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WESTERN AUSTRALIA.



# R E P O R T

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## CLASSIFICATION OF COUNTRY

BETWEEN

### BLACKWOOD RIVER AND WILSON'S INLET,

BY

Mr. F. S. BROCKMAN,  
CHIEF INSPECTING SURVEYOR.

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*Report on Classification of Country between Blackwood River and Wilson's Inlet, by Mr. F. S. Brockman, Chief Inspecting Surveyor.*

SIR,

Acting on your instructions of March 7, 1904, I left Busselton on March 17, and proceeded by road to Jalbarragup, on the Lower Blackwood, and from March 19 to June 30 was engaged in examining the country bounded on the north by a nearly direct line between Nannup townsite, on the Blackwood, and Denmark, situate on the northern shore of Wilson's Inlet (this being about the southern edge of earlier classification); on the South by the sea coast, and on the east and west by Wilson's Inlet and the Blackwood River respectively. These boundaries include an area of about one and a-half million acres.

2. Over this I made rough magnetic traverses, a total length of about 900 miles. This I found sufficient to prepare maps showing the principal features and most important classes of country, with a fair approximation to accuracy; but, owing to the density of the forests and undergrowth covering much of the ground, and the occurrence of innumerable permanent streams, bogs, and swamps, it is impossible to obtain all the detail features of the country by a survey of this class.

3. It is, in fact, for these reasons a difficult country to get through, and this is doubtless why our previous knowledge of it was so meagre. As an instance of this, I may mention that one of the largest rivers of this portion of the coast (the Shannon) was not shown on our plans, except a small length of its upper course from Mr. Terry's classification, and we were not even aware that any considerable stream emptied into Brooke's Inlet.

4. For purposes of this report, I am dividing the area classified into three parts:—

No. 1. Including the area lying between the Blackwood and Donnelly Rivers, southward from the Vasse-Warren Road.

No. 2. Embracing the country between the Donnelly and Shannon Rivers.

No. 3. Being the portion of the area under review, extending eastward from the Shannon River.

THE BLACKWOOD-DONNELLY SECTION.

5. On Part 1.—The coastal fringe from the Blackwood to the Donnelly, for an average depth of about two miles, consists largely of undulating sandy loams, carrying, for the most part, good grasses and other winter herbage, eminently suitable for dairy purposes. This area is lightly timbered, but is in places covered with thickets of stinkwood, and for a considerable distance along the central part is covered with redgum, jarrah, yate, sheoak, and zamia palm; this area, in its natural state, being of inferior quality to the open lands.

6. Immediately to the north of the coastal grass country lies a nearly continuous chain of narrow swamp lands, along or parallel to the Scott River. This consists of very rich, peaty soils, suitable for the cultivation of root crops or green feed for stock. Much of this can be turned to account without any comprehensive scheme of drainage. (I may here state that I consider no general scheme of drainage to be practicable, for the reason that a large body of water would require to be moved a long distance, and the additional area made available for cultivation would be small, and out of all proportion to the cost of the drainage works.)

7. To the north of the swamp land there lies a sandy plain of width varying from one to seven miles, covered with short scrub, rushes, and swamp grass. Much of this is liable to flooding in the wet season, but for more than half the year is useful grazing country if kept burnt off. It also contains many small swamps, a small proportion of which have a sufficient depth of good soil to make them suitable for the cultivation of potatoes, etc. This, as a whole, may be considered a second-class country.

8. The area to the north of this, up to the northern limit of this classification, is generally of a poor character (the soils consisting of sand, cold clays, and gravels). It is covered with stunted jarrah, banksia, and short scrub. There are, however, some small patches of rich soils in occasional depressions in the contour, and along the little watercourses falling into the main rivers, and the whole of it has some value for grazing purposes as holding ground for store stock or change country from the coast grass land. There are also some small patches of good jarrah forest on the Blackwood River and Barlee Brook.

9. Both the Blackwood and Donnelly Rivers carry permanent streams of fresh water till reaching the sea level, the Blackwood being subject to tidal influence for many miles, while the mouth of the Donnelly becomes closed each summer by a broad bar of sand.

10. I consider that an ideal dairy farm in this area should consist of about one thousand acres of the first-class coast grass land, 50 of the swamp land adjoining, 2,000 acres of the second-class grazing land adjoining on the north, and 5,000 acres of pastoral lease on the scrub lands again adjoining on the north.

11. Among the most attractive features of this district, from a picturesque point, are Lakes Quitchip and Jasper, both of which are bodies of fresh water. They are for the most part fringed with rich peaty soils, and are overlooked from their southern sides by high, undulating country.

12. I am informed that traces of monazite have been found in Lake Jasper, and I have recently learnt that a large body of zirconia has been discovered on the Donnelly River, some twenty miles or more to the north. Since it appears, from the contour, that Lake Jasper is a portion of the original bed of the Donnelly, it may be that the bed of this lake is worth further prospecting.

13. Prior to gathering this information, I was much struck with the varied wash along the northern shore of the lake (evidently not derived from the neighbouring country), as were probably the early settlers at Augusta, to whom its name was presumably suggested by the coloured pebbles on the beach.

#### THE DONNELLY-SHANNON SECTION.

14. On part 2 the coastal fringe consists principally of soils similar to and extending to about the same width as the coast grass land on part 1, the only difference being the occurrence of some large sand patches, areas of sedimentary limestone, and frequently a much richer growth of grass, notably of this latter between the Gardiner River and Brooke's Inlet. Here, for miles, the country has a most attractive appearance, the coastal downs being sparsely timbered with large, shady peppermint trees, and the grass waving knee-high, with a growth like a well-cultivated hay field.

15. The swamp lands of this section are the finest I have seen in the State. They are much more irregular in their occurrence than those on part 1, but can generally be very simply drained (when drainage is necessary), for the reason that the falls from them to the channels that carry off the surplus waters are usually considerable.

16. Between the Donnelly and Gardiner Rivers, immediately behind the coast grass lands and swamps, lies an irregular patch of level sandy country, varying in width from two to ten miles, which, from one point immediately south from the Warren, pushes an irregular arm inland in a north-easterly direction for a distance of about 25 miles from the coast. This area, though more irregular in character than the plain on the No. 2 section, contains some good cedar flats, small swamps, and patches of good forest land, and may be classed generally as second class.

17. Behind this lies a great area of splendid undulating loamy soils, timbered with karri and red gum, with occasional stretches of jarrah forest along ironstone ridges. This extends inland fairly uniformly to the northern edge of this classification, having a mean width of about 15 miles, with a length of about 40 miles.

18. Between the Gardiner and Shannon Rivers this timbered area extends southerly to the coast downs, while northward the same class of country stretches in a broad belt along the Warren and Willgarrup Rivers, surrounding the settlement on the last-named river.

19. Within the limits of my classification, I estimate that this patch of fine soil contains about 300,000 acres, with about 100,000 acres in that portion of the area that lies within the earlier classification.

20. About one-half of this area should be classed as karri forest, the remainder being either wholly timbered with redgum or carrying a preponderance of that timber.

21. The karri and redgum timbers grow on precisely similar soil, their respective occurrence being apparently determined by aspect, karri growing on the southern slopes facing the weather, while redgum appears to prefer the most sheltered positions.

22. The soil of the whole of this area is a rich friable loam of great depth. I have frequently seen karri and redgum trees that had fallen to the ground without obstruction and had buried the whole length of the trunk 6ft. to 8ft. in the ground. Much of this forest is filled up with a dense undergrowth, reaching, when fully matured, to an altitude of about 30ft. This will burn after about 10 years' growth, and for several years after burning the ground is covered with a fine growth of natural grass.

23. So far, there is only one object lesson on the capability of the soil within the forest area I have classified. This is at the Warren House, owned by Mr. William Brockman. The cultivated soil here is of the general class of the forest land, and fruit and vegetables grow most luxuriantly. The orchard here is probably, for its age, the most prolific in the State.

24. At this point a rain gauge has been kept for many years, and the average rainfall has been found to exceed 50 inches. Since this point is near the centre of the forest area, this may be assumed as the average rainfall over the whole. Though the greater part of this fall occurs in the winter months, its total value is increased by the fact that a considerable portion of it is distributed over the drier months of the year, a fortnight seldom elapsing between serviceable showers.

25. It may here be pointed out that, though the rainfall is heavy, it is not excessive, for the reasons that the country is high and undulating, and the soils porous, while it provides the great advantage of an ample water supply in the form of permanent streams, providing innumerable points where irrigation during the drier months may be undertaken, if found of value.

26. Complete clearing in the forest lands will undoubtedly prove expensive, but by ringbarking, cutting down the scrub, and sowing English grasses, etc., this can surely be made a splendid dairying district; and, since the timber burns readily, the country will undoubtedly become cleared in time by decay of the roots and falling of the ringbarked trees, if treated as suggested, with the necessary fires to consume the timber after it has fallen. For the planting of orchards, for which the whole of this forest appears suitable, the initial cost of complete clearing should not be a serious drawback, since the exceptional yields which may be anticipated should soon repay the early expense.

27. Summary of the Lands.—To sum this section up roughly: In addition to the second-class lands, it contains (inclusive of the unselected areas along the Wilgarrup River) about 200,000 acres of rich upland, suitable for settlement; 200,000 acres of karri forest (carrying probably 6,000,000 loads of timber); 60,000 acres of coast grass land suitable for selection under first-class conditions, and about 3,000 acres of the richest swamp lands in the State.

28. The climate is mild, and therefore suitable for dairying, and I would recommend as an ideal area for a dairy on this section a holding consisting of 1,000 acres of coast grass land, 50 acres of swamp land adjoining, and 500 acres of forest country to be opened up and improved for grazing purposes.

29. The coast grass land will provide the necessary herbage for carrying on the industry from April to November without assistance. During the remainder of the year, to make a full success, it will be found necessary to either grow summer feed on coast swamp lands, provide an inland area of grass land, or better still, combine both.

#### THE SECTION EAST OF THE SHANNON.

30. This area extends from the Shannon River to Wilson's Inlet, the features of the coastal fringe being much the same as the other portions of the seaboard. There are some exceptionally fine areas of grass land here, notably on either side of Irwin Inlet, and one area on the west side of Nornalup Inlet, consisting largely of granite rocks, which is of inferior quality to any other portion of the coast.

31. The country inland is more varied than in parts 1 and 2, consisting largely of sandy plains with masses of exposed granite, and containing considerable areas of bogs with dark soils of a character which I have not met in other parts of the State. These bogs occur usually along the upper edge of depressions in the contour. The dark bituminous-looking soils appear to be brought to the surface through a bed of sandy soil by an upward flow of water. In many cases these soils appear only about the neighbourhood of the lines where the water exudes from the surface; and this water, flowing over the sandy soils to the nearest watercourse, does not appear to carry the soil of the bog in solution, since there is no evidence of any further deposit being made on the lower levels.

32. On the south side of the eastern arm of Brooke's Inlet there is a large area of soils of somewhat similar character. Here numberless little streams rise from the northern edge of the coastal downs and fall northerly to Brooke's Inlet, at times spreading over or winding through wide boggy flats and forming many patches of shallow still water, upon which a thick frothy scum forms; this eventually settles as a hard, dark-coloured crust on the deep, soft soils. I have observed that vegetation of short growth thrives luxuriantly on this hard crust, but I am in some doubt as to what class of cultivation for commercial purposes it is suitable for.

33. In one locality on the southern shore of Brooke's Inlet large mounds of this bituminous-looking soil rise above the waters of the inlet. These, while moistened by the water, are soft and elastic, but when dry become light and friable. I have been assured by an experienced geologist the samples I brought away contain nothing but clay and decayed vegetation. These soils, which appear to be invariably of great depth, should therefore be suitable for the growth of root and surface fodder crops.

34. Throughout the sandy inland area frequent small patches of karri forest occur, growing on rich loams similar to those found further west. These generally occur round granite outcrops, from decomposition of which the loams are probably derived. The timber on these areas is usually of second-rate quality (the trees being frequently piped); and, since it only occurs in isolated patches, I do not consider it of much commercial value, and can see no objection to the selection of the land for cultivation.



35. There are, however, two fine karri forests on this area; one containing about 50,000 acres, situate on the Deep River, immediately to the north of my classification line; and the other, containing about 60,000 acres, surrounding Nornalup Inlet.

36. This inlet is the only one on this coast which does not become completely barred in the summer. A considerable amount of timber was lightered here from the surrounding forest some years ago, and a revival of the industry appears practicable.

37. On this section, as elsewhere on the coast, the lower courses of the rivers and large numbers of the subsidiary streams are permanent, and though the inland country does not contain nearly so large a proportion of first-class soils as section No. 2, the back lauds include areas of second-class country which would prove of considerable value if ever brought within easy reach of a market.

38. In this, as in sections 1 and 2, the most promising industries appear to me to be dairying and kindred pursuits and fruit-growing, and I would here again suggest to the selector the advisability of securing coast grass land, swamp land, and upland simultaneously.

39. It is unfortunate that this portion of the coast has no natural harbour between Flinders Bay and Albany, and all produce for distant markets other than stock must, therefore, depend for the present on existing facilities for overland traffic. A small portion of the eastern end is served by the Denmark-Torbay railway; but, for the great bulk of the finest part of the district, situate between Bridgetown and the coast, the only outlet at present is *via* Bridgetown-Bunbury railway.

#### CULTIVATION PROSPECTS.

40. Since I find that Mr. W. Brockman makes a handsome profit on his fruit after carting it 40 miles to Bridgetown, and there are large areas of land of similar quality to that he occupies situate equi-distant or nearer to the railway terminus, there seems no reason to fear disappointment for others who may elect to start this class of cultivation in this locality. Neither is there any reason why the grass lands should not be immediately turned to far better account than at present. Although distance from market must be a bar to extensive dairying on the coast until the conditions of overland traffic improve, there is immense value in these lands for fattening purposes, if developed as I have already suggested.

41. In an earlier report I have recommended the present reservation of some of the most important areas of swamp land for the purpose of encouraging close settlement, but complete development of these, as in the case of the dairying industry, cannot be anticipated while the means of access to them remain as at present.

#### GRAZING LANDS.

42. It is well known throughout the South-West District that stock of all descriptions thrive best by being changed at intervals between the coast and inland pastures. This will probably not be so noticeable as the different classes of country are opened up, and greater varieties of fodder produced; but for the present I would advise every selector who proposes to keep stock to secure areas of both classes of country. And, in this connection, since the area of coast grass land is much less than the available area of uplands, I would suggest that the selection of excessive areas immediately along the coast should be discouraged, and that all lands within the coastal fringe should only be alienated as frontage areas to high-water mark, or the inland edges of the bare sand patches which occur frequently along parts of the coast.

43. On the accompanying plan the approximate positions of all extensive areas of first-class up-land, swamp land, and coast grass land are shown in distinctive colour. I spent the greater portion of my time tracing the boundaries of these, the most important, areas of the district, and have not attempted to show the positions of isolated spots of first-class soils within the second-class areas, nor to distinguish between second and third-class lands. The written description of these areas conveys a better general idea of the country than any map that could be prepared from the notes I could obtain while traversing them.

I have, etc.,

FRED. S. BROCKMAN,  
Chief Inspecting Surveyor.

The Surveyor General