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Big Brook Karri Forest— Forestry in Action

Big Brook Forest is a few kilometres northwest of Pemberton. Every year thousands of holidaymakers visit Big Brook Forest on the scenic Rainbow Trail, admiring the wildflowers, tall trees and enjoying the chatter of birds. What they are seeing is forestry in action.

Were they to have taken the same journey fifty years earlier, a very different scene would have met their eyes—expansive vistas of blackened ground with a smudge of green here and there, heralding the rebirth of a forest. What, then, has happened at Big Brook?

A brief look at history

Early settlers were attracted to the karri forest, both for the fine timber yielded by the trees, and for the loamy soils in which they grow. They reasoned that a soil that supported such immense trees could produce bumper agricultural crops. Although the dreams of enormous crops were never fully realised, the soils nevertheless are eminently suitable for some agricultural pursuits and the difficult task of clearing the forest for farms was tackled with energy, for a while. Competition for the forest emerged in 1913 when, backed by an order for sleepers for the Trans Australia railway line, a State sawmill was set up at Pemberton with exclusive rights to the timber in the area. By 1925 the Big Brook Forest had been set aside for a State forest and management of it for forestry purposes could begin in earnest.

What happened at Big Brook?

The old forest consisted largely of big, mature trees that were declining in health and growing extremely slowly—in business terms, a large capital with a very low rate of interest. In areas where commercial timber growing is the aim, good forestry practice dictates that the timber from these trees be harvested and that they be replaced by younger, vigorously growing trees. The forester calls the replacement process 'regeneration.'

By the 1920s the timber industry could look back on nearly 50 years experience in cutting karri in the Karridale area near Augusta and near Denmark on the south coast. Inspection of these forests, which had been clearfelled, except for a few unsuitable trees, revealed new dense forests of thriving young karri. If it could be done at Karridale, then it could be done at Big Brook, and it was. Harvesting the mature trees proceeded and by 1930 some 2,000 hectares had been clearfelled to produce logs for the Pemberton mill. Only a few trees unsuitable for sawmilling were left standing. These remaining trees were to play an important role in the regeneration of the forest. They would supply the seed.

Normally karri seed cannot germinate when it falls on a carpet of dead karri leaves such as covers the ground in the forest. Any seed that falls on the odd patch of bare ground, once germinated, is soon smothered by the dense layer of shrubs on the forest floor. These problems were overcome in nature by periodic fires, started by lightning, that raged through the forest. Fires bared the ground, killed the shrubs (and often the karri trees as well), but created ideal conditions for the germination of karri seed, and the subsequent development of the young seedlings.

So the forester, following nature's example, used fire to regenerate the karri forest.

The 2,000 hectares of clearfelled forest at Big Brook were prepared for burning (there was plenty of fuel from the branches of the felled trees) in 1930, and a regeneration burn was planned for that summer. However, a wildfire accidentally lit by a bush locomotive did an even more thorough job, as well as laying to waste much of the surrounding countryside, and threatening for a time, the township of Pemberton.

Soon after the fire, the remaining standing trees shed their seed and this germinated the following winter. Within 18 months the new crop of karri saplings was dense enought to make walking through the area difficult.

Big Brook Arboretum

Foresters are continually testing the value of different ideas or possibilities. A few hectares of the felled karri forest at Big Brook were set aside to test a range of tree species. Seed was imported and tree seedlings were raised in a nursery located at what is now the junction of Rainbow and Tramway Trails. First plantings in 1929 included pines from Europe, giant redwoods from California and swamp cypress from Mexico.



Regeneration burn beneath seed trees

Subsequent plantings used eucalypts from the Eastern States.

Most of the European pines disliked our climate, and the giant redwoods, although very attractive trees, have not yet lived up to their name. However some of the Eastern States' eucalypts performed well and one species at least satisfied the foresters' search for something better. Yellow stringybark (Eucalyptus muellerana) grew as fast as karri for the first 40 years of its life. This attractive tree produces an exceptionally durable timber. Based on evidence from Big Brook Arboretum (and trials established elsewhere), yellow stringybark is now planted on a modest scale to provide future supplies of transmission poles to the State Energy Commission.

The arboretum still exists. It can be visited a few kilometres along the Rainbow Trail, and the picnic and barbecue facilities provided make a pleasant spot to stop for a meal in the forest and a ramble through the plantation.

Big Brook karri-further development

The dense, almost impenetrable mass of karri seedlings following the regeneration of Big Brook Forest in 1930 soon began to thin themselves. The estimated 125,000 seedlings on each hectare began to crowd each other, and the weaker trees died. By 1950 the number per hectare was down to below 1,000. Left to nature this process would continue until about 20 trees remained on each hectare. However, by about age 30 the trees are large enough to provide some timber, so the forester steps in, anticipates nature and reduces the number of trees to a level that the soil can support. This 'first thinning,' as it is called, yields a moderate amount of timber suitable for the sawmill; other thinnings are chipped and used to make paper.

As the trees continue to grow, overcrowding again becomes a problem and a 'second thinning,' this time yielding substantial quantities of timber for the sawmill, is done when the trees are around 60 years old

Most of the forest bordering Rainbow Trail has not been thinned. However, there is plenty of thinned forest to be seen on Tramway Trail.

Sometime after the year 2030, should karri timber still be required by the community, the Big Brook forest may again be clearfelled and the whole process repeated.

The karri forest today

What has happened at Big Brook is being practised elsewhere today; this is how your karri forests are being managed. However, there are some differences today compared with 50 years ago.

The marri, or red gum (Eucalyptus calophylla), trees that often grow among the karri were once wasted. They are now harvested, chipped, and used for paper manufacture, along with the few karri that are unsuitable for sawmilling. When these mixed forests are regenerated, both species regrow in the new forest.

In the days of the regeneration of Big Brook, the seed which was to form the new forest came from reject trees. Nowadays four of the very best trees are left on each hectare to provide seed. Once they have shed their seed they are felled and used for timber.

However, karri only produces a crop of seed once every four years. As a consequence it is only possible to use seed as a source of regeneration every fourth year. For the three years between seed crops, karri seedlings, raised in a nursery at Manjimup, are planted instead.

What's in it for you?

Take a trip through Big Brook Forest; you will find it beautiful and exhilarating. When you get home, take a look at the roof of your house. The chances are that the timbers in there are karri.

Let's look at some of the benefits Big Brook karri forest is providing.

- a beautiful forest offering you a unique recreation experience.
- the forest yields cool, pure water for the Pemberton water supply, and for the trout hatchery at
 Pemberton
- if you fish for marron or trout you will appreciate the year-round flow of the streams, ensured by the forest.
- a home for more than 70 different varieties of birds, and 14 varieties of native animals (most are only active at night so you won't see much of them).
- in some seasons a show of flowers to make any gardener envious.
- timber for your home.
- timber and woodchips for an important export market.

Rainbow Trail

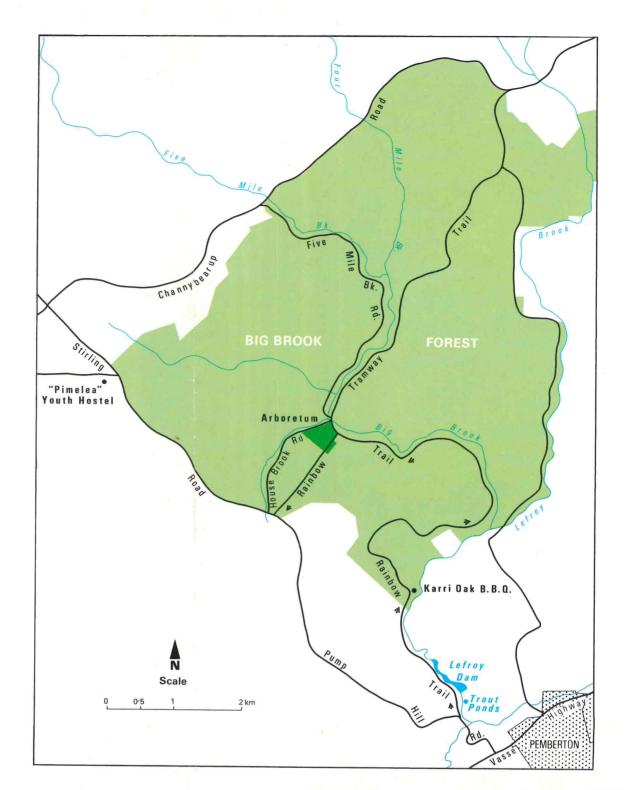
This nine kilometre scenic route follows the formation of an old steam railway line for much of its length through Big Brook Forest. Starting from Pemberton townsite, it follows Lefroy Brook initially passing the ponds of the trout hatchery and Lefroy Weir before entering Big Brook Forest.

There are many particularly picturesque areas along the trail including picnic sites at 'Karri Oak' and Big Brook Arboretum. A walk trail starts at the arboretum picnic site and circles through the arboretum and adjacent regenerated karri forest.

Produced by Forests Department Information Branch 50 Hayman Road, Como. 6152.

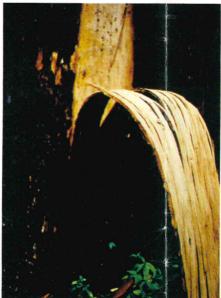
for P.J. McNamara Acting Conservator of Forests Reprinted December 1984 Photography by Cliff Winfield.

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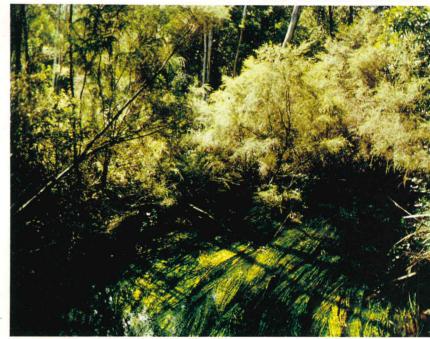
LOCALITY MAP





Karri decorticating





Big Brook itself





Bark of Karri Oak



