Gammage, B. 2011, *The biggest estate on earth: how Aborigines made Australia*, Allen & Unwin, Crows Nest, N.S.W., pp. 1-17.

# INTRODUCTION

# The Australian estate

This book describes how the people of Australia managed their land in 1788. It tells how this was possible, what they did, and why. It argues that collectively they managed an Australian estate they thought of as single and universal (see Definitions).

The Australian estate was remarkable. No estate on earth was on so much earth. Including Tasmania, Australia occupies 7.7 million square kilometres, and straddles great diversity. Its southern neighbour is the Antarctic, its northern third is in the tropics. Cape Byron in the east is 4000 kilometres from Shark Bay in the west, and the land between includes Australia's most productive farmland and its biggest deserts. Southeast Cape in the south is 3700 kilometres from Cape York in the north, yet both support rainforest. Moving inland from the coast, annual rainfall can decline by an inch a mile (15 mm/km), although rain rarely falls predictably anywhere. Over most of the continent highly erratic rainfall is what is predictable. Europeans have yet to get the hang of this. They know that seasons are not always seasonal, and in the north they recognise a Wet and a Dry, but in the south they mark the four seasons their ancestors brought from Europe. This convention recognises temperature but not rainfall, yet rain is central to managing the Australian estate.

The book rests on three facts about 1788.

1. Unlike the Britain of most early observers, about 70 per cent of Australia's plants need or tolerate fire (ch 3). Knowing which plants welcome fire, and when and how much, was critical to managing land. Plants could then be burnt and not burnt in patterns, so that post-fire regeneration could situate and move grazing animals predictably by selectively locating the feed and shelter they prefer.
2. Grazing animals could be shepherded in this way because apart from humans they had no serious predators. Only in Australia was this so.

3. There was no wilderness. The Law—an ecological philosophy enforced by religious sanction—compelled people to care for all their country. People lived and died to ensure this (ch 4).

The Law prescribed that people leave the world as they found it. 1788 practice was therefore conservative, but this did not impose static means. On the contrary, an uncertain climate and nature's restless cycles demanded myriad practices shaped and varied by local conditions. Management was active not passive, alert to season and circumstance, committed to a balance of life.

The chief ally was fire. Today almost everyone accepts that in 1788 people burnt random patches to hunt or lure game. In fact this was no haphazard mosaic making, but a planned, precise, fine-grained local caring. Random fire simply moves people's guesses about game around the country. Effective burning, on the other hand, must be predictable. People needed to burn and not burn, and to plan and space fires appropriately (ch 7). Of course how a pattern was made varied according to terrain and climate: heath, rainforest and Spinifex each require different fire. Yet in each the several purposes of fire remained essentially the same. A plant needs fire to seed, an animal likes a forest edge, a man wants to make a clearing. Means were local, ends were universal. Successfully managing such diverse material was an impressive achievement; making from it a single estate was a breathtaking leap of imagination.

Edward Curr glimpsed this. Born in Hobart in 1820, pioneer squatter on the Murray, he knew people who kept their old customs and values, and he studied them and their country closely in the decades of their dispossession. After 42 years in Victoria he wrote, 'it may perhaps be doubted whether any section of the human race has exercised a greater influence on the physical condition of any large portion of the globe than the wandering savages of Australia'.[1] He knew that linking 'wandering savages' to an unmatched impact on the land startlingly contradicted everything Europeans thought about 'primitive' people. He deliberately defied a European convention that wanderers barely touched the land, and were playthings of nature.

Some researchers still think this (appendix 1). They give ground grudgingly on whether Aborigines altered the land. They argue or assume that nature alone made the 1788 landscape, perhaps via lightning fires.[2] There is no evidence that lightning caused most bushfires in 1788, nor that it could shape plant communities so curiously and invariably as to exclude human fire impacts. Today lightning fire estimates vary from 0.01 per cent in western Tasmania to 30 per cent in Victoria, the latter an overestimate compared to 7–8 per cent for southern Australia and at most 18 per cent in

the north. Only for western Queensland (80 per cent) does any researcher think lightning the major cause of fire.[3] Today's 'relatively low frequency of lightning strikes in Australia'[4] was even lower in 1788, because people lit so many fires then, leaving less fuel for lightning to ignite. If lightning fire distributed Australia's plants, outside towns and farms the distribution pattern should be similar now and in 1788. It is not.

Other researchers pioneered a growing awareness that 1788 fire was important to plant distribution, and might explain it. Although early observers like Thomas Mitchell and Ludwig Leichhardt knew that Aborigines fired grass to attract game, not until the 1960s did researchers begin to sense system and purpose in Aboriginal burning. From different perspectives RC Ellis, Sylvia Hallam, Bill Jackson, Rhys Jones, Peter Latz, Duncan Merrilees, Eric Rolls, Ian Thomas and others showed how extensively 1788 fire changed the land.[5]

Where possible people worked with the country, emphasising or mitigating its character. Sometimes this was all they could do. Mountains, rocks, rivers and most swamps were there to stay. Yet even in these places people might change the country. They dammed rivers and swamps. They cut channels through watersheds (ch 10). They used fire to replace one plant community with another.

What plants and animals flourished where related to their management. As in Europe land was managed at a local level. Detailed local knowledge was crucial. Each family cared for its own ground, and knew not merely which species fire or no fire might affect, but which individual plant and animal, and their totem and Dreaming links. They knew every yard intimately, and knew well the ground of neighbours and clansmen, sharing larger scale management or assuming responsibility for nearby ground if circumstance required.

They first managed country for plants. They knew which grew where, and which they must tend or transplant. Then they managed for animals. Knowing which plants animals prefer let them burn to associate the sweetest feed, the best shelter, the safest scrub (ch 8). They established a circuit of such places, activating the next as the last was exhausted or its animals fled. In this way they could predict where animals would be. They travelled to known resources, and made them not merely sustainable, but abundant, convenient and predictable. These are loaded words, the opposite of what Europeans once presumed about hunter-gatherers.

A key difference between how farmers and how Aborigines managed land was the scale of 1788 enterprise. Clans could spread resources over large areas, thereby better providing for adverse seasons, and they had allies, sometimes hundreds of kilometres away, who could trade or give refuge. They were thus ruled less by nature's whims, not

more, than farmers. It is unwise to think of 'normal seasons' in Australia, but in seasons which suited farming, 1788 management made resources as predictable as farming, and in times of drought and flood made them more predictable. Mere sustainability was not enough. Abundance was normal.

This was a tremendous advantage. It made plants easier to concentrate, to burn, to let fallow, to make park-like, to share. It made life comfortable. Like landowning gentry, people generally had plenty to eat, few hours of work a day, and much time for religion and recreation. A few Europeans recognised this (ch 11), but for most it was beyond imagining. They thought the landscape natural and they preferred it so.

They did not see, but their own records show how carefully made, how unnatural, was Aboriginal Australia. It is time to look again.

Three rules directed 1788 management:

- Ensure that all life flourishes.
- Make plants and animals abundant, convenient and predictable.
- Think universal, act local.

These rules imposed a strict ecological discipline on every person. A few non-Aborigines have begun to think this worthwhile, but even on a district scale, let alone all Australia, none can do it.

How Aborigines did it is the story of this book.

# 1

# Curious landscapes

In 1770 Lieutenant James Cook, HMS *Endeavour*, saw something remarkable along Australia's east coast: the trees had 'no under wood'. On 1 May he 'made an excursion into the country which we found diversified with woods, lawns and marshes; the woods are free from underwood of every kind and the trees are at such a distance from one another that the whole country or at least a great part of it might be cultivated without being obliged to cut down a single tree'.[1] The land equally surprised Joseph Banks, gentleman on board. 'The country tho in general well enough clothed', he wrote, 'appeared in some places bare. It resembled in my imagination the back of a lean Cow, covered in general with long hair, but nevertheless where her scraggy hip bones have stuck out further than they ought accidental rubs and knocks have entirely bared them of their share of covering.' Hilltops, Banks was saying, were bare. Trees were on lower slopes, but 'were not very large and stood separate from each other without the least under wood'.[2] Sydney Parkinson, Banks' draughtsman, echoed his employer: 'The country looked very pleasant and fertile; and the trees, quite free from underwood, appeared like plantations in a gentleman's park.'[3]

In the Whitsundays further north, Cook saw 'land on both the Main and the Islands . . . diversified with woods and Lawns that looked green and pleasant'.[4] There a century later naval commander GS Nares named Grassy Island, because it was grass-covered with a few trees on its summit. About half the island is tree-covered now. Nares saw other grassy Whitsunday islands, but except where cleared all are wooded today.[5]

On 23 August Cook summed up the east coast. It was 'cloathed with woods, long grass, shrubs, plants &ca. The mountains or hills are chequered with woods and lawns. Some of the hills are wholly covered with flourishing trees; others but thinly, and the few that are on them are small and the spots of lawns or Savannahs are rocky and barren.'[6] This was no shipside impression. Among other landings, Cook spent seven weeks at Cooktown (picture 13).

These remarks are curious. Untended east coast bush today has much underwood and no bare hills, let alone woods chequered with lawns. Yet in the years to come Cook's words were repeated again and again, and Europeans fresh-seeing the land made Parkinson's comparison with a gentleman's park more often than any other.

Across Australia newcomers saw grass where trees are now, and open forest free of undergrowth now dense scrub. South of Hobart, Abel Tasman saw land 'pretty generally covered with trees, standing so far apart that they allow a passage everywhere . . . unhindered by dense shrubbery or underwood'.[7] This is dense forest now: why not then? Of course in 1788 there were thick scrubs, impenetrable eucalypts, rainforest walls, but this sharpens the puzzle, for often they gave way abruptly to grass. In 1824 William Hovell reported moving suddenly from grass into tangles of undergrowth and fallen timber piled higher than his horses, almost impossible to walk through, let alone ride.[8] Tasmanian Buttongrass, common in boggy country, also occurs where rainforest should be. How did it get there? Not how does it stay there now, but how did it get there in the first place, despite no change in soil, aspect or elevation from adjacent rainforest? White Grass likes open country, yet can be found under trees. For this to happen, once open country became treed. How? In 1788 Australia had more grass, more open forest, less undergrowth and less rainforest than made sense to Europeans. It was another country.

There is a tandem puzzle. Typically, grass grew on good soil and trees on poor (ch 7). In 1826 Robert Dawson described country behind Port Stephens (NSW) as

> in general heavily timbered, and as usual, without underwood. After crossing a deep, and in some places a dry channel, which in rainy seasons would be called a river, the soil began to improve. The country gradually became less heavily timbered, and the views more extensive. This was in accordance with what I had been previously led to expect, and fully confirmed by my former observations, that the poorest soils contained more than treble the number of trees that are found in the best soil, being also much longer and taller. This, like most other things in this strange country, is, I believe, nearly the reverse of what we find in England.[9]

In South Australia Edward John Eyre, a most competent observer, wrote, 'For the most part we passed through green valleys with rich soil and luxuriant pasturage. The hills adjoining the valley were grassy, and lightly wooded on the slopes facing the valley;

towards the summits they became scrubby, and beyond, the scrub almost invariably made its appearance',[10] and Charles Sturt observed,

> As regards the general appearance of the wooded portion of this province, I would remark, that excepting on the tops of the ranges where the stringy-bark grows; in the pine forests, and where there are belts of scrub on barren or sandy ground, its character is that of open forest without the slightest undergrowth save grass . . . In many places the trees are so sparingly, and I had almost said judiciously distributed as to resemble the park lands attached to a gentleman's residence in England.[11]

Near Gundagai (NSW) in the 1840s two tourists found 'beautiful meadow-land . . . bounded by sloping ranges of hills covered with grass, and thinly timbered. Generally speaking, all fertile lands in Australia appear to be characterized by these beautiful features.'[12] Generally speaking that was so in the 1840s, but not now. Why did the most fertile land grow the fewest trees?[13]

A few travellers puzzled at this. In 1831 William Govett saw summits behind Sydney 'clothed with grass, which circumstance, considering the barrenness and excessive sterility which pervades all the connecting ridges, and that region of the mountains, is certainly very extraordinary . . . In general . . . the ranges are covered with short timber and scrub.'[14] 'The great peculiarity here', RJ Sholl wrote northeast of Broome (WA), 'as well as in the land to the north of the Glenelg, is the total absence of undergrowth bushes; between the widely separated thin and short trees there is nothing but grass and creepers. Let it be thin or thick, good or bad, tall or short, still it is grass.'[15] At Omeo (Vic) about 1843 Henry Haygarth portrayed his perplexity vividly:

> The gloomy forest had opened, and about two miles before, or rather beneath us—for the ground, thinly dotted with trees, sloped gently downwards—lay a plain about seven miles in breadth. Its centre was occupied by a lagoon . . . On either side of this the plain, for some distance, was as level as a bowling-green, until it was met by the forest, which shelved picturesquely down towards it, gradually decreasing in its vast masses until they ended in a single tree. In the vicinity of the forest the ground was varied by gentle undulations, which, as they intersected each other, formed innumerable grassy creeks and open flats, occasionally adorned with native honeysuckles and acacias . . . Two

> remarkable conical hills, perfectly free from timber, rose in the middle of the largest plain . . . The whole, as far as the eye could reach, was clothed with a thick coat of grass, rich and luxuriant, as if the drought, so destructive elsewhere, had never reached this favoured spot.
>
> It was Omio [sic] plain. By what accident, or rather by what freak of nature, came it there? A mighty belt of forest, for the most part destitute of verdure, and forming as uninviting a region as could well be found, closed it on every side for fifty miles; but there, isolated in the midst of a wilderness of desolation, lay this beautiful place, so fair, so smiling.[16]

Omeo's historian wrote,

> When the first white men came to the Omeo Plains all the best country was treeless. On the lower foothills which bordered the plains, there were large gum trees, standing singly, and odd clumps of sally wood . . . northward and almost to the tablelands, about six miles away, the gum timber was dense, and known as The Forest,[17]

and Thomas Walker thought the valley 'the prettiest piece of country I have seen since leaving the Murrimbidgee [sic], very thinly timbered, indeed in many parts clear, with here and there interspersed a few trees or a clump or a belt, the soil sound and good . . . the sward close . . . the whole being intersected by lagoons: it is quite like a gentleman's park in England'.[18]

Other Gippsland travellers saw chains of plains,[19] and in 1834 John Lhotsky confessed of similar chains between Gundaroo and Michelago (NSW):

> It is . . . a most remarkable, but not very easily explicable fact, that they are altogether destitute of trees of any kind, and only on the secondary hills or banks, which divide their plications, are some gum-trees thinly scattered, whereas large timber covers the main ranges . . . it is difficult to understand, how it is, that there is not even a vestige of incipient sylvification in the plains and downs themselves.[20]

Charles von Hugel, a botanist, stated, 'A plain like the Goulburn Plain is certainly an interesting phenomenon . . . as in the case of all the plains mentioned earlier, the soil is good—why is it that no trees occur on it, seeing that they grow splendidly

when planted? There is no easy answer to this question.'[21] In the same district Govett observed in 1832,

> The park-like forests of this County are relieved in many parts by plains, or portions of ground altogether destitute of timber. These plains vary in extent and form, some are hilly and undulating, while others appear a mere flat, and the generality of them possess a good soil. It appears as if the seed of the tree has never been, as it were, scattered upon them, for it cannot be disputed, that the trees which surround these plains would also vegetate upon them.[22]

A century later TM Perry investigated these plains. He could find no soil distinctive to them or to the woodland around. Each could be 'on identical soils'. He could not say why.[23] This was land where trees grow now.

Soil can regulate which plants grow where, yet Sturt saw trees vanish without any soil change, and puzzled at 'the sudden manner in which several species are lost at one point, to re-appear at another more distant, without any visible cause for the break'.[24] In the Dorrigo (NSW) brush in 1894 Joseph Maiden reported 'plains which simply consist of grass-land, entirely destitute of trees, or dotted about as in a gentleman's park. Usually the edge of the scrub and of the plain are as sharply defined as it is possible for them to be, as though a Brobdingnagian with mighty sickle, had there finished his reaping.'[25] G Marks investigated in 1911, and found 'open flats that never grew timber in their virgin state, yet they have similar soils to the timber areas that surrounded them, and apparently are identical in their chemical composition and mechanical nature'.[26] By then Leichhardt had discounted soils. At Calvert's Plains on the Dawson (Qld) he noted,

> It was interesting to observe how strictly the scrub kept to the sandstone and to the stiff loam lying upon it, whilst the mild black whinstone [basalt] soil was without trees, but covered with luxuriant herbs and grasses; and this fact struck me as remarkable, because, during my travels in the Bunya country of Moreton Bay, I found it to be exactly the reverse: the sandstone spurs of the range being there covered with an open well grassed forest, whilst a dense vine brush extended over the basaltic rock.

A month later he added, 'It is remarkable that that part of the range which is composed of basalt, is a fine open forest, whereas the basaltic hills of the large valley are covered with a dense scrub.'[27] That stumped him.

In the South Australian mallee in 1839, stumps bewildered Eyre:

> In some parts of the large plains we had crossed in the morning, I had observed traces of the remains of timber, of a larger growth than any now found in the same vicinity, and even in places where none at present exists. Can these plains of such very great extent, and now so open and exposed, have been once clothed with timber? and if so, by what cause, or process, have they been so completely denuded, as not to leave a single tree within a range of many miles? In my various wanderings in Australia, I have frequently met with very similar appearances; and somewhat analogous to these, are the singular little grassy openings, or plains, which are constantly met with in the midst of the densest Eucalyptus scrub . . . Forcing his way through dense, and apparently interminable scrub . . . the traveller suddenly emerges into an open plain, sprinkled over with a fine silky grass, varying from a few acres to many thousands in extent, but surrounded on all sides by the dreary scrub he has left. In these plains I have constantly traced the remains of decayed scrub—generally of a larger growth than that surrounding them—and occasionally appearing to have grown very densely together . . . The plains found interspersed among the dense scrubs may probably have been occasioned by fires, purposely or accidentally lighted by the natives in their wanderings, but I do not think the same explanation would apply to those richer plains where the timber has been of a large growth and the trees in all probability at some distance apart—here fires might burn down a few trees, but would not totally annihilate them over a whole district, extending for many miles in every direction.[28]

Attempts today to explain these puzzles can be unsatisfying. Researchers write of soil boundaries, cracking clay, rain shadows, nutrient supply, frost and aspect. No doubt each applies somewhere, but none where trees grow now but not then. Other explanations—bushfire, salination, overgrazing—may sometimes be cogent, but rarely for sources so soon after newcomers came.

Even particular trees might be curiously placed. Surprisingly often early Europeans crossed rivers and creeks via 'fallen' trees. Records mention twelve in Tasmania, at least seven in Western Australia, four in Victoria, three in New South Wales and one in Queensland, including over rivers like the Murray, Lachlan, Goulburn, Gordon and Tasmania's Emu, 'the widest and deepest river we had seen since leaving Circular

Head'.[29] It is hard to imagine a tree spanning those rivers now, or even a decent creek, yet in southwest Australia JC Bussell crossed several in one journey. Mary Gilmore said Aborigines dropped trees deliberately, by undermining their roots: she saw it done to cross Wollundry Lagoon at Wagga (NSW).[30]

People may also have made straight tree lanes. Some led to initiation grounds. A ground near Mildura (Vic) was approached by a straight line of at least eight marked gums; another on the Macquarie by a 'long straight avenue of trees, extended for about a mile, and these were carved on each side, with various devices'.[31] On the Murray in 1844, a 'natural avenue of gum-trees extends . . . two rows of noble trees growing at almost equal distances; the open grassy space between each row being at least 100 feet in width: so regular are the intervals between them, that it is almost difficult, at first sight, to persuade one's self that they were not planted by the hand of man'.[32] In Tasmania Henry Hellyer 'ascended the most magnificent grass hill I have seen in this country, consisting of several level terraces, as if laid out by art, and crowned with a straight row of stately peppermint trees, beyond which there was not a tree for four miles along the grassy hills'.[33]

Other curious plant stories have emerged since 1788: fire tolerant and fire sensitive plants side by side, plants needing one fire regime beside plants needing another, newcomers driving a carriage or painting a view through country where trees make this impossible now. Clear of settlement, there may be more trees today than in 1788.

Bill Jackson calculated that 47 per cent of Tasmania should have been rainforest in 1788, but wasn't. It was eucalypt forest, scrub, heath or grass, sometimes with burnt rainforest logs beneath. Jackson instanced sites where other plants had displaced rainforest thousands of years ago, and remained ever since. He noted that Tasmania had much less rainforest than New Zealand's south island, a comparable climate, and concluded that deliberate burning best explained the difference.[34] 'The present distribution of floristic units in western Tasmania', Rhys Jones agreed, 'can be explained only in terms of both a high fire regime over a long period during the past, and the lifting of that pressure during the past hundred and fifty years.'[35]

One aspect puzzled Jackson. 'The boundaries between vegetation types at present seem remarkably stable . . . ', he wrote, so it was 'difficult to understand how such extensive areas of disclimax [unnatural] vegetation could arise in even [34,000 years—a 1999 estimate of how long people had been in Tasmania].'[36] If other plant communities had moved so little since they displaced rainforest, Jackson was saying, how did they displace so much, even in so long? He was thinking of random fire. Community boundaries would indeed be unstable if Tasmanians had burnt randomly, but they did

not. They burnt with purpose, as the stable boundaries show. In northern Tasmania RC Ellis found that on the same soil the 'boundaries between rainforest, eucalypt forest and grassland were sharp and relatively stable'. Tasmanians selectively burnt rainforest back, then patrolled its edges.[37]

Some boundaries were moved. In Tasmania much rainforest has a curious feature: giant eucalypts overtop it. Hellyer described this south of Emu Bay:

> This is a horrid place [to] be in, neither Sun nor Moon to be seen, no part of the sky, being completely darkened by dripping Evergreens consisting of Myrtle, Sassafras, Ferntrees, immensely tall White Gum and Stringy-bark trees from 200 to 300 feet high and heaps of those which have fallen lying rotting one over the other from 10 to 20 feet high.[38]

Edward Curr, father of Victoria's Edward Curr, echoed Hellyer:

> enormous Stringy Bark Trees many of them three hundred feet high and thirty feet in circumference near the roots exclude the rays of the Sun and in the gloom which their shade creates those trees flourish which affect darkness and humidity . . . sassafras, dogwood, pepper trees, musk trees . . . in some situations blackwood of the best quality . . . fungi, mosses, lichens, ferns.[39]

Others noted the phenomenon,[40] and it can still be seen (pictures 46–8). In Tasmania's Mt Field National Park, opened in 1916 on land reportedly never logged, gullies and lower slopes support giant Swamp Gums, many scarred by fire. Under them is rainforest like Myrtle, Sassafras and Tree Fern, but no eucalypts. This is so too elsewhere in Tasmania: in the Styx, the Tarkine and the Blue Tier; and along the mainland's east coast, for example in the Bunya Mountains (Qld) (picture 40) and the McPherson Range (Qld/NSW). On Cape York Christie Palmerston saw many examples: in the upper Daintree he cut

> through one patch of jungle . . . which has splendid green grass all along the top, but the sides are covered with dense jungle. Kept to this spur to the eastward for about four miles, and cut my road through four patches of dense jungle . . . The timber on the open ridges was principally gum, oak, bloodwood, and honeysuckle, and there was splendid soil on all the mountains.[41]

All this is climax (natural) rainforest country. Eucalypt seedlings can't grow in rainforest: there is no light. How did those giant eucalypts get there? Clearly, when they were young there was no rainforest. Without fire rainforest has returned, so fire once kept it back. No stray marauder can do that. It needs determined burning when conditions are right, and in rainforest that is not often. Eucalypts topping rainforest indicate land people once went to great trouble, working against the country, to clear and keep clear.[42] Ancient eucalypts also stand above dense dry scrub with no young eucalypts. Such places have unnatural fire histories.[43]

Other tree or scrub distributions also signal this. Kurrajongs like open land, which they got in 1788 because the tap root survives fire and the tree re-sprouts from base buds, but on reserves today, fire regenerators like wattle and casuarina are choking the ancient stands, and no seedlings survive. In semi-arid country two fires every five years are needed to clear Hopbush, but it became a major pasture menace after 1788.[44] Fire made Tasmania's dry Buttongrass plains, yet beside them may stand pines which fire kills, some 2000 years old.[45] In Arnhem Land Blue Cypress needs mild fires every 2–8 years. Fires more frequent or intense kill or damage the stand; fires less frequent let it choke with saplings. Lightning or casual burning could neither commence nor maintain such a fire regime, yet the pine stood in vast tracts in 1788, and stopping 1788 fire caused a 'widespread crash' in its population.[46]

Even eucalypts, fire's torchbearers, show that unnatural fire once shaped the land. In 1788 no-one lived on Kangaroo Island (SA) so it was dense forest, but adjacent mainland was open woodland. Without fire Tuart forest develops a very dense undergrowth, but early Europeans reported it 'with plenty of grass'.[47] Spotted Gums near Batemans Bay (NSW) seem pristine, but are not half the size of scattered stumps among them. A century ago this was dairy country, and in 1788 open forest. Without fire it would be rainforest. In north Queensland what looked like primal rainforest was a dairy farm only 40 years before.[48] Other eucalypt forests have either a few giants scattered amid even-aged younger generations showing that once-open forest has thickened, or no old trees or stumps at all, indicating former grassland. Comparing forests in 1788, 1900, and 2000 would show a tree kaleidoscope, never the same.

Bushfire rarely clears eucalypts: they regenerate from lignotubers or beards—branches sprouting from epicormic (sub-bark) buds under stress from drought, fire, poison or axe. Only repeated fire clears them, cool (ch 6) and frequent in dry country, hot and infrequent in wet.[49] To convert eucalypts to grass people had to let fuel build up so fires could run, but burn often enough to kill seedlings, and maintain this over many generations until the old trees died. Burning most eucalypts every 2–4 years would in

time make grassland, while burning a little less often would let some saplings survive and create open woodland. Both were common in 1788, some where trees and shrubs grow thickly now, others kept clear for so long that they have lost their seed stock and re-tree only by edge invasion, but re-tree they do.

Burning every 2–4 years promotes perennial grasslands. In 1788 these were common, which means they got with unbroken regularity the fires they needed. They also carried annuals, bulbs and tubers killed by hot fire, but needing ash to thrive, and cool fires every 2–3 years to open the perennial canopy. No random bushfire could strike that balance, or let such unlike partners flourish so widely. All have declined since 1788.[50] Spinifex country supports no food plants until it is burnt, when plants like Desert Raisin appear and fruit prolifically. Fruit production then drops annually until in about 5–8 years, depending on the rain, Spinifex has again smothered the plants.[51] Of twelve food plants in the Centre, five need fire, three tolerate it, and four are killed by it. All twelve flourished in 1788, so people managed them with different but adjacent fire regimes over many centuries. Peter Latz concluded that central Australians 'may have, quite literally, made the country what it is today by their use of fire'.[52] Many other plants need particular and distinct fire at the right time and with the right frequency and intensity (ch 3).

Most curious, these different fires made similar plant patterns across Australia. Crucial as burning was to help plants thrive, something more was going on. Dawson thought the country inland from Port Stephens

> truly beautiful: it was thinly studded with single trees, as if planted for ornament . . . It is impossible therefore to pass through such a country . . . without being perpetually reminded of a gentleman's park and grounds. Almost every variety of scenery presented itself. The banks of the river on the left of us alternated between steep rocky sides and low meadows: sometimes the river was fringed with patches of underwood (or brush, as it is called) . . . in Australia, the traveller's road generally lies through woods, which present a distant view of the country before him . . . The first idea is that of an inhabited and improved country, combined with the pleasurable associations of a civilized society.[53]

Trees planted as if for ornament, alternating wood and grass, a gentleman's park, an inhabited and improved country, a civilised land. Much of Australia was like this in 1788. After 'bush', a word from southern Africa, the most common word newcomers

used about Australia was 'park'. This is striking, for three reasons. First, 'park' was not a word Europeans elsewhere associated with nature in 1788. Until 'national park' was coined in the United States much later, a park was man-made. Second, 'park' did not mean a public park as today, for few existed in Europe in 1788. It meant parks of the gentry, tastefully arranged private estates financed by people comfortably untroubled by a need to subsist. Third, few today see parks in Australia's natural landscape. Most use another US word with the opposite meaning: 'wilderness', which they imagine is untouched forest, beyond the pale, inhospitable. Farming people think like that.[54]

Parks chequered Australia. In New South Wales, south of Parramatta in April 1790 John Hunter 'walked through a very pleasant tract of country, which, from the distance the trees grew from each other, and the gentle hills and dales, and rising slopes covered with grass, appeared like a vast park'.[55] At Bong Bong Lachlan Macquarie named Throsby Park for its 'very park-like appearance'.[56] On the lower Talbragar John Oxley remarked, 'Many hills and elevated flats were entirely clear of timber, and the whole had a very picturesque and park-like appearance', and south of Walcha he found 'the finest open country, or rather park, imaginable: the general quality of the soil excellent'.[57] HT Ebsworth stated, 'Brush Wood is seldom to be seen where the soil is good, the land is lightly timbered, resembling a Gentleman's park occasionally, but the traveller is soon obliged to lose this idea by finding no Mansion at the end of the scene: He journeys on, as it were, from Park to Park all day', and near Port Stephens, 'The hills are everywhere clothed with wood, with constant verdure beneath it: unaccompanied by any Brush or Underwood, so that one is often forcibly reminded of Gentlemen's pleasure grounds.'[58] On the Hastings SA Perry noted, 'Most of the country . . . resembled extensive parks, the ground being gently undulated—thinly timbered without underwood—the bottoms rich alluvial land, & the whole covered with grass.'[59] In 1829 JB Wilson observed, 'So much has been said of the scenery in New South Wales resembling noble English domains.'[60]

It was the same in the other colonies. George Haydon recalled southwest Victoria as 'Beautiful plains with nothing on them but a luxuriant herbage, gentle rises with scarcely a tree, and all that park-like country . . . just enough wooded without inconveniencing the settler, whilst there is no lack of good timber for every purpose he may require.'[61] Near Mt Alexander the bush

> was typical of a great portion of the pastoral lands of Victoria. It consisted of undulating open forest-land, which has often been compared, without exaggeration, to the ordinary park-scenery of an English domain; the

> only difference which strikes the eye being the dead half-burnt trees lying about. To bring it home to the comprehension of a Londoner, these open forest-lands have very much the appearance of Hyde Park and Kensington Gardens, presenting natural open glades like the east end of the former.[62]

In Tasmania John Hudspeth praised 'the beautiful and rich valley of Jericho . . . more like a gentleman's park in England, laid out with taste, than land in its natural state',[63] and George Frankland thought the Hampshire Hills afforded 'an instance of the beautiful natural decoration of some of our scenery, for that park like ground is entirely in a state of Nature'.[64] In Queensland Mitchell called the scenery near St George 'park-like and most inviting',[65] and JE Dalrymple admired the Valley of Lagoons 'with its rich grass, lofty gum-trees, and lotus-covered lagoons, till the hills on either side sweeping backwards, the beautiful open forest-ridges opened out in scattered timber, like an English park'.[66]

In South Australia JF Bennett described the Mt Barker district as 'fine undulating country . . . being partly wooded, partly clear . . . more the appearance of an immense park than anything that one would naturally expect to find in the wilds of an uncultivated land'.[67] John Morphett wrote, 'The country from Cape Jervis upwards is very picturesque and generally well timbered, but in the disposition of the trees more like an English park than what we could have imagined to be the character of untrodden wilds.'[68] WH Leigh thought the same district 'a wild but beautiful park, which reminded one of the domain of an English noble',[69] and the overlander Alexander Buchanan considered the west side of the Murray below the Big Bend 'really most beautiful, like a gentleman's park all the way. Fine plains and thinly studded with trees. Grass up to the horses' knees; indeed it was like riding through a ryegrass field.'[70]

East of Perth George Moore stated, 'To the distant eye the country has the appearance of being well wooded, but I should not say it was thickly timbered. In some places there are open plains that resemble well ordered parks.'[71] His neighbour William Shaw estimated, 'the trees [do] not exceed more than eight trees to an acre and [are] laid out by nature in the most park-like scenery'.[72] Near Bunbury John Barrow thought 'the whole country wears the appearance of an English park'.[73] In Arnhem Land near the end of a tough journey, Leichhardt could still note that plains 'which had been burnt some time ago, were now covered with delightful verdure. This, with the dark green belt of trees which marked the meanderings of several creeks, gave to this beautiful country the aspect of a large park.'[74]

Parks even dotted arid land. West of the Darling Daniel Brock wrote of Lake

Victoria, 'the banks present nothing but park-like scenery—groups of gum trees most tastefully disposed',[75] and Sturt found 'a beautiful park-like plain covered with grass, having groups of ornamental trees scattered over it . . . I never saw a more beautiful spot. It was, however, limited in extent, being not more than eight miles in circumference . . . encircled by a line of gum-trees.'[76] On Eyre Peninsula Eyre 'passed through a very pretty grassy and park-like country'.[77] North of Glen Helen in the Centre Egerton Warburton observed, 'The country today has been beautiful, with park-like scenery and splendid grass',[78] and in the west Petermanns Ernest Giles noted 'a fine piece of open grassy country—a very park-like piece of scenery . . . natives were burning the country'.[79] In even bleaker country north of Lake Eyre, JW Lewis met 'a plain thickly grassed and studded with fine green gum trees, most park-like in appearance'.[80] [81]

Newcomers were often less flattering in describing Australia (harsh, barren, impenetrable, miserable, useless, sterile, waste), but parks were common and widely distributed. It might seem a small jump to think them man-made as in Europe. In fact the leap was so vast that almost no-one made it. Almost all thought no land in Australia private, and parks natural. To think otherwise required them to see Aborigines as gentry, not shiftless wanderers. That seemed preposterous.

The parks have gone. Overgrazing had a transforming impact. Parks were exactly what European land hunters wanted, and how heavily they overgrazed them is notorious.[82] The land cannot have been so heavily grazed in 1788. As well, 1788's controlled fire stopped when Europeans arrived. Today's bushfires devastate, and decimate species which flourished during millennia of Aboriginal burning. In heath near Kiama (NSW), ground parrots needed fire every 3–7 years to balance food and shelter. In 1788 they got this, but after 1788 they got infrequent hot fires, and by 1968 had died out. In the north the same may have happened to the paradise parrot. Since 1788 at least 23 mammal species have become extinct, and since about 1940 almost a third of world mammal extinctions have been in Australia. Recognising how extensive such changes have been, to plants, animals and the land, is crucial to understanding how constant and purposeful 1788 management was.[83]