

To Whom it may Concern:

A Brief Inspection of a Forest Site with a View to Private Logging and Fire Control

I have been approached by Mr Hillan 'Sandy' Bagshaw of Bridgetown to do a light forest and landscape assessment of an area of forest south of Bridgetown, in the Blackwood Valley. It once belonged to him, but is now owned by Gucece Holdings Trust of Perth.

As I understand it, Mr Bagshaw has discussed with Gucece Holdings Trust the possibility of harvesting some timber on the property, and, importantly, maintaining fire breaks. On 30th of August this year a small party of us went there to make a quick inspection.

The patch of forest concerned is originally *jarrah-marri*, with possibly some *blackbutt*, on good loam, on a steep slope, near a creek running down to the Blackwood River. It also now includes a sprinkling of *Pinus radiata* saplings, presumably wind sown from a nearby pine plantation.

At the site I spent half an hour or so taking the girths at breast height of fifteen of the largest *jarrah* and *marri* trees, and pacing the distances between them, from which the number of potentially millable stems per hectare is given below.

Results:

The girths at breast height of fifteen millable trees, chosen at random, were four *marri* (45, 41, 59 & 35 cm). and eleven *jarrah* (30, 200, 210, 70, 79, 66, 148, 48, 52, 68 & 75 cm). Total ground area occupied by these fifteen trees was approximately 120 square metres, giving a roughly estimated stocking of 80 millable trees/ha. by Heron's Formula (Reference 1).

Other Relevant Information:

With regard to fire, there are many very old *balga* (*blackboys*) grasstrees amongst rocks on the slope above the site, and inspection of their heavy, rotten thatch suggests that the last bushfire in that area was fierce, and about 60 years ago. Mr Bagshaw agrees with this based on his long experience of the area. Like most *balga* in the south-west, these old *balga* desperately need burning at the traditional *Noongar* intervals of 2-4 years to remove old thatch, encourage flowering and seeding, and reduce termite invasion, stem rot, fracture and collapse. In my view there is a danger of losing most of these *balgas* from these causes in the next few decades if there is no burning.

I am not an expert on forest hydrology, but from his own long experience, Mr Bagshaw suggested that the forest at the bottom of the slope needs thinning to conserve water for the presently dry forest at the top of the slope. This is an interesting idea, but is more complicated than it may seem. Would removing large trees near the creek increase the water supply upslope, or would the extra water simply run down into the creek? It might depend on the time of year any tree falling takes place, since the creek may be influent in winter, but effluent in summer.

Another factor in the site hydrology is the presence of a plantation of thirsty Tasmanian Blue Gums on the crest of the hill. This question also lies outside my expertise, and needs advice from a specialist forest hydrologist. I suspect that these Tasmanian trees will continue to suck ever more water from the ground until they die, are cleared, or destroyed by a wildfire.


With regard to fauna and flora, many kangaroos were seen in the area (a mob of 30-40) and the area under examination was laced with their well used paths. From *Noongar* information these kangaroo paths, together with *Noongar* footpaths (*bidi-bidi*), were, under light fuel conditions due to frequent burning, used in the past as effective firebreaks. They could, and should, be used in this way again

During the short visit no birds were seen, and few wildflowers, which are probably smothered by the deep, old leaf litter. A few *zamia* plants remain, but are small and pale, with only a few fronds, probably due to nitrogen deficiency. They also need more frequent burning at the traditional 2-4 year intervals, to promote their red *byoo* seeds, increase their fronds, and boost nitrogen fixation in the soil (References 2 & 3). From the human ecology point of view, such frequent burning would also make human inhabitants of the Blackwood Valley safer from future wildfires. Older *Noongar* people are well aware of this ancient human benefit, and in conversations with me often complain about the current lack of burning.

The present day insufficient burning may, I believe, be partly due to lack of sufficient government funding for the Department of Biodiversity, Conservation and Attractions (DBCA), and partly due to unreliable papers from some academics, using 'computer models' rather than practical experience in the realities of fire fighting. Some academics should read more *Noongar* and early settler bushfire history and philosophy (References 4 & 5), in addition to 'refereed scientific papers' by their academic colleagues.

I hope this brief letter will help Mr Bagshaw and Guce Holdings to settle the matter with each other and the appropriate government authorities.

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References:

- 1: Ward, D. (1991) Triangular Tessellation: a new approach to forest inventory. *Forest Ecology* 44: 285-290.
- 2: Grove, T.S., O'Connell, A.M. And Malajczuk, N. (1980) Effects of fire on the growth, nutrient content, and rate of nitrogen fixation of the cycad *Macrozamia riedlii*. *Australian Journal of Botany* 28:271-281.
- 3: Hansen, A.P., Stoneman, G. and Bell, D.T. (1988). Potential inputs of nitrogen by seeder legumes to the jarrah forest ecosystem. *Australian Forestry* 51(4):26-231.
- 4: Ward, David Jefford (2010) PhD thesis 'People, Fire, Forest and Water in Wungong: The Landscape Ecology of a Western Australian Water Catchment', Curtin University. Available online.
- 5: Ward, David Jefford (2022) *Our Dangerous Friend, Bushfire Philosophy in South-West Australia.*, The Book Reality Experience, Western Australia. Available for loan from WA State Library, or purchase from Amazon or other booksellers.