damage.
- Do not mulch with organic mulches.
- Try to mimic the condition of the original environment.
- Be careful of watering regimes in the first couple of years (risk of rotting).
- Use wide slings to lift the trees, double lifts for big trees.
- Protect the trunk when moving as scars take a long time to go (if ever).
- Use very coarse river sand to transplant into and provide excellent drainage.
- Where cold wet winters occur try exclusion of winter rains.
- Consider use of a fungicide drench for very valuable specimens.

PROGRESS

Two years on and the Gija Jumulu has made excellent progress towards full establishment, although it will be a decade before this can be fully confirmed. Indications of the trees good health have included shooting and canopy extension in the correct season and most importantly the ancient roots (which had developed in the East Kimberley for over 700 years) have formed new growth and extended a new root system. The tree has flowered both years but no fruit has set — probably due to the lack of a correct pollinator.

These important signs of life indicate that the tree has stabilized after its dramatic upheaval and is acclimatising to its new environment. Recent root examinations have also revealed that cut root surfaces are healing, with important callusing starting to take effect. Where pressure wounds occurred on the trunk during lifting, callusing from secondary xylem (a reported feature of this genera; Fisher, 1981) appears to be occurring due to proliferation of cells in the parenchyma of the pith and the secondary xylem (Fig. 7).

Figure 6. Gija Jumulu at the Two Rivers Lookout, showing full leaf, 2010 season (Photograph by D. Blumer).

Figure 7. Healing signs — callus formation arising from secondary xylem on trunk wounding (left). New root formation off cut end of original root, May 2010 (right).

EXTENSION

Finally the story of the Gija Jumulu comes full circle. Over 200 seedlings from the Boab that were successfully grown by Kings Park and Botanic Garden have journeyed back to the East Kimberly and were planted at the Warmun Community and surrounding areas. *Adansonia* is an important resource to traditional peoples wherever the genera is found. Like *A. digitata* in Africa (Gebauer, 2002), *A. gregorii* is an important food and resource for the Traditional People of the East Kimberley. This was the first urban planting of a native "bush tucker species" at the Warmun Community.

Kings Park and Botanic Garden staff continues to monitor the progress of the tree and provide the very best in cultural care. At this point the Gija Jumulu has responded remarkably to the conditions in Perth and will hopefully continue on its path to its long-term success.

LITERATURE CITED

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