

Managing wandoo forest

Notes from Roger Underwood for SWAN field day at Toodyay, 26 August 2017

As with all native forests, the management regime adopted depends upon the objectives of the forest owner. For example, the objective might be honey or timber production, water catchment protection, landscape/aesthetics, fauna habitat, shelter for ewes and lambs, or some combination of all of these (known by foresters as "multiple use").

Depending on the objective certain refinements or appropriate measures will be given day-to-day priority by the forester. For example if your principal objective is fauna conservation you might fence the area and bait for foxes and cats. If timber production you might undertake thinning and pruning.

However, two aspects of management are fundamental, and must be carried out irrespective of your main aim. These are (i) protection of the forest (and associated values) from high-intensity bushfires; and (ii) regeneration of the forest after disturbance so as to ensure forest values are sustained. These are discussed below.

1. *Bushfire Protection*

Like all eucalypt forests, the wandoo forest is bushfire-prone. It occurs in an area with hot, dry summer months, the vegetation is flammable and fires are always likely to be started by lightning. And like all eucalypt forests, the wandoo bush accumulates fuel over time in the absence of fire. The rate of accumulation is slower than in the jarrah forest, but is still inexorable. The more fuel the more intense the fire and the more damaging to forest (and human) values.

Fires in wandoo country are generally fast-moving, because it is more open and windy, and often there are grassy flats interspersed by steep gullies and ironstone hills up which a fire will sweep. And although mature wandoo trees are very resilient to mild or moderate intensity fire, they will be killed stone-dead by a high-intensity wildfire.

The forest can be protected from high-intensity wildfire with a two-pronged approach. First you need to have the capacity to fight a fire and try to extinguish it as soon as possible after ignition. This means having trained and equipped firefighters on hand. All wandoo forest owners should have a fire unit, and should join or support their local brigade. However, fighting fires (especially on bad days) is only successful if the bush has been prepared in advance. So, the other essential precaution is to burn the bush with a mild intensity prescribed burn every few years to clean away bushfire fuels. I favour light patchy burns done during warm, sunny days in winter.

Regular burning will virtually fire-proof your bush, at little expense. Burning is also an enjoyable family job. Don't listen to those who say it will destroy the flora and fauna and degrade the soil. None of this is true. Frequent mild-intensity burning was what the Aborigines did for 50 thousand years, and the flora and fauna we have today is a product of that regime. Wandoo bush loves fire and thrives on it, but here I am talking about the mild fire of a prescribed burn, not the raging inferno of a summer wildfire.

I have a motto: *Good Fires Prevent Bad Fires*. In nearly 60 years of experience in the WA bush I have never seen this statement disproved. The most successful fire management of wandoo forest I ever saw was conducted in the Julimar Forest before it became State Forest in the early 1960s. The bush was looked after by the Cook Brothers, beekeepers from Bolgart, who would burn the entire forest with light winter burns every 2-3 years. The end result was a beautiful and bountiful forest.

Note: prescribed burning is not just "burning off". It must be done legally and responsibly. If you are unsure how to do this, consult your local brigade or DFES officer.

2. *Regeneration*

Although occasionally you will find wandoo seedlings getting away on disturbed soil, for example a cultivated firebreak, as a general rule in the bush wandoo only regenerates by seeding into an ashbed. Seed that falls onto stony ground, leaf litter, or only lightly burned ground, generally will not germinate. This seed is simply harvested by ants.

But if you have a proper ashbed, formed by the intense burning away of a log or a tree crown, the seed will bury itself in the soft ash and then germinate when the winter rains arrive.

Wandoo flowers and produces seed nearly every year. Flowering occurs over summer in year 1, then the buds mature into fruit with ripe seed, usually in the second year after flowering - although this can vary. Every now and again, maybe every 5-6 years, there will be a really big flowering, with every tree in the bush in heavy blossom. These are the years the beekeepers love and which can form the basis for a regeneration operation. In my days as a forester I used to confer regularly with the beekeepers who would tell me when a general flowering was coming on and I would know that one or two years hence, there would be oodles of ripe seed.

I carried out a lot of regeneration work after timber cutting in wandoo forest in the Helena catchment and the Julimar in the 1960s. When we had a good seed year, we would burn the logging debris in autumn. The result was mass germination on the ashbeds, a lovely sight to a forester's eyes! Today those seedlings are now trees nearly 50 years old.

Ashbeds have four great advantages: (i) they provide a soft seedbed for the germinating seed; (ii) they are nutritious; (iii) they sterilise the site and keep away all those seed-eaters who otherwise would prevent regeneration; and (iv) they don't carry a fire again for several years. Wandoo saplings have a rough, fibrous bark up until about the age of 10, during which time they can withstand a mild fire. The older trees have clear bark, but it is thick and provides good insulation against mild fire.

Natural regeneration on ashbeds produces thick clumps of saplings. These thin themselves out over time, but you can assist the process by getting amongst them with your axe and taking out the poorer individuals. Wandoo makes superb firewood. Of course, sheep must be excluded from young regeneration until the crowns of the saplings are out of reach. Kangaroos will graze young wandoo, but do not seem to destroy them as sheep will.

Finally, wandoo can also be regenerated by planting nursery-raised seedlings. The site must be spot-cultivated, and weeds controlled. In the bush the new seedlings will only succeed if planted in an opening where they are free from competition by mature trees. In my experience wandoo never seems to grow into a very nice tree from a seedling, probably due to poor genetics and being relatively open grown. But of course this depends on your definition of a "nice tree" and your objective of management. If you just want a tree, there is nothing to worry about, but if you want a strainer or sawlog in the future, pruning and thinning of crop trees is essential.

Conclusion: Wandoo is one of our finest trees: tough, beautiful, useful. It will look after itself left to its own devices. But if you want a wandoo forest for a particular purpose, it must be managed, and management must start with the two essentials: fire protection, and regeneration after disturbance.