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Plain Facts: Tasmania under Aboriginal Management

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ABSTRACT *Almost all researchers now accept that Australia's Aborigines were managing their country with the broad-scale use of fire when Europeans arrived. In respect to Tasmania, this article goes further, arguing that fire was not merely broad-scale, but applied variably and precisely, to make, then connect, a complex range of useful ecosystems. The article also argues that Aboriginal land management must be seen in cultural as well as ecological terms.*

KEY WORDS: Tasmania, Aborigines, environment, land management at contact

When Europeans arrived, the Aborigines of Tasmania were managing their land by using fire to arrange its vegetation. They did so to ensure that all species flourished as the Law required, to make resources abundant, convenient and predictable, and to make the land an integrated domain.

Although such acute early observers as Thomas Mitchell and Ludwig Leichhardt knew that Aborigines fired country to attract game,[1] not until the 1960s did researchers begin to sense system and purpose in Aboriginal burning. From 1965, Bill Jackson argued that for thousands of years Tasmanians altered vegetation by deliberate and repeated firing.[2] In 1968, Duncan Merrilees pointed to faunal changes in Australia which he thought could only have been caused by people.[3] In 1968 and 1969, Rhys Jones showed that throughout Australia 'fire-stick farming' made a more complex vegetation mosaic than climate alone could dictate.[4] In 1975, Sylvia Hallam provided extensive evidence of purposeful firing in southwest Western Australia.[5] Debate persists on whether Aborigines intended the results of such widespread, purposeful and effective firing,[6] but enough evidence exists to resolve this debate, and to take it further.

The broad impact of Aboriginal burning on Tasmania's plants is sketched by the answers to two questions. When Europeans arrived:

1) What would the land have looked like without human intervention?
2) What did it look like?

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Jackson concluded that deliberate burning best explains why there was much less rainforest in Tasmania when Europeans arrived than on New Zealand's South Island, a comparable climate but generally without people.[7] As its title hints, 'Plain Facts' begins by echoing Jackson, arguing that but for Tasmanian fire, plains, heath and open forest would have been much less common than they were when Europeans arrived, and rainforest more common. Tasmanians burnt rainforest to diversify and arrange their resources.

This is evident in the landscape today. Eucalypts, for example, respond readily to light and to fire, so their shape and spacing can reveal disclimax plant communities the Tasmanians made.

Figure 1. Gums on Basin Hill, 'Ellesmere', near Jericho. *Source*: Gums, Fred Duncan, Forest Practices Board, Hobart, 1985–1986. A similar photo is the front cover of *Tasforests*, 2(2), December 1990.

The big white gum (*E. viminalis*) is over 200 years old, possibly over 300.[8] Its branches spread, unlike the surrounding saplings which grow straight up, racing for light. Note where those fast-growing youngsters caught their parent, which first lost its lowest branches to the shade, then bent its next branches up to compete for light. This tree began in the open, then adapted to woodland.

Why was the country open when the tree was young? If trees grow there now, why not then? Soil, salt, climate or aspect cannot explain the change. Fire can explain it, but not any fire, not a bushfire. Most eucalypts survive even intense bushfires, as they

prove each summer. Had bushfires cleared this land the big gum would show fire damage, there would be more big gums, and we would have to explain why bushfires stopped, to let the saplings grow. Jackson estimated that only 0.6% of Tasmanian fires are bushfires.[9] At Jericho the percentage is probably higher, but the fires which made this landscape were frequent and of low intensity, protecting the big gum and suppressing generations of its seedlings.

The saplings are 20th century, so the land remained open for some time after the Tasmanians were removed. Either settlers also burned until they built fences, or initially the grass was too dense to give seedlings headway, or, probably, first one then the other. But stock like to camp under trees, smothering the grass, and at last letting saplings take hold.[10] They shaded the grass. It is white grass (*Poa labillardierei*). It needs open country. Its presence among trees shows that once the country was open. Now it struggles there, whereas on the open land beyond it flourishes.

Figure 2. John Glover, 'Mills' Plains', 1836. *Source*: John Glover, 'Mills' Plains, Ben Lomond, Ben Loder and Ben Nevis in the Distance', 1836, AG3, Tasmanian Museum and Art Gallery, Hobart.

The view is east from above Glover's farm near Deddington in northeast Tasmania. Ben Lomond at right is enlarged and the country is compressed horizontally, but as usual in early colonial art the scene is broadly accurate.

There is debate about what trees Glover depicted[11] but he stated, "the taller Trees are Gums, the lesser Whattle".[12] Spreading white gums dominate the foreground and dot the plains and hills. Glover noted of them, "this gives a good idea of the thickly wooded part of the Country. It is possible almost every where, to drive a Carriage as readily as in a Gentleman's Park in England".[13] Edward Lord did that. He came to Hobart with David Collins in 1804, and declared on oath in 1812, "the forest land . . . is very open. To give an idea of the open country, the first intercourse we had by land from Hobart's Town to Launceston, a loaded cart was drawn without the necessity of felling a tree . . . In general a very rich pasturage; it is a fine, beautiful picturesque country as can be".[14] Tasmanian burning did that: Glover's hills are dense forest now.[15]

Glover shows Tasmanians. They were not there in 1836, for in 1828–1830 they were shot or rounded up by bounty hunters like Glover's neighbour John Batman.[16] Yet Glover depicts not only their presence, but their absence. His foreground shows young wattles and casuarinas, trees which regenerate quickly after fire. They are young because Tasmanians burnt the old; they are there because Tasmanians were stopped from burning. How long ago were they stopped? Glover's young eucalypts, generating just as near Jericho, measure the end of Tasmanian dominion. They are the first generation for decades not to get burnt. Soon they too will shoot straight up, battling for light. Today this land carries wattles, casuarinas and eucalypts, including a few giants with coolamon scars. In grazing country naturally they are spaced, but are still too dense to allow the view Glover had.

Tasmanians went beyond making plains and open forests. They associated them. That was a significant but natural progression from merely burning country. What sort of plain they associated with what sort of forest depended on which plants and animals each association was for. On coasts, heath and grass might alternate for miles. On hills, grass pockets lay in open forest; in high country in rainforest.[17] These differences reflected the good sense of working with the land, and of providing accessible habitats for all. Tasmanians burnt to associate food and shelter. Many animals and birds prefer to feed in grassland, shelter in open forest, and stay close to an edge between both, so people made edges plentiful by alternating belts of forest and plain.

Figure 3. Joseph Lycett, 'View from Near the Top of Constitution Hill, Van Diemen's Land', c. 1821. *Source:* Joseph Lycett, "View from Near the Top of Constitution Hill, Van Diemen's Land", c. 1821, from his *Views of Australia*, London 1825, PIC U658 NK380/40, National Library of Australia (NLA).

The view is south towards Bagdad over forest-plain belts. Belts sheltered edge animals and concealed hunters, and were common in Tasmania. Not far southwest of Mills Plains Lachlan Macquarie reported on 6 December 1811:

> enter Maclaine Plains and travel through them for 2 miles to a rising ground covered with wood, which separate them from the next plains . . . which are beautifully interspersed with trees . . . travelled for 7 miles across Macquarie Plains . . . very extensive and beautifully interspersed with trees and . . . in most places a good soil.[18]

In the northwest, Henry Hellyer thought the Surrey Hills "resemble English enclosures in many respects, being bounded by brooks between each, with belts of beautiful shrubs in every vale . . . the Hampshire Hills . . . appear even more park like than the Surrey Hills, and are handsomely clumped with trees".[19]

Belts were made most easily by clearing successive plains in forests. In forest above the Ouse River west of the Great Lake on 28 March 1825, J.H. Wedge:

> found an open gladeway about 10 Chains in Width & a Mile in length, which took me to the Edge of the Hills from whence I looked down . . . There appeared to be many spots of land free from timber and of considerable extent . . . I went over the Hills to the Southward—I found an open space on the top of the Hill . . . from this I beheld an extensive Valley . . . there appeared to be open spaces in it.[20]

Tasmanians also made edges by leaving clumps (copses) on plains. Northwest of Campbell Town, in about 1833, W.H. Breton observed that the:

> contrast is very striking when, after riding through the 'bush', the traveller comes unexpectedly upon a plain, sprinkled only here and there with small clusters of trees, and on crossing it again finds himself in an extensive forest . . . the transition is not at all gradual, as a person may ride many miles without meeting a single open spot, while on the plains it often occurs that scarcely a tree is visible.[21]

George Robinson noted copses and their animals in many parts of Tasmania. About ten miles west of Mt William in the northeast he:

> crossed a large plain with excellent grass, about a thousand acres. The country . . . is very picturesque, grassy plains interspersed with Copse . . . Kangaroo is very plentiful. Passed over a large tract of ground where the bush had been burnt by the natives. This is a delightful country to walk in.[22]

West of Derby he:

> came to a large plain of tolerable good feed; it was of great extent and abounded with kangaroo. I had seen no place like it on this side of the island, and the clumps of trees of various sorts gave it a delightful park-like appearance. I named it kangaroo park. This country had been well burnt off.[23]

Clumps were maintained, not merely left after cool burns, although they may have begun that way. On Bruny Island, Robinson:

> traversed a vast extent of clear country interspersed with clumps or copses intended as a cover for the kangaroo, the whole range for miles forming a beautiful picturesque scenery. This has been done by the natives: when burning the underwood they have beat out the fire in order to form these clumps.[24]

People also wedged forest into plain so that no matter how the wind lay they could approach prey undetected.

Figure 4. Joseph Lycett, "Aborigines Using Fire to Hunt Kangaroos", c. 1821, from his *Drawings of the Natives and Scenery of Van Diemens Land*, London 1830, PIC R5689, NLA. Lycett says this scene is Tasmanian. Tom Gunn points out that Tasmanians did not use woomeras, shown here. Lycett never visited Tasmania, and most of his scenes are of around Newcastle, NSW, but several of his Tasmanian views are on Macquarie's 1821 route. Perhaps he copied this and the Constitution Hill view from drawings by George Evans or James Taylor, who accompanied Macquarie—after all he was a forger. See J. Hoorn, 'Joseph Lycett: The Pastoral Landscape in Early Colonial Australia', *Art Bulletin of Vic*, 26, 1986, pp. 4–14, esp. p. 6; J. Hoorn, *The Lycett Album*, Canberra 1990, pp. 1–3, 19.

Here dense forest rises from low ground to separate grassy hills. A sharp edge divides trees from grass. Fires block kangaroos from the forest and drive them to the spears. Yet the hunters are protecting the forest: they have fired its lee edge so that the wind takes the flames into the grass. When the wind lay the other way they would burn the opposite edge: that must always have been so, otherwise those sharp edges would be frayed by fire. This landscape is shaped to make game accessible. A skilful burning regime, and not that on Mill's Plains, has kept the forest dense and the grass open.

It is unlikely that fires were lit just to hunt. That would tax a delicate artefact. More probably, when season and wind decreed a time to burn, people hunted as well. If they spread enough edges around their country they could usually burn and hunt somewhere, and if they planned burning cycles (as they did on the mainland) they could shepherd game from one plain to the next.

Tasmanians (and mainlanders) used plains by patch-burning them, making mosaics of fresh grass to concentrate feed, and trees or old grass to shelter game and hunters. On Bruny Island, Robinson reported:

> travelling through an extensive swamp covered with lofty shrubs. Passages about two feet wide are formed in a serpentine direction and at short distances are open clear spaces, supposed to have been burnt out by the natives so that they might be better able to pursue the kangaroo with the dogs.[25]

Where patches were burnt determined where feed and thus game was: patches made hunting predictable. Predictability is commonly the critical advantage farmers claim over hunters, yet Tasmanian hunters went expecting to find game—more like gathering. With patches spaced over many miles, their resources were more drought, flood and fire evading, more certain, than those of farmers. Perhaps this is why farmers trade and store food whereas except in harsh parts of Australia Aborigines did not.

Not all patches were kept small for easy hunting. Large areas might be burnt to 'clean up' a plain, to encourage or harvest fire-dependent plants, or to suit animals such as emu which prefer big plains and are cautious of edges. And fire had many other management purposes: for example, making tracks, protecting swamp margins or cultural sites, and maintaining heath. How land was burnt was critical; what was not burnt mattered as much as what was.

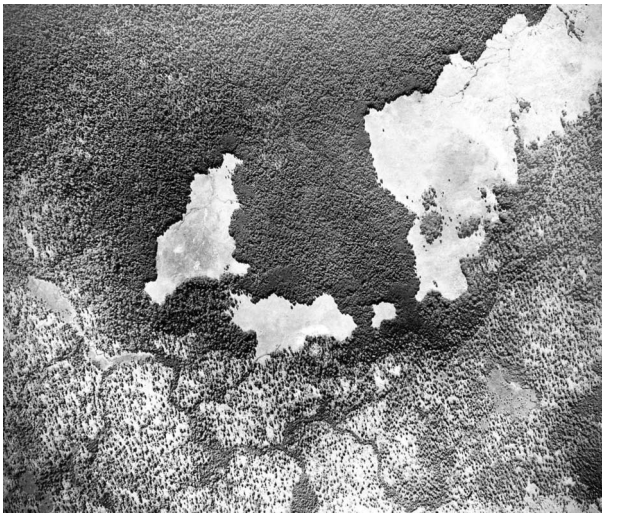

Figure 5. Goderich (top right) and Gatcomb (bottom left) Plains north of the Wandle River North-northeast of Fingerport near Guildford, 12 April 1949. *Source*: Goderich and Gatcomb Plains, 12 April 1949, Valentines Run 6/22139, and see map 3841 Guildford 1:25 000. 1984 photo: 1014-063 M486 Run 25. Both c/- Bill Tewson, Forestry Tasmania, Hobart.

From the earliest days this land was part of the Van Diemen's Land Company's 150 000 acre (61 000 ha) Surrey Hills block. The Company used it little, and in 1949 was still preventing others using it. Possibly wallaby snarers fired the plains along Aboriginal lines,[26] and bushfires may have burnt the open forest, but this landscape changes slowly,[27] and would be easily maintained once made. A November 1984 aerial photo shows the smallest patch filled by rainforest, the Goderich copses a fraction larger, and rainforest incursion along some edges. In 2002, rainforest was invading edges where seedlings could shelter under regenerating heath.

Rainforest (the dark areas) should dominate everywhere, but the landscape is diverse. The plains support a beautiful variety of grasses, lilies, everlastings, shrubs, heaths, herbs and mosses.[28] Open eucalypt forest fringes the Wandle River, with grass patches on and off the flats. Gatcomb's south edge is a ridge rich in snakes, which carries small boggy creeks alive with frogs down to a swamp at the plain's northern tip. People used hot northerlies to drive fire south from the swamp,[29] the fire-front gradually expanding; then over the ridge they burnt open forest, mostly stringybark (*E. delegatensis*). They protected the river, which they called *Lare.re.lar*, meaning platypus. On 12 June 1834, George Robinson found platypus there,[30] so the banks were not eroding, hence not often exposed to the low intensity fires which cleared the ridge scrub. Here Tasmanians conveniently associated the resources of rainforest, open forest, plain, swamp, river and ridge.

This is but one association-type around the upland plains of the northwest. The largest exceed 1300 acres (500ha), so clearly had purposes different from Gatcomb, perhaps like Goderich. Like Gatcomb the smallest suggest how patches and thus game could be rotated. From Gatcomb kangaroos would cross the ridge to open forest and new patches; wallabies would flee into the brush and the next fresh-burnt edge; wombats and possums would stay put. People could always locate them.

In 1827, Henry Hellyer followed an Aboriginal track across this country[31] and noted patches:

> The chase has a cultivated and diversified appearance . . . from its having been lately burnt in several extensive tracts, looking fresh and green in those places, and in others so completely covered with fields of blooming heath that it resembled vast fields of clover divided by shrubs.[32]

He suspected their purpose:

> It is possible that the natives by burning only one set of plains are enabled to keep the kangaroos more concentrated for their use, and I can in no way account for their burning only in this place, unless it is to serve them as a hunting place.[33]

And he saw the result of skilful rotation: "The kangaroo stood gazing at us like fawns, and in some instances came bounding towards us".[34]

George Robinson travelled extensively under Tasmanian direction. A European alone among local people can learn a lot. Seemingly Robinson knew that Tasmanians shaped the land variously to suit different animals. By the Ringarooma River above Gladstone, he noted:

> Our course . . . led through some wooded country, the underwood of which had been burnt off by the natives, and across some extensive heathy plains . . . The country was peculiarly favourable for the boomer and forest kangaroo, consisting of heathy and sword grass plains and open forest . . . (The inland natives have their hunting grounds for the different species of game, i.e. boomer, forester, wallaby, kangaroo, wombat, porcupine &c, the same as the coast natives have for their fish, such as particular rocks for mutton fish, crawfish, oysters, mussles, chitons &c.).[35]

On Gads Hill in central Tasmania he remarked, "In mountainous country I live on badger, porcupine, rats, grubs and opossum; in clear country on kangaroo".[36]

Figure 6. Country East-northeast over Deadman's Bay, Southern Tasmania, c. 2001. Purrar Point is the right foreground, Prion Bay at right rear, Precipitous Bluff on the horizon. *Source*: Deadman's Bay, from *A Steve Parish Souvenir of Tasmania*, Brisbane c. 2001, p. 31.

Some doubt that Aborigines were living in the southwest when Europeans arrived. There are recent artefact scatters at Deadman's Bay and all along this coast, while fire-promoted buttongrass (*Gymnoschoenus sphaerocephalus*) covers more than 45% of the southwest,[37] reflecting persistent burning on a scale which lightning strikes cannot explain. Six kilometres west is Louisa Bay, where on 10 March 1773 Tobias Furneaux's crew saw food scraps.[38] Six years later, off De Witt's Isles on this coast, Bass and Flinders:

> could not account for the vestiges of fires that appeared upon the two inner large islands; the innermost in particular, which lay at some distance from the nearest point of the main, was burnt in patches upon different parts of it. It must have been effected either by lightning, or by the hand of man; but it was so much

> unlike the usual effects of the former, that, with all its difficulties, they chose to attribute it to the latter cause. A great smoke that arose at the back of one of the bights showed the main to be inhabited.[39]

Deadman's Bay is land on that main. It shows edge associations of water, plain, patch and forest.[40] Near the coast is Smithton Peppermint (*E. nitida*), further inland is messmate (*E. obliqua*). Peppermints rim buttongrass sometimes on wet, infertile ground but sometimes not, and metres inside the tree edges is dead buttongrass, smothered by invading forest. Only fire stopped forest invading in the past.

Grass and eucalypt are there because generations of fire kept rainforest back. The dark ridges are surviving rainforest which "have probably not been burnt for several hundred years or more". Some show patches or patch regeneration. If fires like the big 1933–1934 fire recur, the rainforest will slow and eucalypts advance. If no fires occur rainforest will capture the eucalypts, creating a common and memorable Tasmanian landscape, dense rainforest topped by giant eucalypts, survivors of the days centuries ago when fire made the land theirs. A map today of those overtopping eucalypts would show many areas which are rainforest now and were not 400 years ago, and might reveal interesting vegetation patterns.[41]

The scene evokes say three- to six-year cool fires keeping plains clear, say five- to 20-year cool fires making open forest, and no fires permitting rainforest. Once established, with skilled local care the landscape would have been easy to maintain. The scene is typical of the south and southwest coasts. Even in country we call wilderness, the managing hand of the Aborigines was there.

Figure 7. Wineglass Bay, from North to South, c. 2001. *Source*: Wineglass Bay, see Figure 6, p. 14. Figures 6 and 7 c/- of Steve Parish and Kate Lovett, copyright Steve Parish Publishing Pty Ltd, reproduced with permission.

On the isthmus is a sharp edge between trees and grass or heath. This has been described as a boundary between wetland and tall open forest,[42] which is so towards the south, but it then rises to a fine wallaby trap there, and in the centre it crosses a hillock. The same soil straddles the edge. The trees are dominated by Tasmanian blue gum (*E. globulus*), including many dating from European times. In other words trees have generated in the forest but not outside it. As elsewhere this suggests that trees on ground recently cleared, by axe or fire for example, generate from seed stock, but in areas long cleared, possibly for centuries, no seed stock remains, and trees can only generate by edge or wind invasion.

What caused a pattern so unnatural? From 1824 whalers operated from the south end of the Bay, but only for about ten years, too briefly to clear generations of trees. The land was never farmed, though a small dam implies that it was grazed. In March 1980 fire burnt the isthmus and the high land south, but this scene is the same as Frank Hurley's February 1939 photo of it, except for a little more scrub then, behind the north end of the beach. J.W. Beattie's April 1909 photo is the same too, except that more scrub may have rimmed the beach south of the hillock—Beattie's colleague reported, "behind the beach at Wineglass Bay there is a slight rise covered with low shrubs".[43] Inland is forest with its scattered giants and at least one clearing, a buttongrass swamp with margins cleared back a few metres above high water, and two or three copses in grassland. Here Tasmanians associated grass, heath, open forest, hill, lagoon and sea—indeed two seas, for the more sheltered Hazards Beach at right has coarser sand, many more shells including huge oysters and mussels, and therefore more middens than Wineglass Beach.

Grass, wet and dry eucalypt forest, heath, swamp and dune all came under the care of the Tasmanians. Even rainforest was regulated: for example, on the Ringarooma River just west of Derby in the northeast, George Robinson described:

> a cheerless aspect, consisting of dense forest hills and gullies . . . the difficulty of forcing our way through, the scrambling over and under the immense quantity of fallen timber which covered the ground, the slipping and sliding off the timber . . . This forest is of great extent and consists of immense gum and stringy bark trees, some of which was forty and fifty feet round, and the intermediate space filled up with lesser trees of the dogwood, stinkwood, sassafras and musk, as also the stately ferntree.[44]

Rainforest was regenerating under eucalypts, yet four miles west wattle, tree fern and grass indicate rainforest clearing. Robinson:

> passed through an extensive forest of mimosa . . . Numerous trees, some of them fifteen feet round, were notched to their summit where the natives had gone up in quest of opossums; and numerous ferntrees had been broken down by the natives. After travelling in this route for about ten miles came to an open and extensive plain covered with grass and fern . . . This appeared the resort of the natives and my sable companions informed me that it was the native track. I was much gratified at meeting with this country after being immured in a forest for four days . . . kangaroo . . . were plentiful . . . The fern and trees had been fresh burnt. This evidently was the direct road for the natives to the east bank of the Tamar.[45]

In sum, Tasmanians burnt country or protected it from burning, used varying fire regimes to associate different plants, and distributed associations selectively. They planned so carefully for two main reasons:

1) The Law—a philosophy sanctioned by religion—required them to ensure the abundance or survival of every form of life.
2) Planning made convenient and predictable the plant and animal resources of every habitat.

Universal principles obliged and local knowledge allowed people to manage their land.

In this Tasmanians and mainlanders were, extraordinarily, alike. Two groups separated for 10 000 years, a "degree of isolation . . . thought to be unparalleled in the known history of the world",[46] kept religiously to similar universal principles and local practices. Did the land impose that? That suggests very long-term environmental determinism, but also lessons for Australians today.

Did the system work? It depended on preferring to reduce rather than increase material wants, which may be why the Tasmanians gave up canoes and fish (if they did). But it met people's wants while saving them the ceaseless toil farmers experience. John Ross wrote of people near Lake Echo in 1823,

> [Their gait] was quite indicative of persons who had little to do, with their pleasure only to seek their freedom. Their air of independence was quite charming, and . . . I know of no race of people who have greater claims to that property.[47]

People walked even when they had food; land and totem, more than hunger, made Tasmanians semi-nomadic.

The system also tuned people's minds to their land. Since the whole land was managed, it follows that the whole was encompassed by the Tasmanian mind. There was no wilderness, no *terra nullius*, in that sense no nature, because all was as people made it or allowed it to be. There was possession in the most fundamental sense. Conversely, the land made the people truly Tasmanian, committed to all the intricate detail of their world. That was their achievement and their tragedy, for it left them unable to manage the entirely unexpected—the arrival of new people with utterly different values.

Notes

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13 Glover, p. 9, also p. 7.
14 House of Commons, *Report of Select Committee on Transportation*, 341/1812, appendix, p. 78.
15 Visit to site, 11 February 2002.
16 Campbell, A. H. (1987) *John Batman and the Aborigines*, pp. 25–63 (Melbourne: Kibble Books). Glover's c. 1834 sketches of his 'Mill's Plains' foreground show that for the painting he replaced stockmen and cattle with Aborigines. See for example, pictures an4621593 and an4620809, NLA.
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30 Plomley, p. 884.
31 Binks, C. J. (1989) *Explorers of Western Tasmania*, pp. 63–64 (Devonport: C.J. Binks). For a rainforest camp in this area, see Plomley, p. 884.
32 VDL Co Papers MM 71/5/20, 238 Henry Hellyer 7–23 November 1828, AO Tas.
33 Hellyer, 15 November 1828.
34 16 February 1827. Bischoff, p. 170 or Ellis, p. 30.
35 13 August 1831. Plomley, p. 398.
36 9 July 1834. Plomley, p. 898.

37 Brown, M. J. & Podger, F. (1982) On the apparent anomaly between observed and predicted percentages of vegetation types in South West Tasmania, *Aust. J. Ecol.*, 7, pp. 203–205.
38 Furneaux and Burney journals, in Thomas, pp. 44–45. See also Flanagan, R. (1985) *A Terrible Beauty. History of the Gordon River Country*, pp. 6–13 (Melbourne: Greenhouse). For Louisa Bay archaeological work, see Vanderwal, R. & Horton, D. (1984) Coastal Southwest Tasmania, *Terra Australis*, 9, pp. 6–13.
39 January 1799, in Collins, D. (1975) *An Account of the English Colony in NSW* [1798], vol. 2, p. 130 (Sydney: Reed).
40 I thank Sib Corbett, Jayne Balmer and Mike Pemberton, Dept PIWE Hobart, for detailed comments on this area, February/March 2002. Direct quotes are from Sib, whom I thank especially for her help. Mike argues that this landscape has natural causes. He points out, for example, that except on boundaries no rainforest remnants have been found under local buttongrass, so that in these parts rainforest was never the climax vegetation.
41 For this paragraph, Corbett, S., Marsden-Smedley, J. & Kirkpatrick, J. (2000) Fire management in Tasmania's Wilderness World Heritage Area: ecosystem restoration using indigenous-style fire regimes?, *Ecol. Management & Restoration*, 1, pp. 195–203.
42 PWS Tas (1995) *Freycinet National Park Management Plan*, p. 13 (Hobart: PWS Tasmania).
43 Ibid., pp. 24–26; Hurley PIC FH/1834, NLA; Tasmanian Field Naturalists' Club (1909) *Easter Camp-Out, 1909, to Wineglass Bay*, pp. 6,9 (Hobart: Tasmanian Field Naturalists' Club). For research on Wineglass Bay, I thank Margaret Harman, Tasmanian Library, SL Tas; NPWS Coles Bay and Jon Marsden-Smedley, NPWS Hobart; Joyce Dunbabin, Glamorgan Spring Bay Historical Society; Ian Thomas, Geography, Melbourne University.
44 4 July 1831. Plomley, p. 371.
45 7 July 1831. Plomley, p. 372. Gammage, B. (2006) Landscapes transformed, in: M Lake (Ed.) *Memory, Monuments and Memorials*, pp. 153–165, 270–273 (Melbourne: Melbourne University Press), argues that Tasmanians moved plains and forests across country, as these diary entries hint.
46 Thomas, p. 1.
47 Recollections of a Short Excursion to Lake Echo in March 1823, *Hobart Town Almanac & VDL Annual*, 1830, p. 180, in Jetson, T. (1987) The Roof of Tasmania—The History of the Central Plateau, University of Tasmania, History, MA, p. 33.