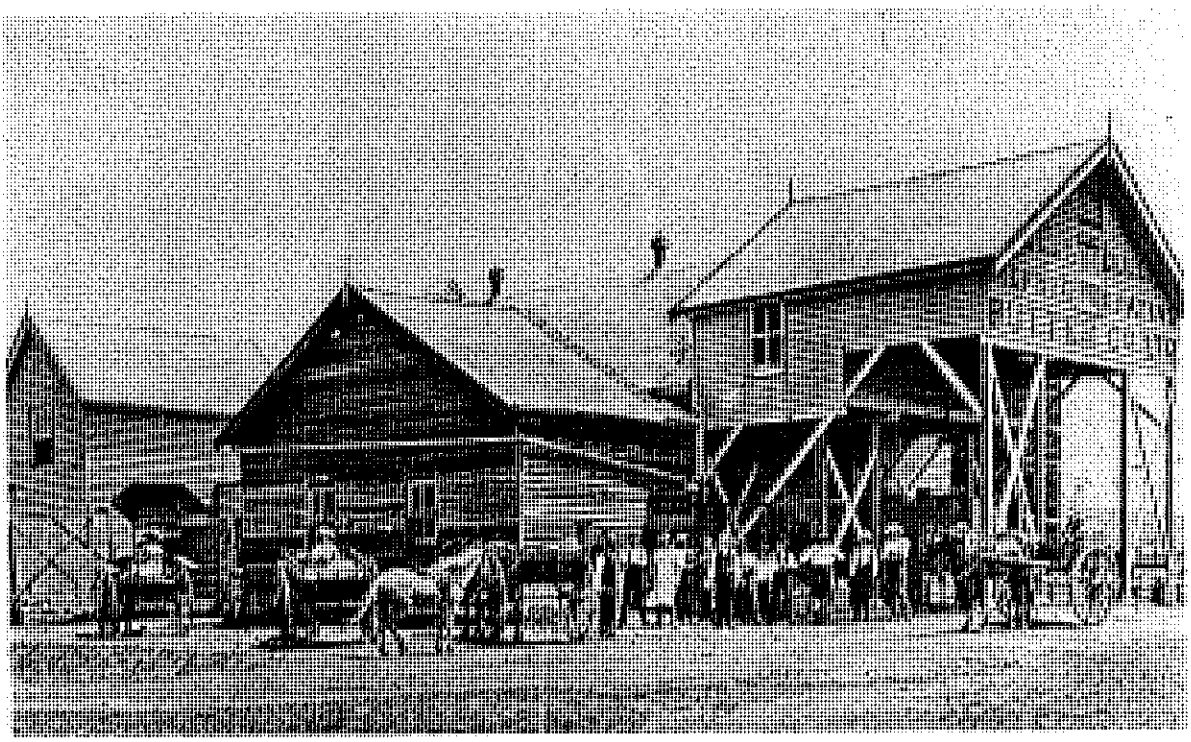

Ulladulla Butter Factory, opened in 1895. **Source**: Morrissey, *A Pictorial History of the Shoalhaven*, p.25

SHOALHAVEN DAIRY INDUSTRY • STAGE 1
ARCHAEOLOGY OF THE MILTON & KANGAROO VALLEY AREAS

VOLUME 1
CONSERVATION ANALYSIS

PETER FREEMAN PTY LTD
CONSERVATION ARCHITECTS & PLANNERS

EDWARD HIGGINBOTHAM & ASSOCIATES PTY LTD
ARCHAEOLOGY, HISTORY & HERITAGE

NOVEMBER 1997

SHOALHAVEN DAIRY INDUSTRY • STAGE 1
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CONTENTS

SHOALHAVEN DAIRY INDUSTRY • STAGE 1
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VOLUME 1 • CONSERVATION ANALYSIS

1.0 INTRODUCTION

1.1 BACKGROUND & PURPOSE OF THIS STUDY

The City of Shoalhaven area includes four major pastoral/ dairying landscape areas: Kangaroo Valley, the Milton-Ulladulla area, the Berry Bolong area and the Crookhaven River Area. The range of landscape elements within these areas includes farms, barns, feed silos, milking stalls, feedstalls, sheds, barns, yards, fences, windmills, cisterns, wells, and cheese and butter factories which have developed in response to local economics progressively influenced by the growth of the Sydney metropolitan area and new dairying technology. A study of the archaeology of the dairying industry in any part of the Shoalhaven local government area will inevitably be prefaced by the consideration of the historical process of settlement and the dissemination of ideas and technology in the contiguous Southern Highlands and Illawarra areas.

The scale and pattern of pastoral landscapes of the Illawarra were largely determined following the sub-division and sale of the large estates in the late nineteenth and early twentieth centuries. The scale and nature of the archaeological evidence suggested by the Shoalhaven Heritage Study [1995-1997] resulted in a two stage approach:

- Stage 1 would comprise Kangaroo Valley and the Milton-Ulladulla area; and
- Stage 2 would cover the coastal areas of the Nowra catchment from Berry to the Crookhaven River in the south.

The completion of Stage 1 was made possible in 1997 by virtue of a heritage grant to Shoalhaven City Council from the Department of Urban Affairs and Planning, under the National Estate Grant Program [NEGP].

An historical overview of the Shoalhaven District is presented as an introduction to the histories of the Kangaroo Valley and Milton-Ulladulla areas and in preparation for Stage 2 of this project. The histories look primarily at the nineteenth century patterns of settlement which resulted in the distribution of farms and establishment of property boundaries. The impact of economics which has largely

determined twentieth century developments will be considered as appropriate. Pasture improvement and the development of dairy cattle breeds will only be considered where relevant.

This study has been developed as an extension to the Shoalhaven Heritage Study [1995-1997] which highlighted the need to further investigate thematically based sites identified during the course of fieldwork for that study. The report on the archaeology of dairying in the Shoalhaven has been funded by a grant to Shoalhaven City Council under the Heritage Grants Scheme managed by the Department of Urban Affairs and Planning. Stage II of the study, on the pastoral landscapes in the Nowra/Berry Catchment is to be the subject of a second grant application.

The purpose of this study is to provide a list of sites associated with the historical development of the dairy industry on the South Coast, together with examples typical of the area. The study includes site survey and an inventory of sites in the Milton-Ulladulla area and Kangaroo Valley. The survey information includes descriptive text, photographic records, sketch plans and working layouts, where possible. This report summarises the findings of the survey, including historical background, site survey, principal findings, statement of significance and recommendations. The attached inventory was prepared in a format suitable for inclusion within the Shoalhaven City Council Heritage Inventory.

1.2 THE STRUCTURE OF THIS STUDY

The study is presented in two volumes:

Volume 1
Conservation Analysis

Volume 2
Inventory Based Description of Dairy Industry Sites

The field work for the study was intended to document individual sites as an alerting process which would inform the development of management strategies for the pastoral landscape settings [cultural landscapes] in each of the study areas. Field data has been entered directly onto the heritage study database.

This report has been prepared in accordance with the Heritage Office and Department of Urban Affairs and Planning *NSW Heritage Manual* [1]:

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1 Heritage Office and Department of Urban Affairs and Planning. 1996. *NSW Heritage Manual.*

- Historical research
- Site survey
- The assessment of the archaeological significance of the site
- Recommendations for management and conservation[2]

The site survey was conducted by Ms. Meredith Hutton, assisted by Mr. Mark Bannenberg, over a period of six days in June 1997. Funding did not allow for return visits, to optimise recording conditions and light for photographic work. In spite of pre-arrangement of site visits by phone, several owners denied access to their properties, with the result that these properties have not been recorded and added to the survey.

1.3 CONSULTANT TEAM & AUTHORSHIP

The team for Stage 1 of this study were as follows:

Peter Freeman	Project director, conservation architect and planner [Peter Freeman Pty Ltd]
Roger Hobbs	Project Manager, heritage specialist [Peter Freeman Pty Ltd]
Ed Higginbotham	Project Archaeologist [Edward Higginbotham & Associates]
Meredith Hutton	Field Archaeologist [Edward Higginbotham & Associates]
Mark Bannenberg	Field Archaeologist [Edward Higginbotham & Associates]

The study document has been compiled by Peter Freeman Pty Ltd. The historical overview and cultural landscapes sections were completed by **Roger Hobbs** of Peter Freeman Pty Ltd. The site study report and inventories were completed by **Meredith Hutton**, and were compiled and edited by **Edward Higginbotham**.

1.4 THE STUDY AREA

The study area comprised the dairy farming areas of Milton-Ulladulla and Kangaroo Valley, NSW. Many of the farms are named on the Milton 8927-2-N and Kangaroo Valley 9028-IV-S Topographic Maps, 1:25 000. Grid References for individual properties have been recorded on the Shoalhaven

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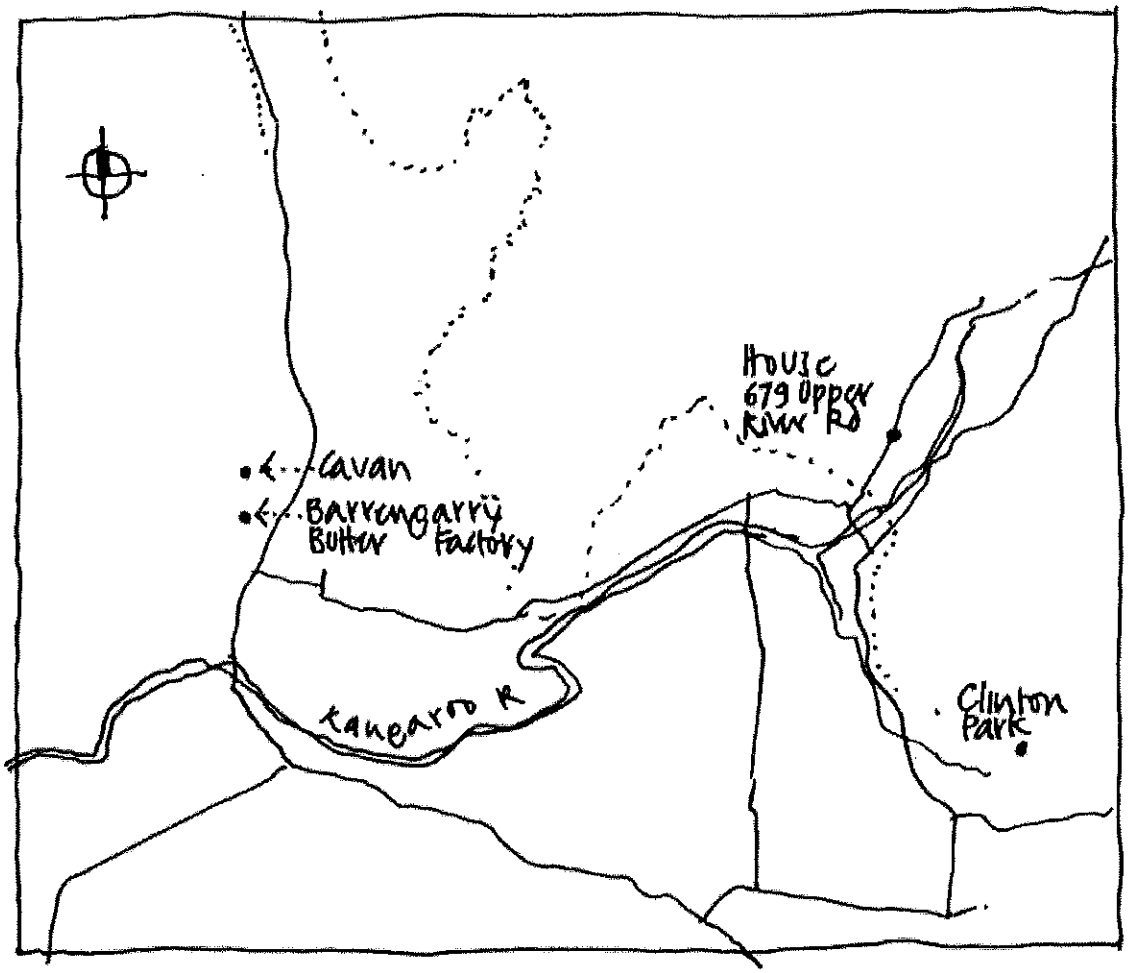
2 Heritage Office and Department of Urban Affairs and Planning. 1996. Heritage Assessments and Heritage Office and Department of Urban Affairs and Planning. 1996. Archaeological Assessments. Archaeological Assessment Guidelines.

Heritage Study Inventory Forms. Refer Figures 1.1 and 1.2 below for the extent of the study area.

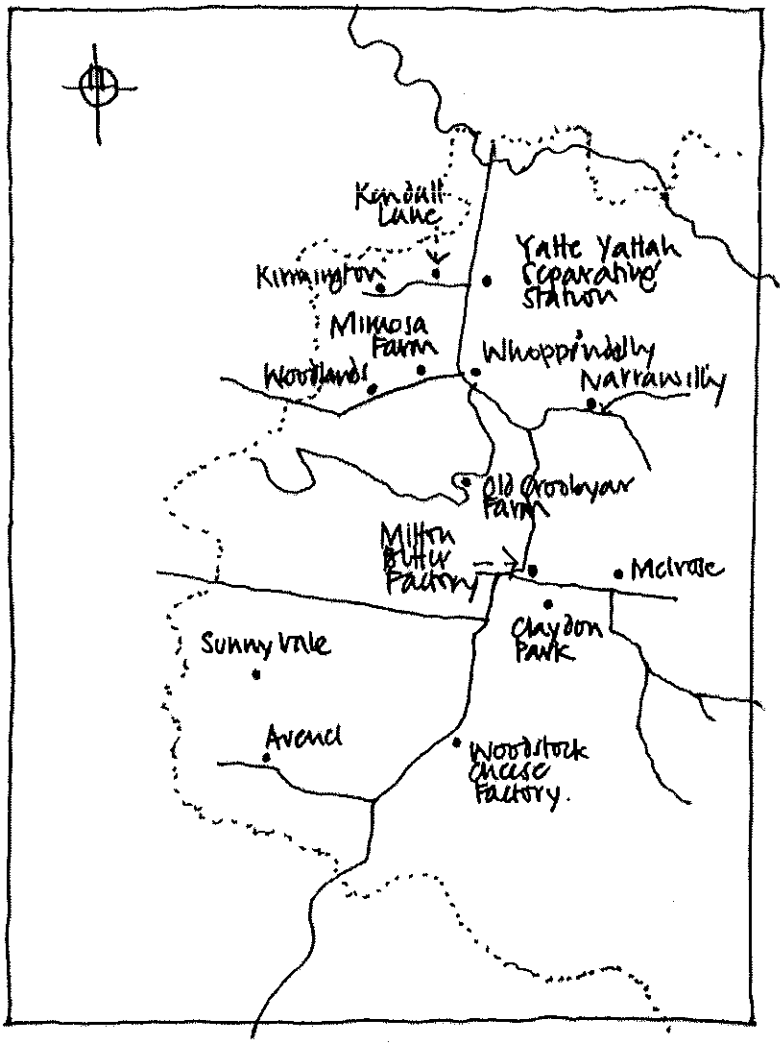


Kangaroo Valley dairy industry sites.
Source:
EH&A, 1997

1.5 ACKNOWLEDGEMENTS

The consultant team acknowledges the support of **Mr John Flett**, Planning Services Division, Shoalhaven City Council. The consultant team also acknowledge the assistance provided by the Milton Historical Society; the Kangaroo Valley Historical Society; and all those property owners who allowed access to their farms and the associated landscapes.

This report has been funded by a grant to Shoalhaven City Council under the Heritage Grants Scheme managed by the Department of Urban Affairs and Planning.



Milton Ulladulla dairy industry sites.
Source:
EH&A, 1997

2.0 HISTORICAL OVERVIEW

2.1 EXPLORATION AND EARLY SETTLEMENT

European exploration of the Shoalhaven River as a precursor to settlement in the Shoalhaven District did not take place until 1805 when the government surveyor, James Meehan, sailed to the mouth of the Crookhaven River with Lieutenant Kent and inspected the Shoalhaven Valley as far west as Burrier.[3]

The first concerted attempts to create a land-route into the area came from the Southern Highlands under Governor Macquarie. The first significant attempt was made by Dr Charles Throsby, coming south-east from Sutton Forest in 1818. This exploration was assisted by the knowledge of the Burrier ford discovered by James Meehan in 1805. The route through the Shoalhaven gorge country was mapped by Meehan, while Throsby, guided by two Aboriginal men, established a pack-horse track from Burrier, following Currambene Creek down to Jervis Bay.[4]

To find a practicable route, surveyors John Oxley and James Meehan in 1819 explored Jervis Bay, Currambene Creek and the site of Nowra. Meehan then went up the south bank of the Shoalhaven to Burrier, crossed at the ford and went north through the Bugong Mountains to cross the Kangaroo River upstream from the present Bendeela power station. From there Meehan struck due north to the site of today's Fitzroy Falls reservoir and then into the Wingecarribee. This inland section from Burrier north did not offer a feasible route for wheeled vehicles but the route from Burrier to Nowra on the south bank of the Shoalhaven was confirmed, though no road was created.[5] The lack of access to the rugged interior of the area delayed intensive exploration.

Alexander Berry, with his partner Edward Wollstonecraft, acquired the Coolangatta holding from 1822 onwards. This property was accessed entirely by sea.[6] In January 1822 Berry had left Sydney with Hamilton Hume on his second trip down the South Coast, exploring much of the Shoalhaven District by water. On his return to Sydney Berry successfully requested 10,000 acres from Governor Brisbane. During June 1822 Berry returned to Shoalhaven and in August received his first draft of cattle via the track from Bong Bong.[7] In 1824

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3 A.K. Weatherburn, *The Exploration and Surveys of James Meehan, 1805, 1818, 1819*, JRAHS 64, 1978-9, p.170.

4 Ibid, pp.171-5.

5 Ibid, pp.177-80.

6 Thomas Mitchell, Map of the Colony of NSW, 1834.

7 K. Harrison, *A Nursery for Cattle*, SHS 1987, pp.4-5

Berry was sending milk and cheese to Sydney and by 1838 360 cows were being milked on the Coolangatta Estate.[8] A survey of 1841 clearly locates a dairy south of the Shoalhaven River at Jindiandy in addition to the one at Coolangatta Homestead.

To encourage the development of the huge estate, Berry released land to tenant farmers from 1842 onwards. These tenants enjoyed eight hectares rent free for twenty-five years, and if clearing and fencing had been duly completed, they could expect renewal of the leases.[9] The pattern of settlement, land clearing and pastoral/ agricultural activity was repeated in the other future major pastoral areas of Shoalhaven including Ulladulla and Kangaroo Valley.

In 1828 the Rev. Thomas Kendall had four convicts as well as 30 free servants and his four grown-up sons, on his 1,280 acre property at Narrawallee Creek, the first grant in the Ulladulla area. Kendall's overseer was a ticket-of-leave man, Jones, and his stockman was an Irish Catholic, James Killogly, free by servitude. This combined establishment of free, freed and convict, had cleared 8 hectares and cultivated 1.6 in the first year 1828 and by the end of 1829 had cleared 32 hectares, increased the cattle herd from 49 to 72, established a dairy, erected seven kilometres of fencing and cut, carted and despatched several cargoes of cedar.[10]

The early non-resident landholders in Kangaroo Valley, Henry Osborne at Barrengarry in 1839 and A.B. Spark at Glenmurray in 1837, had overseers and convicts on their land, three for Osborne and two for Spark.[11] Cattle were first taken to the valley by men employed by Captain Richard Brooks of Dapto. Brooks' outstation, on 700 acres promised by Governor Macquarie in 1817, was located on the river flats below the present township.[12] This original grant to Brooks was bought in 1837 by Henry Osborne who had earlier sought a secondary land-grant of 2,560 acres at Barrengarry on 12 July 1837. This land was in addition to his primary land-grant at Albion Park. By 1840 the best land in the valley was taken up by Collins at Bendeela, Spark and Duguid south of the Kangaroo River and Osborne at

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8 Harrison, op cit, pp.6-7

9 J Anderson, *Guide to the Papers of the Berry, Wollstonecraft and Hay Families*, Mitchell Library, State Library of NSW, Mitchell Library Manuscripts Guides 15, draft 1991, x-xi

10 M.R. Sainty and K.A. Johnson, eds., Census of New South Wales, November 1828, Sydney 1980; Milton-Ulladulla and District Historical Society, *Nulladolla 1988*, Milton 1988, 7-8.

11 J. Griffith, *A History of Kangaroo Valley, Australia*, Kangaroo Valley 1978, pp.26-7. Information from 1841 census.

12 Ibid, pp.15-16

Barrengarry.[13] Although much land, including Bendeela, was bought for speculative purposes, it was at Osborne's Barrengarry estate that the first dairy industry in the valley was developed under Charles McCaffrey in 1846. Within a year or two McCaffrey was producing butter for the Sydney markets. Butter, in kegs, was taken by pack horse to Albion Park via the Upper Kangaroo River valley.[14]

The relative isolation of the South Coast meant that most milk surplus to local needs was used to make butter and cheese for the Sydney market. From the 1840s butter, made by churning cream which had been allowed to separate in cooling dishes, was washed, salted and packed into boxes or kegs. Early cheese production required little specialised equipment; large wooden tubs [or wash tubs] and a simple press for the curds when separated from the whey [sour milk]. The cheese press could be made from readily available local timber.[15] The milking needs of this early industry were adequately met by post and rail stockyards and fences and slab dairies and barns and milking bails, constructed from split timber and bush timber posts, with shingle roofs. The dairy was sometimes stone-paved to improve cleaning and cooling, as were the bails. Until the 1840s only one hand milking per day was usual but later this was increased to two per day to increase production. Water from local streams was integral to the process and resulted in a close relationship between dairy, farmhouse and water supply. These primitive production methods, product quality and marketing were generally erratic.[16]

The pattern of transport established in New South Wales by the 1830s remained essentially unchanged until the 1860s when railways and steamships caused major changes in the emerging dairy industry. Land transport between Sydney and the interior operated in three overlapping zones; the urban core areas; the intermediate agricultural zone extending some 30 to 40 miles; and the third zone extending some 100 miles into the interior.[17] When Sir Thomas Mitchell published his extraordinary map of the State of New South Wales in 1834, he showed no coastal roads at all in Shoalhaven and only a handful of inland tracks. Small coastal sailing ships, bullock teams and pack horses were the only means of transport between farms and the Sydney market. The essentially self supporting farming communities in the Shoalhaven area were able to create surpluses of butter

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13 Ibid, pp.22-23

14 Griffith, op cit, pp.23-30

15 J P Dowling, *Practical Dairying for Australia*, Department of Agriculture of NSW, 1893 pp.154-155

16 Harrison, op cit, pp.9-10

17 M Kennedy, *Hauling the Loads*, MUP 1992 p.55

and cheese. Some farmers were able to send their surplus produce to the cities but the lack of a good road system delayed development of a dairy industry.

The development of a road link between Sydney and the Illawarra was delayed because of the barrier formed by the coastal cliffs north of Wollongong. As population increased in the Wollongong area, the need for a better road also increased, but Mitchell's new road of 1834 via Mount Keira was not particularly successful, and in any case this road ended at Saddleback Mountain, just south-west of Kiama. The 'opening up' of the Bulli Pass in 1836 offered an alternative route but it was not a viable route for wheeled vehicles until the 1860s. Meanwhile the roads within Illawarra extended as far south as Gerringong and in 1856 the government planned a road south to Berry. When this did not eventuate, Alexander Berry built the road to Berry and then to Bomaderry in 1858 at his own expense .[18]

Until the development of good roads during the 1930s the profitable trade in dairy produce and timber kept a large coastal steamer fleet in constant employment. The Illawarra Steamship Company operated a regular service from 1852 following an amalgamation of smaller companies. Nowra was inaccessible to seagoing ships until 1904 when outcrops at Bomaderry Creek were broken up.[19] Produce was collected at both Ulladulla and Greenwell Point; travel time was only four hours by steamship from Sydney.[20]

2.2 THE PERIOD OF GROWTH : 1861 TO 1890

The 1860s saw the real beginnings of a dairy industry following the introduction of Free Selection in 1861 under Robertson's Land Act. Dairy farming represented the small selector's future in coastal areas, with good soils and adequate rainfall. This contrasted with the inland areas with lower rainfall. Although galvanised iron roofing was in limited use by the 1840s, the introduction in 1856 of Morewood and Rogers' patented corrugated iron revolutionised construction of buildings and the more effective storage of roof water.[21] Riveted, wrought iron ships tanks were available by the 1850s, with the first galvanised iron water tanks manufactured by 1858.[22] However these did

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18 *The History of the Prince's Highway*, Main Roads 16 iii, March 1951, 75-81.

19 R J Walliss, *Greenwell Point: an Early Shoalhaven Port*, Greenwell Point 1988 pp.18, 23

20 Dowling, op cit, p.3

21 Improvement in the manufacture of iron into sheets; Letters of Registration, *NSW Government Gazette*, A.D. 1856 14th January No.4 pp.13-22

22 Catalogue of the Victorian Exhibition, 1861, p216

not come into general use until good quality rainwater could be collected from corrugated iron which had begun to replace shingled roofs by the 1870s. The need for large quantities of water in dairying, irrespective of location, was met by the introduction of windmills in 1876, which were able to pump water into tanks and troughs supplying both farmhouse, pastures and dairies.[23] Water was crucial to the successful operation of dairy farms which, in common with homesteads across Australia, were preferably sited on high ground to allow control of the landscape. The possibility, and need, to locate farmhouses and dairies away from creeks and streams was met on wealthier farms by the construction of in-ground brick cisterns or wells. These facilities guaranteed a relatively cold supply of water in contrast to that stored in galvanised metal tanks.

Successful selectors eventually bought mechanical butter churns with rotating paddles. American [Jersey] churns with hollow casings allowed heating with hot water to break down the cream in cold weather.[24]

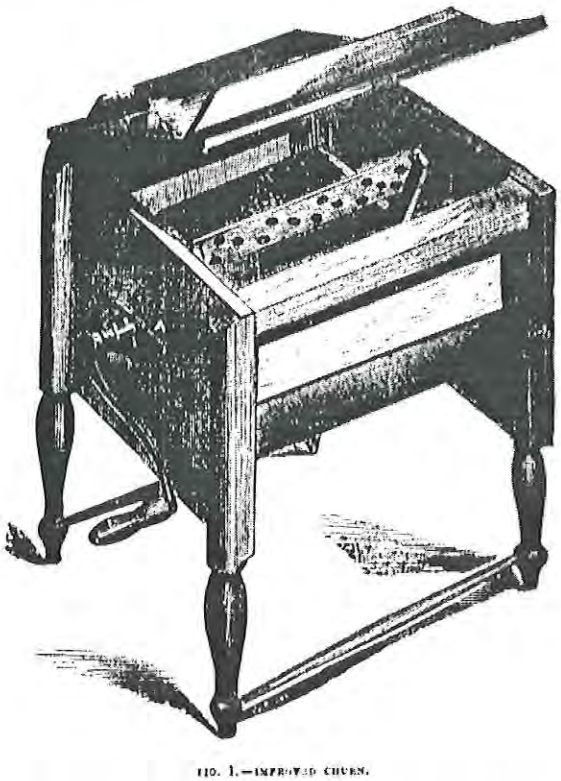

FIG. 1.—IMPROVED CHURN.

An 'improved' butter churn.
Source:
Town and Country Journal,
19 November 1870, p.13

The first real benefits of modernisation were felt along the South Coast when Thomas Mort went into partnership with John Hawdon at Bodalla in 1855. In 1860 Mort bought out Hawdon and set up the estate under leasehold tenant farmers. Shelter was provided by limiting the clearing of

23 M Cannon, *Life in the Country*, Viking O'Neil, 1973 p223
24 Dowling, op cit, p.139

trees with up to 60 cows milked at a time in one shed. Mort's establishment of a cheese factory in 1865 was five years ahead of the first in Britain in 1870 at Derby. In 1875 Mort and his refrigeration engineer invented a way in which milk could be taken from the South Coast to Sydney. Two years later in 1877 Mort lost £80,000 when the refrigeration on his cargo ship in Sydney Harbour broke down.[25] In 1879 the Scottish firm of McIlwraith & McEarchen revolutionised the shipment and storage of meat and dairy products when the chartered emigrant liner Strathleven succeeded in bringing back to Britain 30 tons of meat and 80 tons of butter with the newly invented refrigeration.[26] These developments were paralleled by attempts to produce canned condensed milk; Roger Seccombe at Milton was producing condensed milk in 1873 but it was not until the 1890s at Coolangatta that the product was successfully made locally and sold to overseas and local markets.[27]

Further progress was made in 1881 when three cream separators, designed by Swedish engineer, Gustav de Laval, were introduced to the Southern Highlands at Thomas Mort's Mittagong factory. Mort's Fresh Food and Ice Company supplied milk to the Sydney markets by rail but Mort wished to turn surplus milk into butter. Separators increased butter output considerably; hand made butter required three gallons per pound, while separator butter required only 2.6 gallons per pound.[28] Smaller dairy farmers could now form co-operatives which could afford to buy the new equipment. The first of these factories, 'The Pioneer', was set up at Kiama in 1883-1884 on Hindmarsh's farm 'Alne Bank' at Gerringong. These early models were not hand separators but heavy units driven by horse power.[29] Initially separators were large and not suitable for small dairies, their use prompting the establishment of factories. However by 1885, 800 hand-operated separators were operating in the Colony with some capable of processing 50 to 60 gallons of milk per hour.[30]

The new council of Numbaa, formed in 1868, took over the roads in the district which had been virtually all been constructed by Berry for the convenience of his Coolangatta estate. With a rate income to spend, the Numbaa Council improved the road to Gerringong in the years following 1868. By gradually linking local road systems, the main

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25 Cannon, op cit, pp.124, 162-164
26 Ibid, pp.124-125
27 Harrison, op cit, p.15
28 Dowling, op cit, pp.5-6
29 Harrison, op cit, pp.16-17
30 Dowling, op cit, p.6 and pp.160-163

South road was created linking Kiama with Ulladulla and the new township of Milton[31].

Advertisement for Alpha-Laval separators, date unknown. A similar advertisement in the *Weekly Courier* of 24 May 1902 claimed over 300,000 had been sold world wide.
Source:
Queen Victoria Museum & Art Gallery, Launceston

2.3 THE BOOM PERIOD : 1890 TO 1914

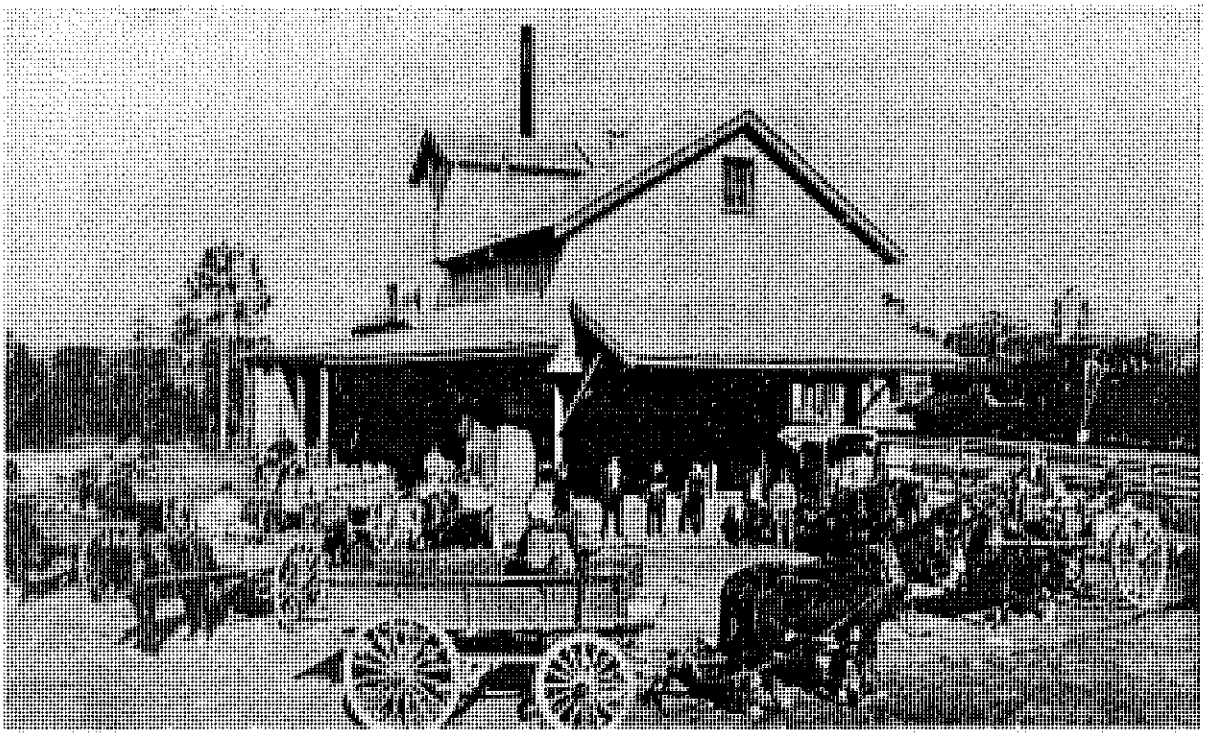
The Shoalhaven Road bridge was opened in 1881 but did not begin to have any significant effect on the Shoalhaven district until the 1890s when the railway line from Kiama was extended to Bomaderry in 1893.[32] The railway soon dominated the passenger market between Nowra and Sydney. After 1895 the Illawarra Steamship Company

31 *The History of the Prince's Highway*, Main Roads 16 iii, March 1951, 75-81.

32 J Gunn, *Along Parallel Lines: A History of the Railways of New South Wales, 1850-1986*, Carlton 1989 pp.140-141, 167

concentrated on freight but by the 1940s the shipping activities of the Company had virtually disappeared.[33]

During 1891 to 1892 the Department of Agriculture sent out a travelling dairy to display the modern systems of butter and cheese making.[34] Any area which could rely on enough suppliers was able to start its own butter and cheese factory with milk brought in carts to the factory.[35] On 10 September 1895 the Berry Central Butter Factory opened, reputedly the largest in New South Wales. The Nowra Co-op Dairy Co Ltd started in 1902 but soon moved to Bomaderry adjacent to the railway sidings.[36]



Nowra Dairy Co-op at Bomaderry Station circa 1911.
Source:
N.P. Morrissey, *A Pictorial History of the Shoalhaven*, Weston & Co, Kiama, c1990

Significantly both the Nowra and Berry factories were sited to take advantage of permanent water [rivers] in close proximity to the railway which had arrived at Bomaderry in 1893.

These technical developments were assisted by the introduction of legislation accommodating the new industry. On 1 January 1887 the Dairy Supervision Act was passed, aimed at ensuring the cleanliness of all dairy products. Bails, dairy and yards were to have floors capable of being cleaned; every day in the dairy and bails and weekly in the yard. Whitewash was used with cool rooms for storage to be constructed of brick. Amendments in 1893 and 1894

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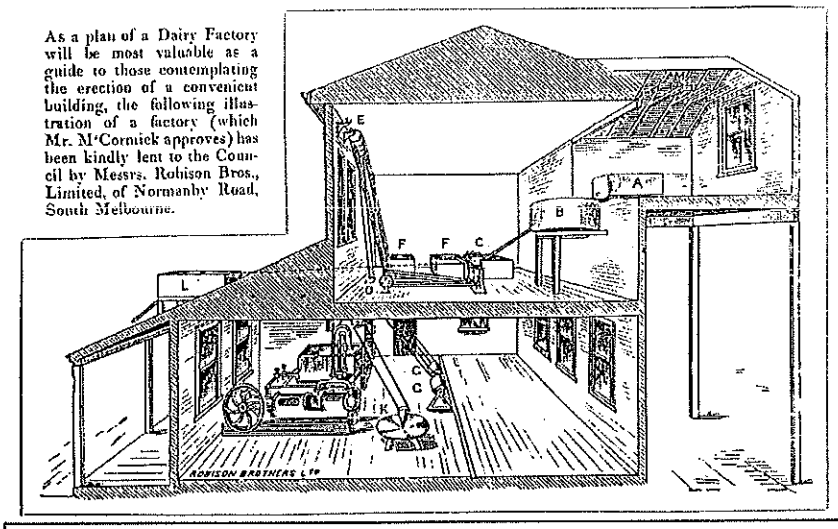
33 A Clark, *Shipping in the Shoalhaven District* 1989 p.4
34 Dowling, op cit, p.6 and pp.160-163
35 Harrison, op cit, p.18
36 Griffith, op cit, p.56



"The illustration represents a factory worked on what is known as the 'gravitation' system. In the design of this building our aim has been to arrange the plant in such a manner as to reduce the labour in working same to a minimum, besides keeping in view the greatest cleanliness in working. Special attention has also been paid to the lighting of the factory.

The working of the plant may be briefly described as follows:- The milk is raised by means of the hoist M from the vehicle below, and emptied into the milk-weighing tank A. Upon a valve on the discharge pipe of tank being opened, the milk will flow into the milk-receiving tank B. The latter tank is provided with an outlet pipe having branches with valves leading to the separators C, and so arranged that the milk from tank B may be allowed to flow to each of the separators at one time, or to any given separator only.

Our illustration shows the plant arranged so that the cream separated from the milk may be run into cream-tanks placed in a cool storage chamber during hot weather; and if not required to cool, it may be run into the churns G on the ground floor. The churns, after being charged, are set in motion, and after the butter is made it is removed to the butter-worker, to have the moisture worked out and the butter salted.

The cream separators and skim milk tank L are arranged to allow the skim milk to readily gravitate from separators to skim-milk tank.

Our working drawings shaw two cool storage chambers, one for cooling the cream in warm weather, and the other for storage of the butter. The refrigerator for keeping these chambers cool is also arranged to supply plenty of cold water for churning the butter. Probably the cool rooms and refrigerator may be done away with, as your climate is so much milder than ours.

Where practicable, the factory could be erected at the foot of a hill, and thus do away with the hoisting of the milk."

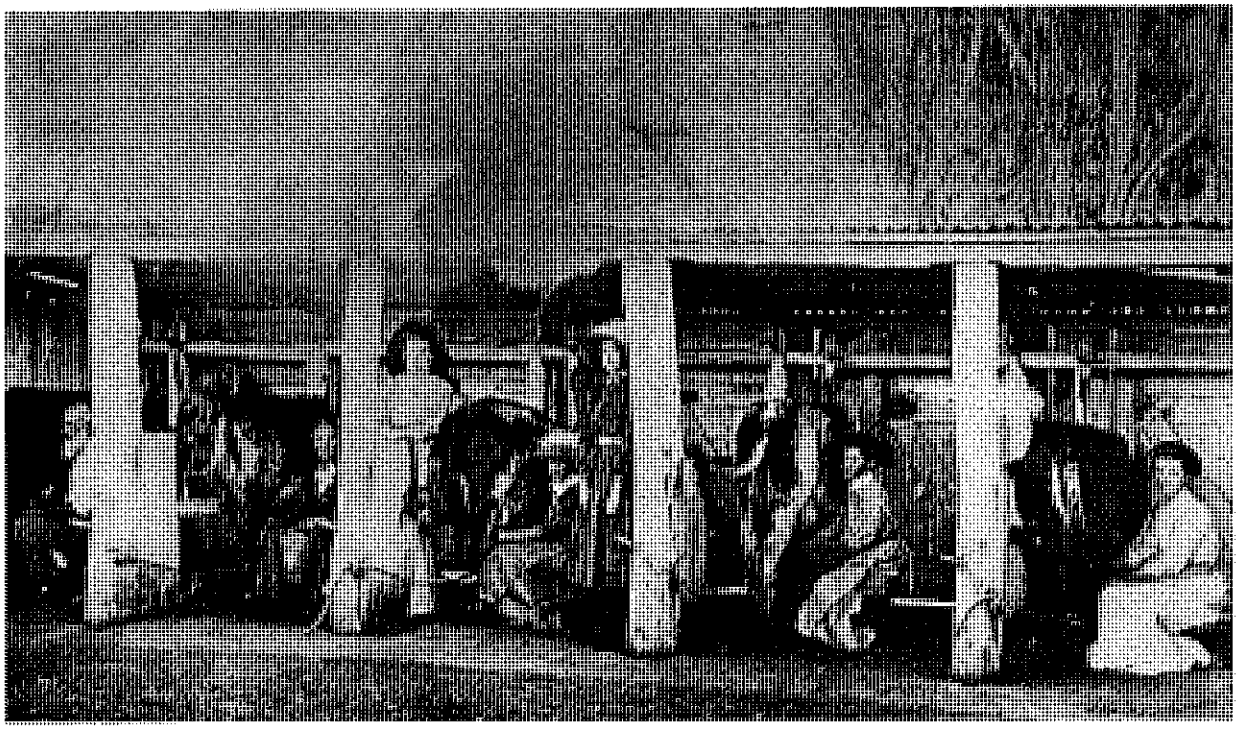
A suggested design for a butter factory.
Source:
Department of Agriculture, Tasmania, Bulletin No. 2, Modern Dairying", Hobart, 1893, pp.53-54

stipulated that tank water had to be used in dairies [not creek water], and that pigs could not be yarded less than fifty yards from the dairy. The latter requirement was due to the use of skimmed milk [from the cream separators] or whey [from cheese production] for feeding pigs as a secondary source of income.[37] The now intensive specialised nature of dairy farming was further evident in increased production through sheltering and stall feeding in winter using maize, sorghum and pumpkins and the mandatory twice daily milking routine. Silage as a means of increasing feedstocks was gradually introduced during the 1880s and 1890s.[38] During the early 1900s prefabricated concrete silos for silage were imported from overseas.[39]

The history of cheese production differed from that of butter production. Cheese was harder to make than butter but could be kept without refrigeration. The cheese-making process relied on whole milk and cheese had to be made

37 Harrison, op cit, pp.23-24
38 Dowling, op cit, 1893 p.16 and pp.103-105
39 R Florance, *A Village Jaunt, Greenhills to Greenwell Point*, 1993

every day. The evening milk was kept overnight and the morning milk added in the cheese vats. The process usually lasted all day and was very labour intensive. The equipment needed was more complex than that required in the normal dairy and required a separate building with at least two rooms; one room for processing the other for the storage of maturing cheeses. The production of butter and cheese was to be affected by the arrival of the railway and the consequent centralisation of factory processing.

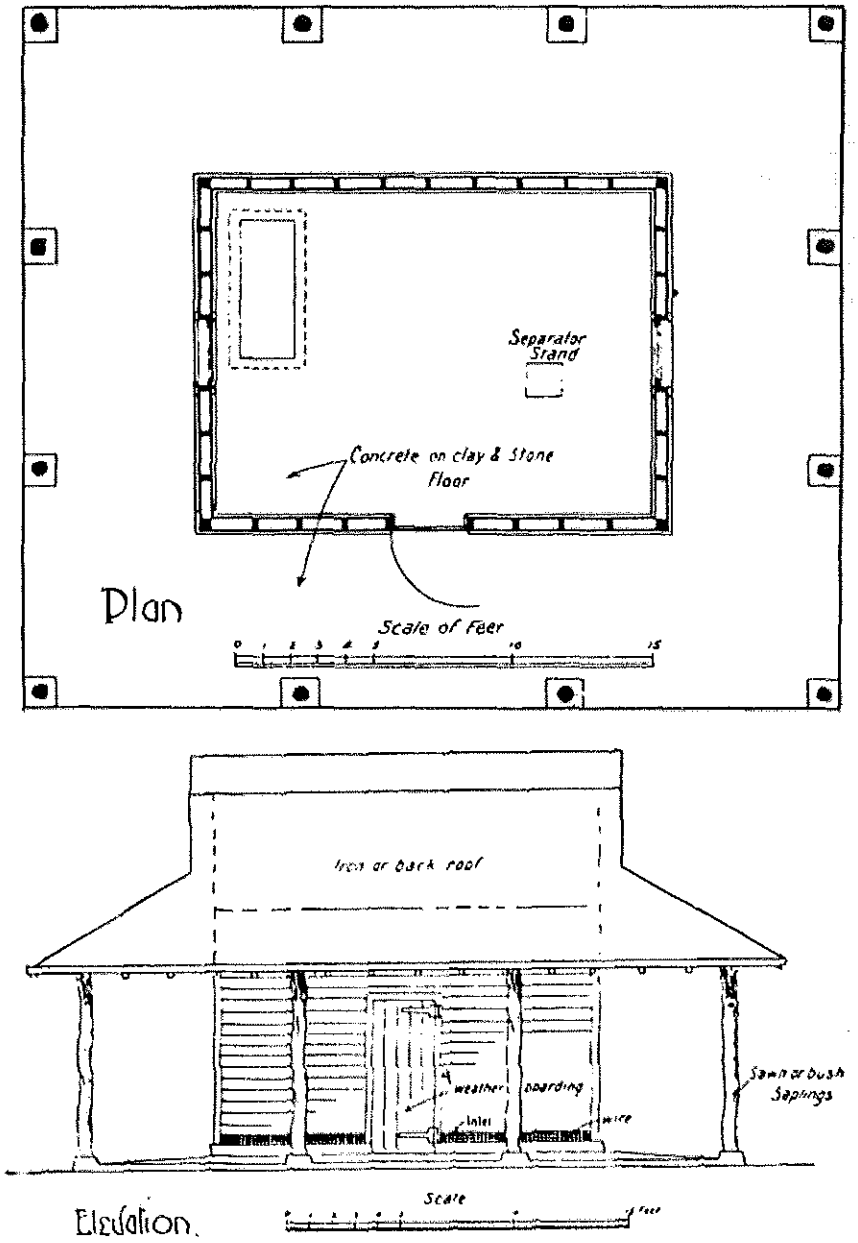


Mr & Mrs M Georgenson and their three daughters milking at their farm at Pyree, circa 1900.
Source:
Photograph courtesy J. Henry, Bolong, reproduced in Morrissey, op cit, p. 20

Although the dairy industry was already mechanised by the 1890s the arrival of the railway from Gerringong and Kiama at Bomaderry in 1893 was to revolutionise the dairy industry. The Sydney markets were now within easier reach, making it more profitable for the small farmer to expand his holdings and for more marginal holdings to be developed. Cheese and butter production became the preserve of industry allowing the farmer to get better, more consistent prices for his milk. However specialisation brought the need for better, larger dairy facilities, more productive cows and pasture, and consequently the need for a larger workforce to milk the cattle.

During the 1890s and early 1900s the Agricultural Gazette of NSW featured a range of articles intended to promote dairy farming . Among these were articles on how to build with pisé and concrete and more importantly details for a 'standard dairy' for use by small farms with between 40 and 80 cows. Significantly the location for a hand operated cream

separator is clearly shown on plan.[40] The attempt at quality control by standardisation was most evident in the small weatherboard bail and dairy complexes which became almost standard equipment on the small dairy farms which resulted from the sub-division and sale of Berry's Coolangatta Estate by 1910 and Osborne's Barrengarry Estate by 1925.

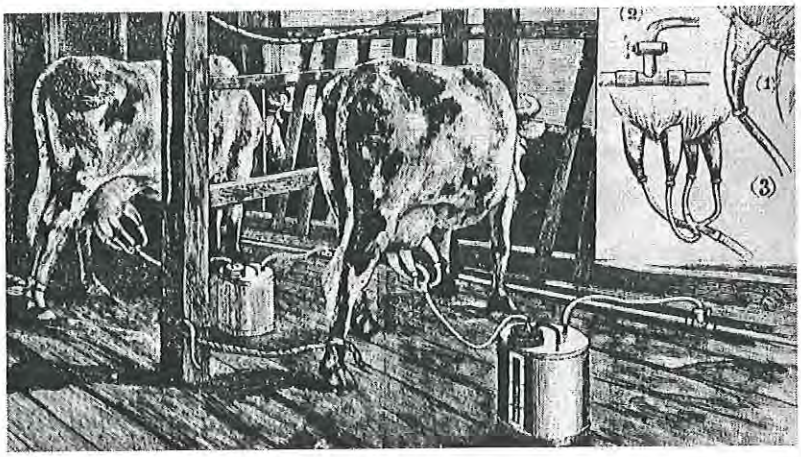


Plan and elevation of a 'standard dairy' [*The Agricultural Gazette of New South Wales*, 1890-1910].
Source:
Reproduced in *The Settler's Guide*, compiled by Keith Smith, Lothian, Melbourne, 1992

Much milk was still infected with TB bacillus due to the primitive methods remaining in use. However during the 1890s 'pasteurisation' was introduced to Australia, with the new Paasch pasteurising machinery installed in butter factories in Victoria and Tasmania by 1898. These advances made it possible for State governments to require by 1901

40 Government Architect and Hawkesbury Agricultural College 1909

that all milk producers be registered.[41] Although mechanical milking was introduced from Scotland by Thomas Mort at Bodalla in 1892 the new machinery did not take over until well into the twentieth century.[42] Brands of milking machinery in the 1890s included Ridd and the Gray Milking Machine. By 1910 they were being used in the Illawarra. In 1920 they were demonstrated on Mr Mison's farm at Jaspers Brush but it was not until after the Second World War that they became the norm.[43]



The first milking machines in Australia were installed at the Bodalla Estate Co. [NSW] in 1892.
Source:
M. Cannon, *Life in the Country*, Viking O'Neil, Melbourne, 1988, p.164

By the turn of the century those places and farms close to the railway placed greater emphasis on raw milk production than on agriculture or sheep. One inevitable result of the raw milk trade with the factories was brought about by the railway and the demands of the Sydney metropolitan area, resulting in the closure of many small butter factories and creameries. This was due to the fact that a better price was obtained for milk as milk, rather than for butter and cheese production, and cream could be sent to the larger factories for processing. In spite of this, new opportunities became available with the establishment of the Dairy Farmers Co-operative in January 1900; producer control of marketing was integral to the process with premises established at Ultimo, Sydney, by 1913.[44]

2.4 THE PERIOD OF CONSOLIDATION : 1914 TO 1940

The First World War 1914-1918 had two principal effects on the dairy industry: firstly, dairy factories kept going throughout the winter to take advantage of the new Imperial contract of 1917 whereby Britain took all surplus butter; and secondly, it caused the loss of a dedicated workforce.[45]

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41 Cannon, op cit, p.164
42 Ibid, pp.162-164
43 Harrison, op cit, pp.22-23
44 R G Antill, *Settlement in the South*, Weston Publishing, Kiama, 1982 pp.26-27
45 Jill Cassidy, 1995, *The Dairy Heritage of Northern Tasmania* p.38

Before the turn of the century most dairy farmers had relied heavily on large families for milking and labour. However in 1913 the Federal Government announced its Compulsory Training Act for boys over 14, thus making it difficult for farmers to predict their labour force. The onset of the First World War in 1914 resulted in additional impacts on dairy farmers to retain their production with a reduced labour force. Milking machines which were still considered with some doubt became a must although many farmers were forced to continue hand milking. Many farmers could not carry on and by the end of the First World War over 500 farms in the Illawarra and South Coast had closed down.[46]

The Dairy Farmers Co-operative expanded in the 1920s with extension of the supply area to Dungog, Moss Vale and the Hunter Valley; bottled milk was introduced in 1925.[47]

The post First World War boom did not last, with changing market conditions. Small graziers and dairy farmers had benefited from war time marketing arrangements but now they had to compete on the open free market. Farmers soon began to claim a right to a fair living. Although the dairying industry was on a sound footing, by the 1920s a sudden slump in the London market threatened the viability of the industry. Orderly marketing under the Dairy Produce Export Act of 1924 included an export control board for the dairying industry. This Act helped to prevent the wild fluctuations in the market which had plagued the industry. The Paterson scheme of 1926 placed an import duty on butter to cover the gap between export returns and producer returns. In effect the Australian consumer subsidised the dairy farmers.[48]

The 1920s Depression caused many farms to close due to reduced demand for their produce in an increasingly competitive market. Nevertheless the Nowra Dairy Co. produced 83 tons of butter in December 1929.[49] The rural industries did not fully recover their prosperity during the 1930s, agriculture showing less resilience than the pastoral industry. Dairying was hard hit in 1933 by the collapse of the British butter market. Recovery was hampered by the conservatism of many dairy farmers who were slow to use new methods and machinery to improve production. The Commonwealth and states were eventually able to implement a domestic butter price stabilisation scheme, in

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46 R G Antill, *Settlement in the South*, Weston Publishing, Kiama, 1982 pp.27-29

47 Ibid, pp.26-27

48 H Radi in F Crowley [edit], *A New History of Australia*, Heineman, Melbourne 1980 pp.379-380

49 *Shoalhaven News* 11 January 1930

place of the Paterson plan of 1926-1934.[50] The 1934 Commonwealth Dairy Produce Equalisation Scheme meant returns to producers were no longer based on overseas prices but on the cost of production. Production began to increase considerably as a consequence of the new legislation.[51]

In 1931 the State Milk Board was constituted by the State Government with wide control over all sections of the industry and in 1936 the South Coast Milk Train was instituted. Many Shoalhaven farmers were now effectively linked directly to the metropolitan area.[52]

Feed silos and feedstalls/sheds were ubiquitous in the post war era due to the demands of the factories and the Sydney supply zone and the consequent need for winter feeding. Increasing specialisation in the supply of fresh milk was assisted by the growth of roads. In 1920 the main South road was christened the Prince's Highway after the Prince of Wales; from 1925 it was the responsibility of the new Main Road Board.[53] The way was open for milk collection and delivery by road.

2.5 THE PERIOD OF RATIONALISATION : 1940 TO 1997

In 1940 a Milk Zone and Milk Board were established with levies payable by each of the 3,000 farmers in the Milk Zone. When the [Metropolitan] Milk Zone came into force, and production quotas were given to each farmer, the bails had to be upgraded; no more timber was allowed and all floors were to be of cement.[54] Free milk was introduced into schools in 1941 but withdrawn in 1973.[55]

Even into the thirties and forties, when small petrol driven machines became common, the most usual way of milking was to employ all the family members. This was an economic necessity in view of the cost of labour and equipment. The introduction of industrial award wages was a contributing factor to the alarming decline in production.[56]

The dairy industry suffered semi-drought conditions from 1934-1943 which caused further loss in production. Between May and August 1941 more than 500 farms closed down on the South coast. The prospects for dairy farmers were not ideal. Further droughts brought the dairy industry to a new

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50 J R Robertson in F Crowley [edit], op cit, pp.436-437
51 Jill Cassidy, 1995, *The Dairy Heritage of Northern Tasmania* p.38
52 Harrison, op cit, pp.23-24
53 *The History of the Prince's Highway*, Main Roads 16 iii, March 1951, 75-81.
54 Harrison, op cit, pp.23-24
55 Antill, op cit, p..28
56 *The Shoalhaven News* April 12 1944

low in 1946 with milk supplies falling by some thirty percent.[57]

The widespread use of technology by the Second World War is reflected in a farm clearance sale in 1944 at Eerie Farm, Burrier. Items included a two-unit Dangar milking machine, fourteen milk cans, a copper, a cream bucket, strainers, two small milk vats and a wash up vat. The milk from up to 52 cows was treated by a 50 gallon P.H. Alpha Daisy Separator with power pull, one milk cooler and numerous tanks and sundry items.[58]

As the size of herds increased in the post war period to cater for the increased demand for dairy products the design of dairies became more important. The wages of rural workers also grew although the size of families decreased. Mechanisation became more widespread helped by the spread of electricity to rural areas. By the 1950s the use of milking machinery was economical even for a herd with only ten cows. However the number of small herds declined in contrast to the number of large herds since those farmers remaining in the industry increased the size of their herds. Increased demand for fresh milk, diversification of dairy products and the increased herd size led to rationalisation of the process with bulk milk increasingly collected by tankers. Pigs lost their importance as secondary sources of income with the loss of skimmed milk from the factories.[59]

During the 1970s advances in agricultural sciences had pushed production in some areas of farming to new highs. This was not the case with the dairying industry which was already depressed in some areas to the point of poor subsistence levels.[60] The looming threat of the Common Market and the European Economic Community were realised in the 1970s with the loss of the established Commonwealth markets. Dairy companies were forced to look towards the Asian market. Butter was not a saleable commodity in much of Asia and for the first time factories were forced to reassess their diversification and look at different products. Overlying this process was the changing nature of the Australian market which impacted on both the nature and scale of dairy farming. This process was reflected in a gradual decline in the use and maintenance of the now many redundant dairy buildings, yards feedstalls and silos which marked the growth and success of the dairy industry.

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57 Antill, op cit, p.28

58 *The Shoalhaven News* April 12 1944

59 Cassidy, op cit, pp.47-48

60 W J Hudson in F Crowley [edit], op cit, p.535

3.0 THE SITE SURVEYS : MILTON/ULLADULLA AND KANGAROO VALLEY DAIRY INDUSTRY SITES

3.1 PREAMBLE

The site survey was conducted by Ms. Meredith Hutton, assisted by Mr. Mark Bannenberg, over a period of six days in June 1997. Funding did not allow for return visits, to optimise recording conditions and light for photographic work. In spite of pre-arrangement of site visits by phone, several owners denied access to their properties, with the result that these properties have not been recorded and added to the survey.

3.2 LIST OF SIGNIFICANT SITES ASSOCIATED WITH THE DAIRY INDUSTRY

The following dairy farms were surveyed and included in the Inventory of Sites. The bracketed reference to each site refers to Milton/Ulladulla or Kangaroo Valley. The reference number is derived from the Shoalhaven City Council Heritage Study [completed by Peter Freeman Pty Ltd 1994-1997].

Milton -Ulladulla Area

Sunny Vale, Croobyar Creek Road, Milton [MU010]
Narrawilly, Princes Highway, Milton [MU011]
Claydon Park, Croobyar Road, Milton [MU036]
Melrose, 150 Princes Highway, Milton [MU051]
Kendall Dale, Princes Highway, Yatte Yattah [MU060]
Kirmington & Monolith to Henry Kendall, West of Kendall Dale, Princes Highway, Yatte Yattah [MU061]
Yatte Yattah Separating Station, Princes Highway, Yatte Yattah [MU064]
Whoppindally, Princes Highway, Milton [MU065]
Woodstock Cheese Factory, 170 Woodstock Road, Milton [MU067]
Old Croobyar Farm, Croobyar Creek, Milton [MU070]
Mimosa Farm, 40 Little Forest Road, Milton [MU072]
Woodlands, 98 Little Forest Road, Milton [MU073]
Avenal, Evans Lane, Milton [MU075]
Milton Butter Factory, Croobyar Road, Milton [MU112]

Kangaroo Valley

Clinton Park, Clinton Park Road off Wattamolla Road, Wattamolla [KV029]
House, 679 Upper River Road, Kangaroo Valley [KV037]
Cavan, Cavan Road, Barrengarry [KV042]
Barrengarry Butter Factory, Cavan Road, Barrengarry [KV043]
Ascot, 49 Upper River Road, Kangaroo Valley [KV050]

The following properties were identified for further investigation, but were not visited because access was not granted or the owner could not be contacted:

Loch Leven Farm, Wilfords Lane, Milton [MU014]
Woodstock, Woodstock Road, Milton [MU020]
Kilfeacle, Little Forest, Milton [MU027]
Boolgatta House and Barn, Princes Highway, Yatte Yattah [MU062]

3.3 CURRENT THREATS TO HERITAGE SITES ASSOCIATED WITH THE DAIRY INDUSTRY

Both Milton-Ulladulla and Kangaroo Valley are experiencing similar trends in the dairy industry, including the amalgamation of properties and the resulting transfer and amalgamation of milk quotas. Larger herd sizes and higher milk production bring economic benefit, when set against smaller work forces. In Milton the remaining ten dairy farms together produce more milk for the Bomaderry Depot than ever before [eg Whoppindally, Croobyar Farm, Milton]. Many owners of former dairy properties have diversified into beef cattle and are gradually subdividing and selling their land [eg Cavan, Kangaroo Valley].

As a result, many dairy structures are left idle, sometimes fully equipped [eg 679 Upper River Rd, Kangaroo Valley], but generally gutted, with equipment being sold or transferred to a modern structure [eg Clinton Park, Kangaroo Valley]. Other structures are semi-utilised for storage, while others have been converted for use by beef cattle [eg Ascot, Kangaroo Valley; Kirmington, Milton]. Other dairy structures have been converted for accommodation [eg Mimosa Farm, Milton].

Most of the disused structures are not maintained and many more still have been demolished. Of concern are the remnant early structures and complexes, which illustrate the evolutionary development of dairying processes. These are now redundant and some are on the verge of destruction through lack of maintenance. These structures represent a valuable historical resource [eg Old Croobyar Farm, Milton; Sunny Vale, Milton]. In additional, the house at 679 Upper River Rd, Kangaroo Valley and the 19th century house complex at Clinton Park, Kangaroo Valley, are of high significance and are in need of urgent maintenance and recording.

3.4 TYPICAL FEATURES OF DAIRY FARMS IN THE ILLAWARRA REGION

The dairy farms of Milton-Ulladulla and Kangaroo Valley have revealed a number of features, structures and landscape elements, which are typical of dairy farming in the Illawarra Region as a whole.

The Milking Process

Until the late 19th century, the milking process was a two structure operation, requiring milking bails for hand milking and a separate dairy [creamery]. A third structure was introduced when separate feed stalls were added in a bid to maintain milk production during winter and droughts. After the 1960s it has become common to feed solids to the cows during milking. From this time, the feed stalls, with a laneway between the bails, stalls and chaff cutting facilities, have became redundant.

The separate dairy was no longer required on most properties, once the hand operated separator was readily available. Alternatively separating stations were built throughout the district by c.1900. Typically the dairy became a small mechanical separating room, later a can storage facility and eventually a refrigerated vat room, attached to the milking bails. In time the bails also functioned as the feed stalls. The entire milking process has therefore evolved until it could be conducted within the one milking shed.

A number of properties retain the hand milking bails, built prior to the introduction of winter feeding. These include Woodlands, Avenal and Kendall Dale. The bails at Melrose have collapsed, while a concrete floor with gutter and remnant posts survives at Old Croobyar Farm and Sunny Vale. Concrete floors probably survive at Whoppindally, Cavan and Mimosa Farm.

Corn stores were built to store corn [maize], which was used as cattle feed to maintain milk production during winter and droughts. The stores were built on piers to protect the corn from moisture and pests. Examples survive at Kendall Dale, Cavan and Clinton Park. Loft fodder storage areas survive at Sunny Vale above a stable and pig sty, at Kendall Dale above the hand milking bails and at Whoppindally above the feed stalls.

Chaff cutting facilities survive at Cavan, Clinton Park, Ascot, Whoppindally, Narrawilly, Avenal and Kendall Dale. Feed stalls remain in varying stages of dilapidation at

Whoppindally, Kendall Dale, Narrawilly, Sunny Vale, Mimosa Farm and Ascot.

Concrete silos of post 1940s construction remain at Kendall Dale, Whoppindally and Narrawilly. These properties are in close geographical proximity and have flat cropping land adjacent to creeks. No early silos, constructed between the 1910s and the 1930s, were found on the surveyed properties, although they survive elsewhere in the Illawarra.

Walk-through milking bails, where solids were fed to the cattle during mechanical milking, are present at all properties though not all were intact. Those still in use have had the timber bails replaced by galvanised piping, a change dating after 1940, while some have been converted to herringbone design. A number have the registered dairyman name or quota number on a plate above the milk room door, again a feature dating after 1940. These survive at Claydon Park, Clinton Park, and 679 Upper River Road.

Separate dairies [creameries] are nearly always located close to the house, since it was the responsibility of the women. They were also located near access roads, so the products could be taken to the wharf, butter/cheese factory or other market. Most dairies are close enough to the milking shed for the milk to be carried in open pails, which were easily spilt, but far enough away to minimise the absorption of odours by the milk as it cooled. An exception to this rule is Old Croobyar Farm, where the bails are 78-80 metres away from the dairy and there is evidence of a trolley track between the bails and dairy. The dairies were designed for cleanliness with interior linings and whitewashed surfaces. They were also designed to maintain an even, cool temperature [10-11 degrees Celsius was recommended], prior to the advent of refrigeration, again because the milk absorbed odours and would go off quickly in the heat, but also to allow the cream to set.

Separate dairies [creameries] fall into two categories. The first category, the early milk settling rooms, built during the mid-late 19th century, have a separate butter and cheese making room. The milk was set out in broad shallow dishes to allow the cream to float and be separated for use in butter and cheese. These structures had to be separate from the milking bails and kept cool because warm milk absorbs odours.

These structures were constructed from coursed random rubble, for example, at Old Croobyar Farm and Avenal, in brick at Sunny Vale, or weatherboard at Whoppindally and Mimosa Farm. They have encircling verandahs, voluminous

roofs [now corrugated iron, over shingles or shingle battens], ventilation louvres, cement floors, lined interior walls and ceiling. Timber lining boards are found in the weatherboard dairies, while rendered walls and lining boards or wattle and daub are found in the brick and stone structures.

The second category of separate dairy is a milk room of post 1890s date, where the milk was mechanically separated and the cream taken to the butter and cheese factories, while the whey was fed to pigs on the farm. Alternatively, the milk was stored in cans until it was transported to the factory for separating. These dairies are small weatherboard structures, with a verandah across the entrance. They have deep concrete floors, a small window in the southern elevation, and interior wall and ceiling linings. Examples survive at Woodlands and Claydon Park. The exception is a stone dairy at Sunny Vale, built in 1918, which does not have interior wall or ceiling linings and has a line shaft to operate the separator.

Pigs [pork and bacon] were a common sideline for dairy farmers. The pigs could be fed whey, the waste product of butter and cheese. This practice was prohibited when the areas were included in the Sydney Whole Milk Zone in 1940. The only standing pig sty [now used for calves] is at Sunny Vale, which uses drop log construction. A pig paddock was operated at Cavan, where the pigs were fed whey from the Barrengarry Butter Factory, and a yard for pigs was located beneath the coral trees at Mimosa Farm and beneath the Small Leaf Fig tree at Melrose. There are remnant concrete foundations of pig sties at Whoppindally and Woodlands. The feeding of whey to pigs was outlawed during the 1960's and so the rearing of pigs became a specialist industry rather than a sideline of dairying, consequently none of the farms visited continue to keep pigs.

The butter and cheese factories, together with separating stations, have large interiors, which have led to their reuse for a number of activities. All have had their equipment removed to allow subsequent occupancies. The Yatte Yattah separating station, used for many years as a plumbers workshop, was not seen internally. The southern rooms of the Woodstock Factory have been partially demolished, but otherwise the structure of these three factories is substantially intact. The remnant structures of the Barrengarry Butter Factory predate the other factories by approximately 25 years and the site has not been reused. It is therefore a potentially valuable archaeological site of an early centralised dairy factory.

Landscape Features

Common landscape features include:

- **House orientation**. Most houses face east, with a smaller number facing north, to take advantage of the morning sun and coastal outlook, rather than being oriented toward a road.
- **Landmark plantings, wind breaks, shade trees, fruit trees**. Many farms have landmark plantings of Moreton Bay Fig and Illawarra Little Leaf Figs. Common or typical wind breaks species include pine or coral trees. Shade trees again include coral trees, while citrus trees are common in the house garden and apple, plum and pear trees in an orchard.
- **Provision for water supply**. The earliest properties rely on creeks and springs, though this is not a reliable dating tool for the buildings at each site; Croobyar Farm, Kendall Dale, Clinton Park, and 679 Upper River Road are sited close to a creek. Cavan, Ascot, Avenal and Milton Butter Factory have natural springs and Sunny Vale, Mimosa Farm, Kirmington, Woodstock Cheese Factory and Melrose have in ground and above ground tanks.
- **Fences**. Fencing is a typical and common feature of dairy farms, but is subject to repair, replacement or removal as a result of decay, fire, changed property boundaries or land use Mimosa Farm has a pile of recently removed fence posts that were in excess of 40 cm diameter. The thickness of the posts tends to suggest a greater antiquity, since posts of this diameter are no longer readily available. Timber post and rail fences survive at Sunny Vale, and remnant sections of early fences exist elsewhere, although barbed wire and lighter weight timber posts or star pickets are most common. There were no stone wall fences on the properties surveyed.

4.0 THE PASTORAL LANDSCAPES OF THE SHOALHAVEN DAIRY INDUSTRY

4.1 PREAMBLE

The 'Pastoral Landscapes' within the Milton-Ulladulla and Kangaroo Valley areas of the Shoalhaven represent identifiable **cultural landscapes** which have significance in their own right. These cultural landscapes have identified within the Shoalhaven City Council Heritage Study [1994-1997]. The inventory entries for the Milton-Ulladulla and Kangaroo Valley cultural landscapes are appended to this Volume [refer Appendix 1, Volume 1, this Study].

Appendix 1, Volume 1, Cultural Landscape Entries from the SCC Heritage Study

4.2 MILTON-ULLADULLA : PASTORAL LANDSCAPES

The structure of the dairying landscape and industry at Milton and Ulladulla developed in response to the management and sub-division of the Kendall, Warden and Wason family land grants. The Croobyar Estate south of Croobyar creek was a land grant of 1,020 acres made to Alexander McCleay. McCleay died in 1848 when his estate was purchased by David Warden of Ulladulla. W.H. Wason's grant of 2,560 acres occupied the land south of McCleay's grant and was bordered to the east by Burrill Creek and Burrill Lake. North of Croobyar Creek Alexander Park, H.P. Dutton's grant of 2,560 acres, occupied the upper reaches of Yackungarra Creek, and was bordered by Croobyar Creek to the south.

By the 1860s the sale of land and introduction of Free Selection [1861] had impacted dramatically on the landscapes surrounding the established holdings and the new private township of Milton [1860]. Milton in its strategic location on the Southern Road linking Yatte Yattah with the harbour at Ulladulla was ideally placed to benefit from the rapid growth of the dairy industry.[61] The route to Bateman's Bay was soon re-defined by a mosaic of land holdings south of Milton. Little Forrest Road and Croobyar Road were confirmed in 1864 in response to the need to provide access to outlying selections which were mostly between 35 and 50 acres in area. Outlying selectors included the established Kendall, Millard, Wason, Warden and Clayton families and newcomers such as M H Hobbs [Avenal] and Patrick Donohue [Kilfeacle, Little Forrest]. By 1865 Ulladulla was exporting 2,500 25-kilo kegs of butter a year.[62]

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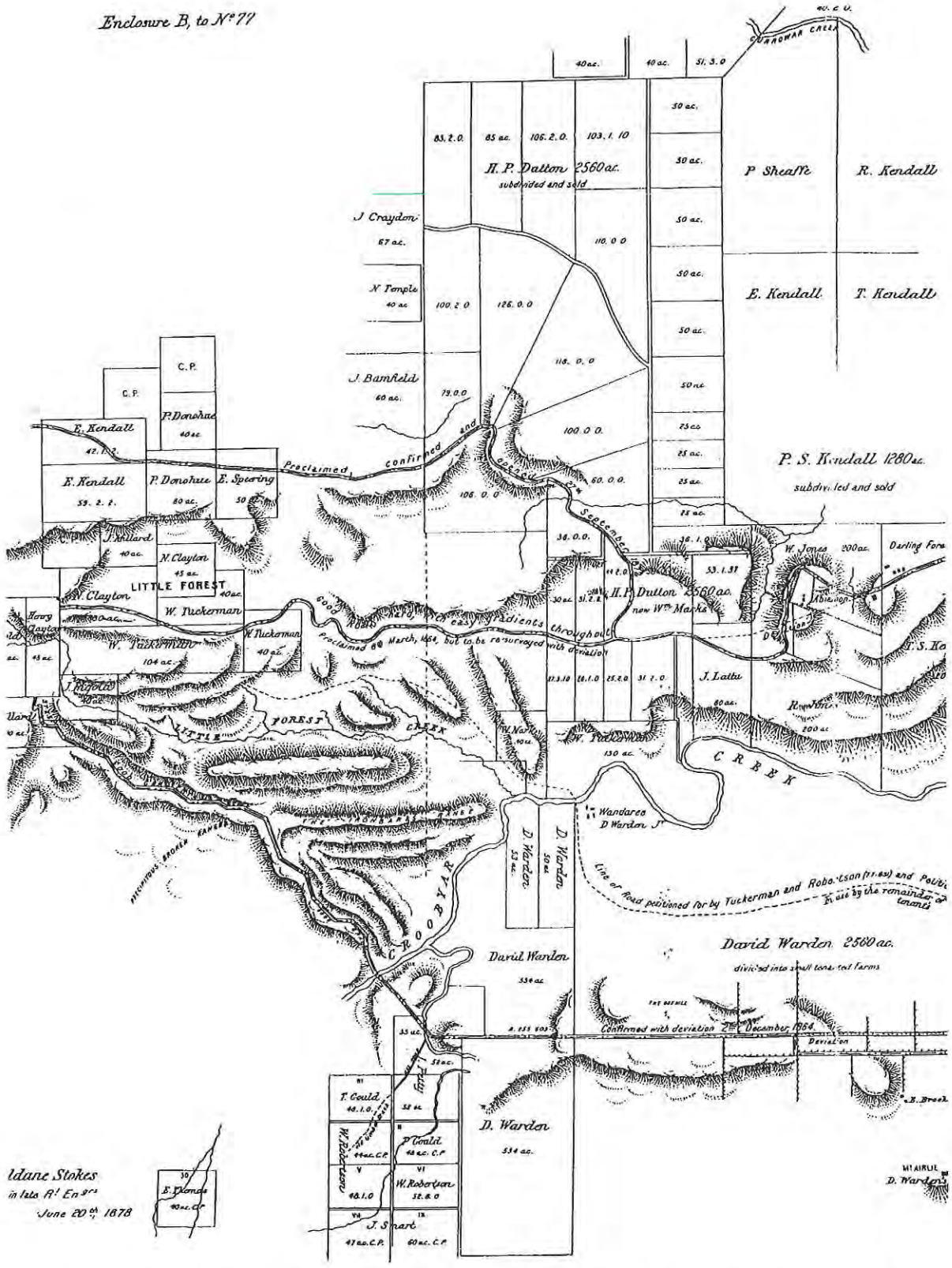
61 *Nulladolla 1988*, Ulladulla 1988 p.17

62 Milton-Ulladulla DHS, *Nulladolla*, pp.35-37



Croobyar and Little Forest in 1878, mapped by O.H. Stokes.
Source:
Votes and Proceedings, Legislative Assembly NSW, 1878-9, V. Appendix E after p.922

In 1863 William Walter Ewin had purchased part of Wason's grant building 'Woodstock House' in 1878 around an earlier stone structure.[63] Woodstock and the pattern of land holdings and occupancy was clearly recorded by O.H. Stokes in June 1878. Dutton's estate, now owned by W Marks, was

63 J Ewin personal communication 1996

sub-divided into farms of between 25 and 126 acres; another 400 acres, purchased by W and R Jones, Abialbon [now Woodlands], flanked T.S. Kendall's 320 acre holding. T.S. Kendall had earlier sold his estate to his brother John Kendall. The estate was inherited in 1873 by John Kendall's sons; William Rutter Kendall built Darling Forest [now Mimosa Farm] in 1873. David Warden's Croobyar Estate, sub-divided into 15 small tenanted farms, was dominated by his Mt Airlie residence, erected 1868/69, to replace the stone house on Croobyar Creek, Old Croobyar Farm, built c.1850. [Winter] David Warden Jnr occupied 'Wandaree' on Croobyar Creek, also one of the first farms on the Croobyar Estate. The sub-division of the estate was completed in 1885 with the death of David Warden Snr; Croobyar Estate was sub-divided between the four sons. Alick Frederick Warden inherited Sunny Vale, Charles Forfar Warden inherited Wandaree [he later bought 'the Hut']; and Winter David Warden [Old] Croobyar Farm. David Jnr later bought Mt Airlie from his brother Arthur Airlie Warden who also inherited Bonnie View.[64] Bonnie View, Wandaree, Mt Airlie and Old Croobyar Farm were rented out in addition to the established tenant farms.

By the 1880s many families had already erected or were living in permanent buildings on their farm properties. These substantial houses, including, among others, Applegarth, Danesbank, Riverview, Sunny Vale, Lochleven, Narrawilly, Boolgatta and Eyrie Bowrie were a response to cultural needs but also an expression of wealth generated through dairy farming. The prestigious Boolgatta House was built in 1870 for James Warden, cousin of David Warden of Mt Airlie.[65] Eyrie Bowrie was built for prominent local citizen Roger Seccombe in 1866. Roger Seccombe was one of the first to diversify his interests and introduce factory processes when he established a condensed milk factory on his property at Milton by 1873. Although not entirely successful Seccombe paved the way for new ideas.[66]

The 1880s and 1890s were a boom period of innovation and enterprise. Darling Forest, renamed Mimosa Farm, was purchased in 1882 by English blacksmith James Smart. Large brick lined cisterns were built to collect rainwater for the dairy. Over 100 cows were milked with butter and cheese produced in the famous Mimosa Brand timber butter factory

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64 J Ewin, *Meet the Pioneers, Early Families of the Milton-Ulladulla District*, 1991 pp.223-227

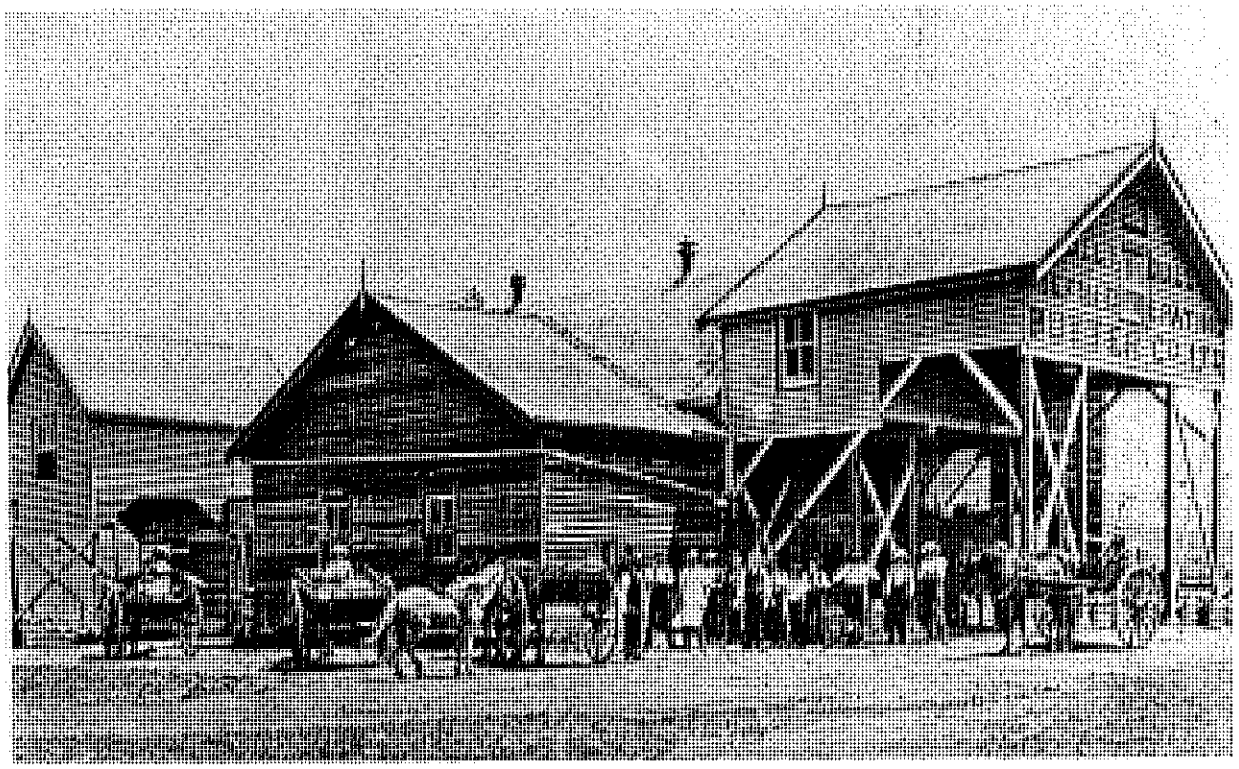
65 A C Ali, *Illawarra Region Historical Buildings and Sites*, Department of Environment and Planning 1981

66 *Nulladolla*, M-U Historical Society, 1988 p.92

for the Sydney markets. Trees were planted in rows to provide shelter for pigs and cows.[67]

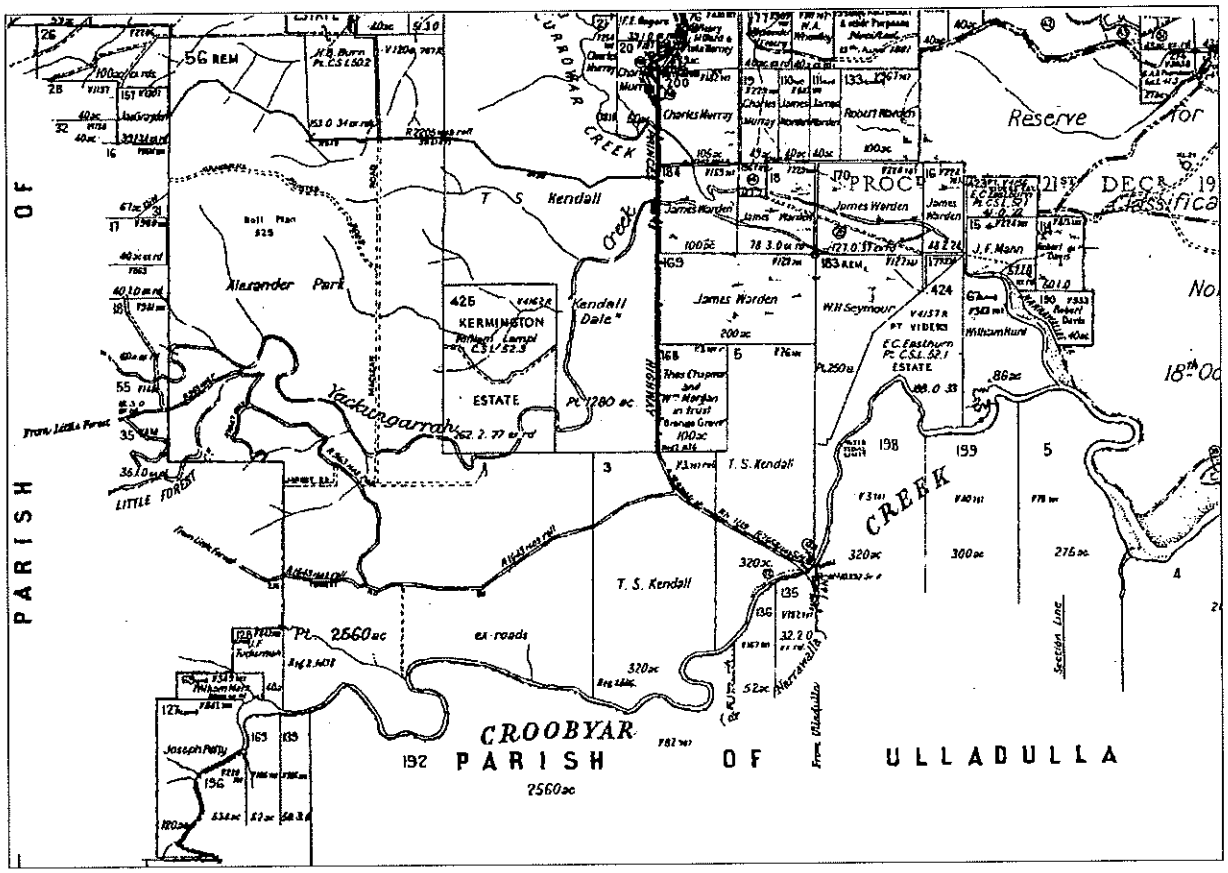
In 1891 first prize for a small farm over 100 acres was won by Mr W H Wilford's Lochleven property of 203 acres near Ulladulla. Stock included 56 cows, six working bullocks, six head of cattle, seven horses and forty pigs. Crops included pumpkins, maize and 'planter's friend' or 'Ramie', which was used as early as 1870 as an alternative to lucerne and for the trial production of sugar.[68] The farm was equipped with six milking bails in a substantial shed with a store over them next to the stone paved stock yards. Significantly there was storage for 60 tons of hay in an iron roofed barn. Water for the large stone dairy [with concrete floor and shingle roof] was stored in two underground rendered brick cisterns. The staple farm product was butter. In contrast the Sunny Vale farm of Mr A F Warden on 297 acres had more advanced features in 1891. A large barn 60 feet by 25 feet, stables, two workers cottages and a model dairy with 'modern machinery' driven by steam power, including a Finlayson's square churn. The dairy building had brick walls, cement floor, shingle roof and a verandah all round. Although only 150 of the 297 acres was cleared the farm produced 1,600 pounds of butter per month in summer and 700 pounds of butter per month in winter.[69]

The Ulladulla Butter Factory, opened in 1895.
Source:
Morrissey, op cit, p.25



67 Personal communication Mrs Edna Brook nee Smart 18/8/95
68 *Town & Country Journal* April 1870
69 Dowling, op cit, pp.35-36

By 1894 the dairy at 'Bonnie View', a Warden property of 353 acres, was equipped with a cream separator to process the milk from 60 to 70 cows. The occupier of Bonnie View, a Mr Kennedy, also rented the nearby Mt Airlie farm at 15/- per acre from the Warden family. In contrast this farm of over 700 acres still used milk dishes for setting out cream for butter making.[70] As early as 1872 the Mt Airlie dairy, a stone building with covered in stone walled verandah, was equipped with two double rows of racks over the cream pans, cast iron 'bricks' to ventilate the pans [communicating with square openings at the windows sills outside], a horse driven box churn capable of turning out one-and-a-half hundredweight of butter at a time and a box drain to convey sour milk to the well drained piggeries which held 200-300 pigs. The milking shed covered twelve bails.[71]

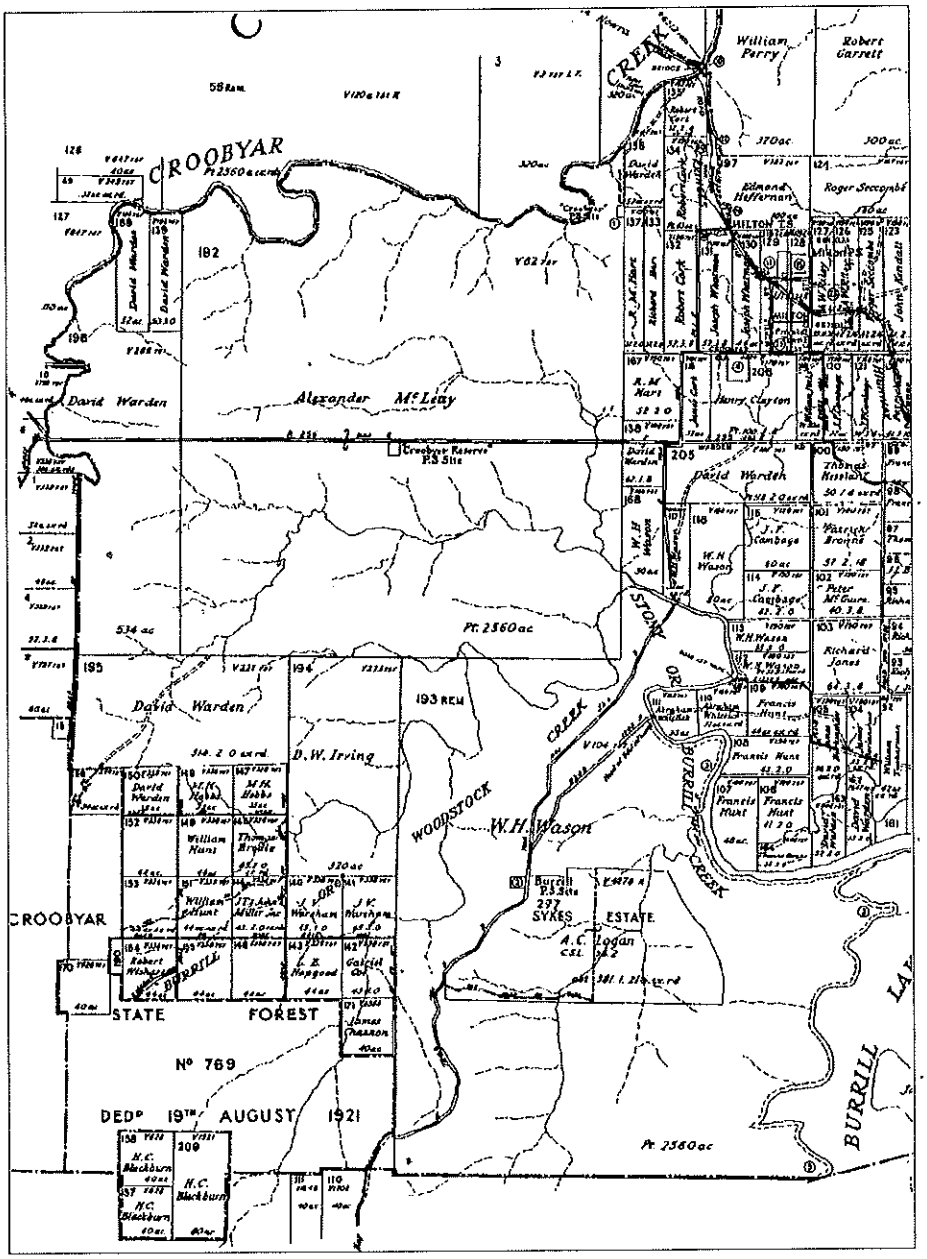


Parish map of Conjola, **1956.**
Source:
NLA, Canberra

The Ulladulla Refrigerating Butter Co Ltd operated in Whatman's paddock, Milton from 1895 as the Milton district's first dairy factory.[72] In December 1906 the Milton butter factory produced 62,839 pounds of butter.[73] The factory was rebuilt in 1927 but closed down in 1942 when the

70 *The Nowra Colonist* 18 April 1894
71 Unnamed newspaper dated 1872 in Nowra Public Library
72 Photo in *A Pictorial History of the Shoalhaven*, N·P Morrissey, Kiama, 1979 p.25
73 *The Shoalhaven Telegraph* 16 January 1907

area became part of the Sydney supply zone.[74] The Yatte Yattah Co-operative Creamery was established in 1896, operating until 1927 when the building was replaced by the present structure. In 1929 the factory added cheese production to its output, operating as the Yatte Yattah Cheese factory from 1935 until its closure in 1942.[75] A small factory erected on 'Woodstock' in 1909 to produce butter and cheese was rebuilt in 1927. Purchased in 1934 by Dairy Farmers Co-operative this factory also closed in 1942 due to the inclusion of Milton in the Sydney Supply Zone.[76]



Parish map of Ulladulla, 1956.
Source:
NLA. Canberra

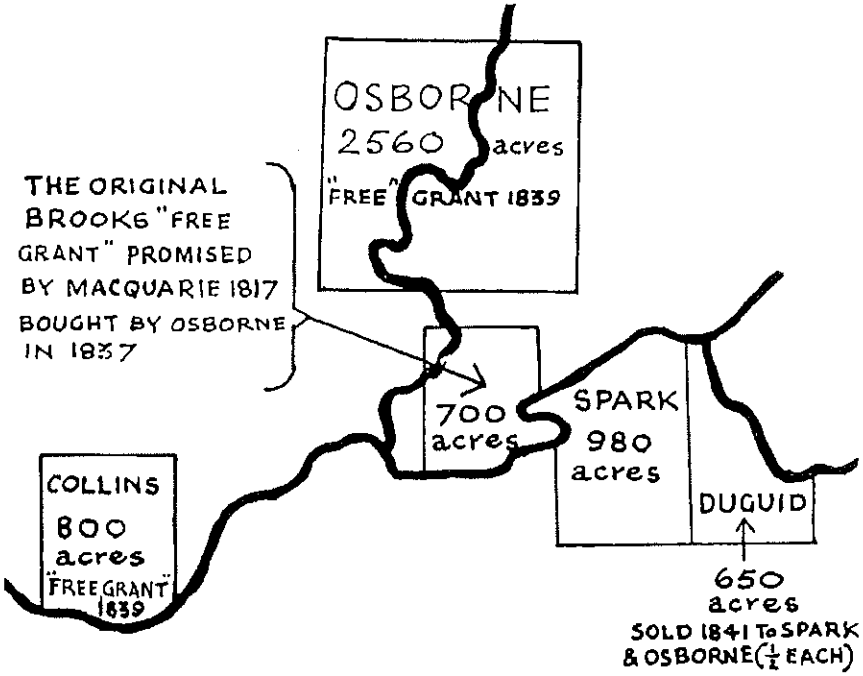
Cheese and butter factories stayed in production longer in the Milton-Ulladulla area since they were further from the

74 *Nulladolla*, Milton and Ulladulla Historical Society pp?
75 *Nulladolla*, Milton and Ulladulla Historical Society pp?
76 *Nulladolla*, Milton-Ulladulla Historical Society p.39

metropolitan area. The provision of good road links with Nowra and inclusion in the Sydney Supply Zone during the 1940s coincided with the virtual disappearance of the Illawarra Steamship Company. The manufacture of dairy products disappeared in common with the other dairy farming areas through the centralisation of dairy factories in Nowra. Although many people have subsequently left the land, milk production has remained high with the amalgamation of smaller properties. In recent years the loss of dairy farms has been reflected in a proportionate increase in the number of beef and weaner producing properties and the loss of redundant structures from the landscape. This phenomena reflects the general pattern throughout the dairying areas of Australia.

4.3 KANGAROO VALLEY : PASTORAL LANDSCAPES

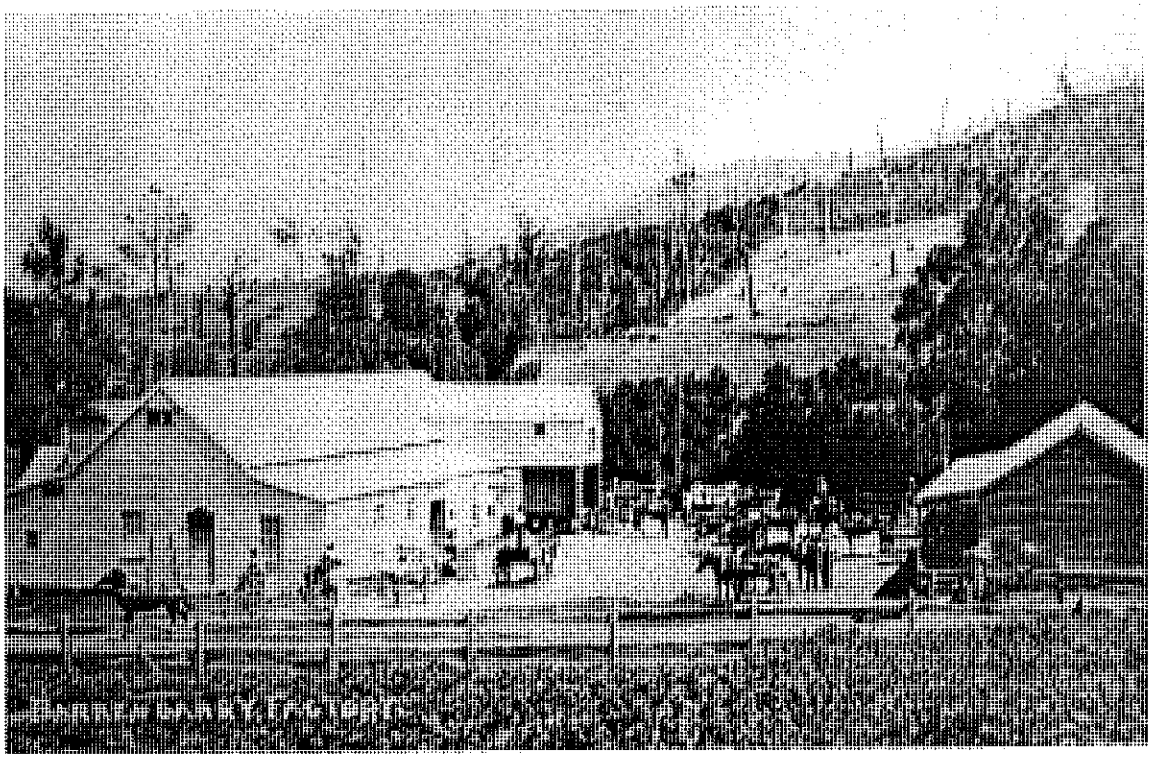
During the 1830s there was an unprecedented boom in land speculation in NSW. Irishman Henry Osborne acquired his first land in Kangaroo Valley, 2,560 acres, at Barrengarry in July 1837 from his first initial land grant at Marshall Mount. In the same year he bought another land grant, also 2,560 acres, that of widowed Charlotte Brookes. Before he died in 1859 Henry Osborne had also purchased the 1,630 acres of 'Glenmurray' which included the grants made to Spark and Duguid. Collin's Bendeela land grant was eventually bought by William Gray in 1854.[77] The Barrengarry holdings of the Osborne family were to influence the economics and industrialisation of the dairy industry following Free Selection in 1861.



Kangaroo Valley grants pre-1840.
Source:
J. Griffith, *A History of Kangaroo Valley, Australia*, Kangaroo Valley 1978, p.22

77 Griffith, op cit, pp.22-31

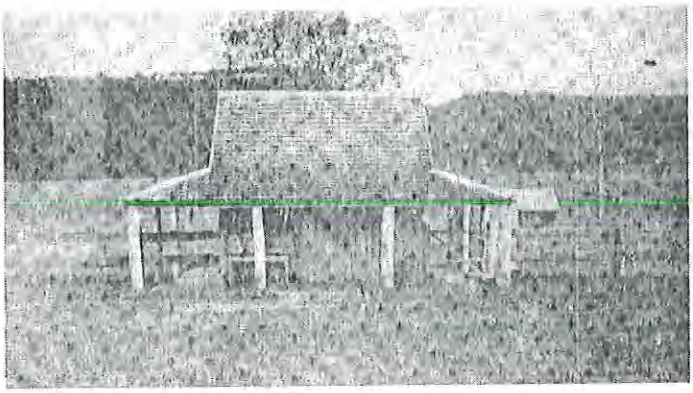
Dairy production, with the exception of Charles McCaffrey in 1846, appears to have been limited to local consumption until the advent of Free Selection in 1861. From 1862 to 1870 selectors flocked to the valley taking up small blocks of land around the edges of the Osborne estate and on the better land in the adjoining valleys. Daniel McIlwraith of Kiama, one of the earliest, was successful in securing good blocks of land adjacent to Osborne's Barrengarry holding.[78] In 1863 William Gray sold his Bendeela holdings to John Milligan. By 1871 Milligan was milking 100 cows daily with dairying well established throughout the valley.[79] Dairy production in the valley depended on both free selectors and tenant farmers on the larger estates. The death of Henry Osborne in 1859 had resulted in the sub-division of the Barrengarry estate, including Glen Murray, under sons Alick and Ben Osborne. By 1868 the estate had been divided into farming tenancies; in 1889 there were 47 paying [renting/leasing] tenants on Barrengarry.[80] Dairy products from each of the small farms were taken over Cambewarra Mountain to Bomaderry wharf or to the hardwood wharf on Broughton Creek to meet the steamer from Sydney.



The Barrengarry Butter Factory, c1890s.
Source:
J. Griffith & P. Price [eds], *Kangaroo Valley Historical Photographs*, KVHS, 1989

The productivity, and population, of the valley had peaked by 1895 following the introduction of the cream separator to the valley in 1888. Until 1888 the twice daily milking routine, creaming in shallow pans and churning to produce butter

78 W A Bayley, *Kangaroo Valley*, KVHS, 1953 p.18
79 Griffith, op cit, p.31
80 Ibid, p.33



Nugent's Dairy, c1900.
Source:
J. Griffith, *A History of the Kangaroo Valley, Australia*, KVHS, 1978, p.46

relied on a local workforce and large families. By the turn of the century Kangaroo Valley had five butter factories employing small numbers of people. The first was at Beaumont [July 1888], at the eastern end of the valley near Devil's Glen, the second at Barrengarry was begun in December 1888.[81] The factory at Barrengarry was built on land held by Daniel McIlwraith and Alick Osborne. Shares were taken up at a meeting for the Barrengarry Dairy Company on 10 December 1888. The factory was completed and in operation by February 1889.[82] Other factories were established at the Upper Kangaroo River [Kangaroo River Company September 1890] and at Wattamollah on Brogers Creek [June 1894]. The Upper Kangaroo River factory later operated at Glenmurray as the People's Dairy and Manufacturing Association Ltd. The Wattamolla Factory closed in 1901.[83] By 1925 the last factory had closed.

Production figures for these factories give a good indication of the development of the rural landscape. In December 1891 the Barrengarry Dairy Co received 80,100 gallons of milk at 3d/gallon and produced 31,808 lbs of butter; skimmed milk was returned free of charge to farmers to feed their pigs.[84] In 1897 the Barrengarry factory produced 127 tons; in 1909 the Beaumont factory produced 31 tons and in 1918 the factory at Glenmurray produced 17 tons.[85]

The Osborne monopoly of the valley came to an end in September 1910 with the auction of the Barrengarry estate. The land was divided into 16 farms ranging in size from 17 acres up to the 628 acres associated with Barrengarry House. Disposal of the estate was not completed until 1925.[86] Among

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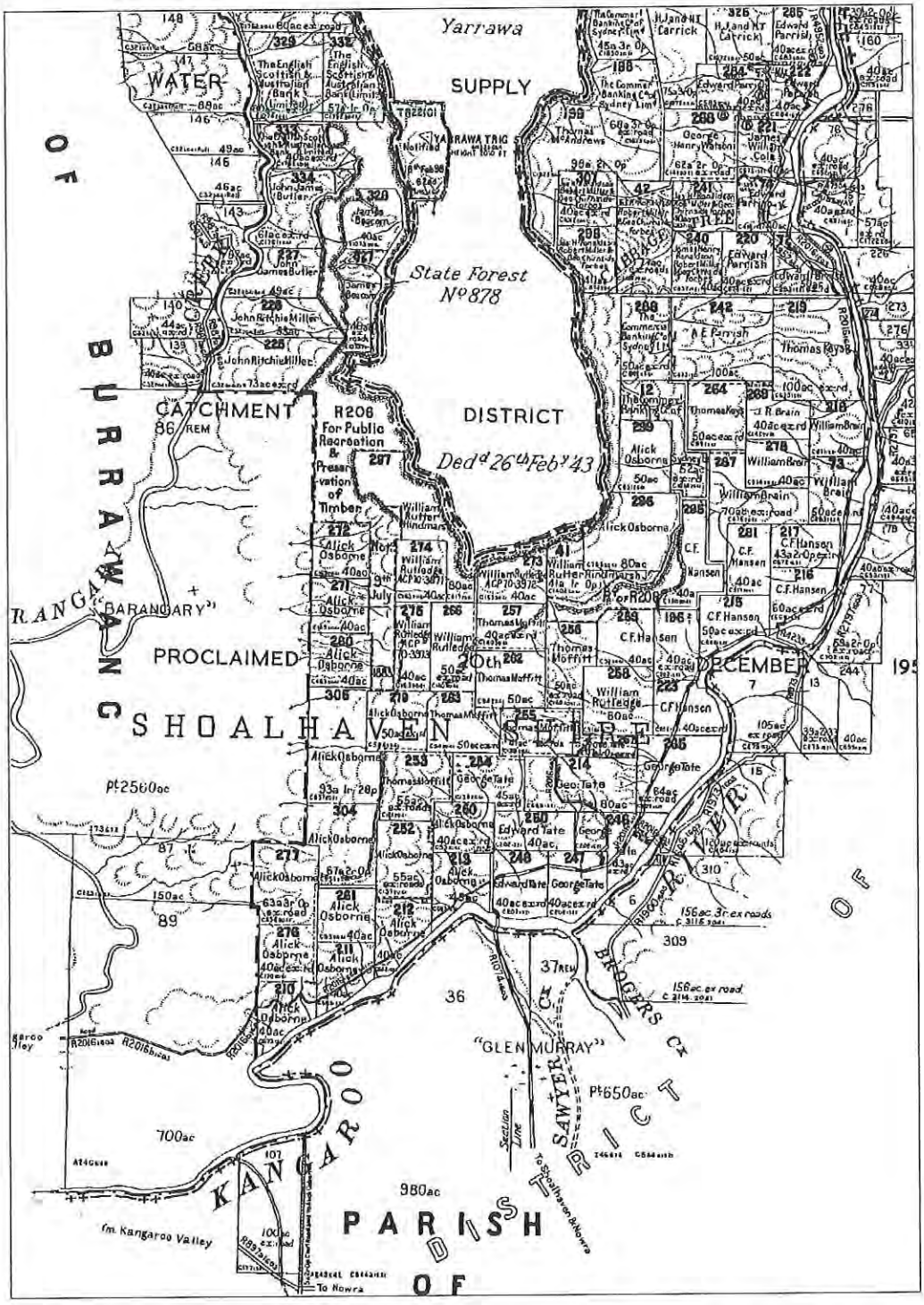
81 J Griffith and P Price, KV Historical Photographs, KVHS, 1989, plate 17
82 Bayley, op cit, p.37
83 Griffith, op cit, pp.55-57
84 *The Nowra Colonist*, 13 January 1892
85 Griffith, op cit, p.55
86 Griffith, op cit, p.55

the properties was 'Cavan' purchased in 1916 by the Good family from County Cavan, Ireland.[87]

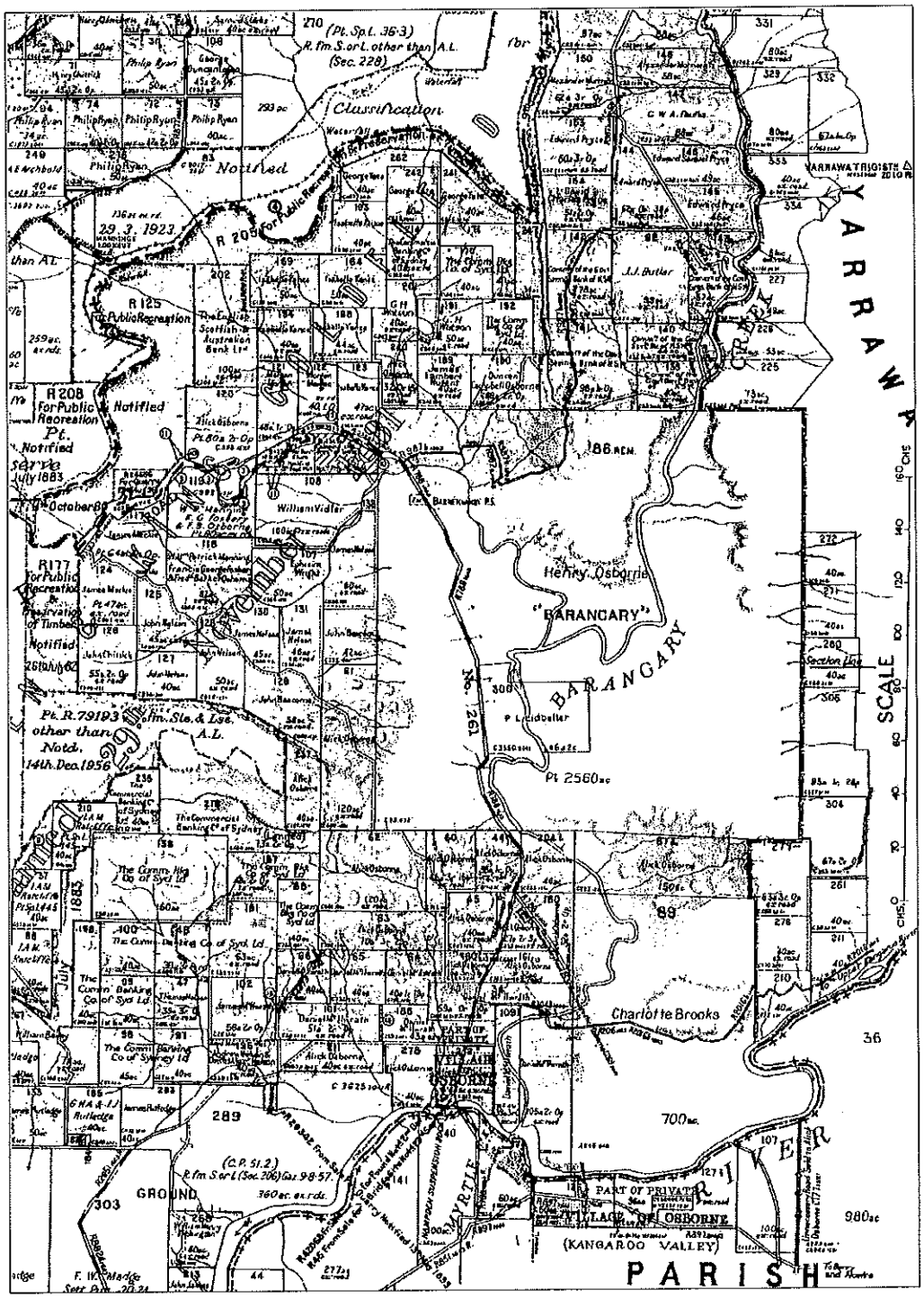


Parish map of Yarrawa, **1960.**
Source:
NLA, Canberra

Between 1908 and 1918 some 20 valley dairies closed down due to the impact of labour shortages caused by the First World War. The first milking machines in the valley were installed in 1919 on William Scott's property on Glen Murray Road.[88] Concrete silos, similar to those in the Nowra

87 Pers. comm. Doris Good 1996
88 Griffith, op cit, p.53

Catchment, as well as winter feed stalls were erected on the larger properties which had developed along the river flats between Kangaroo Valley Township and Barrengarry. During the Inter War and Post War years the population declined due to the movement of people to other areas stimulated by the growth of industry. The growth of coalmining in the Illawarra was one such centre.



Parish map of Burrawang, **1957**
Source:
NLA, Canberra

In 1951 the valley was supplying milk to the factories of the Nowra Dairy Co-op and the Berry Company; 116 farmers to the former company and 12 to the latter company. Over the

next 27 years these figures had declined to 22 and 3 suppliers respectively indicating the existence of only 25 operating dairy farms, many formed by the amalgamation of smaller properties.[89] The loss of dairy farms has been reflected in a proportionate increase in the number of beef and weaner producing properties in recent years, in line with developments elsewhere.

89 Griffith, op cit, p.83

5.0 ASSESSMENTS & STATEMENTS OF CULTURAL SIGNIFICANCE: THE MILTON / ULLADULLA & KANGAROO VALLEY DAIRY SITES

5.1 CULTURAL SIGNIFICANCE OF THE SITES

The significance of the subject sites will be assessed in general terms according to their cultural significance. The criteria for assessment adopted are those criteria prepared by the Heritage Office and Department of Urban Affairs and Planning, and which are published in the *NSW Heritage Manual.*.[90] These criteria are summarised below:

Nature of Significance

Historical significance [evolution and association]. An item having this value is significant because of the importance of its association with, or position in the evolving pattern of our cultural history.

Aesthetic significance [scenic/architectural qualities/creative accomplishment]. An item having this value is significant because it demonstrates positive visual or sensory appeal, landmark qualities and/or creative or technical excellence.

Technical/research significance [archaeological, industrial, educational, research potential and aesthetic significance values]. Items having this value are significant because of their contribution or positive contribution to an understanding of our cultural history or environment.

Social significance [contemporary community esteem]. Items having this value are significant through their social, spiritual or cultural association with a recognisable community.

Degree of Significance

Representativeness. Items having this value are significant because they are fine representative examples of an important class of significant items or environments.

Rarity. An item having this value is significant because it represents a rare, endangered or unusual aspect of our history or cultural environment.

Level of Significance

Local. Comprises items significant in a local historical or geographical context or to an identifiable contemporary local community.

Regional. Comprises items significant in a regional historical or geographical context or to an identifiable contemporary regional community.

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90 Heritage Office and Department of Urban Affairs and Planning. 1996. *NSW Heritage Manual.*

State. Comprises items significant in a state-wide historical or geographical context or to an identifiable contemporary state-wide community.[91]

5.2 TECHNICAL/RESEARCH SIGNIFICANCE AND ARCHAEOLOGICAL SIGNIFICANCE OF THE SITES

The term **archaeological significance** may be defined as the extent to which a site may contribute knowledge, not available from other sources, to current themes in historical archaeology and related disciplines.[92]

In any assessment of archaeological significance, several factors or criteria have to be taken into account. Appropriate questions include:

- Does the site contribute knowledge not available from other sources? In this respect, the preservation of the site, the availability of comparative sites, and the extent of historical documentation should be considered.
- Does this knowledge contribute meaningfully to current research themes in historical archaeology and related disciplines? The level of this contribution may be assessed on the same basis as other aspects of cultural significance, for example, locality, region or state.

It is clear that the determination of archaeological significance is closely related and, in fact, dependent upon the development of current research themes in historical archaeology. Research themes have been discussed in this study, thereby giving the historical archaeologist a framework or starting point from which future research and site assessment may proceed.

5.3 SOCIAL SIGNIFICANCE AND EDUCATIONAL OR PUBLIC SIGNIFICANCE OF THE SITES

It is also necessary to clarify the significance of a site in terms of its ability to 'demonstrate a way of life, taste, custom, process or function of particular interest.'[93] This factor was given greater emphasis by J. S. Kerr in the assessment of

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91 The above assessment criteria were extracted verbatim from Heritage Office and Department of Urban Affairs and Planning. 1996. Heritage Assessments. pp. 4-7.

92 This definition is based upon the following references; A. Bickford, & S. Sullivan, 'Assessing the research significance of historic sites', in S. Sullivan, & S. Bowdler, *Site survey and significance assessment in Australian archaeology*, Dept. of Prehistory, Research School of Pacific Studies, ANU, Canberra, 1984, pp. 19-26.; S. Sullivan, & S. Bowdler, *Site survey and significance assessment in Australian archaeology*, Dept. of Prehistory, Research School of Pacific Studies, ANU, Canberra, 1984, passim.

93 J. S. Kerr, *The Conservation Plan. A guide to the preparation of conservation plans for places of European cultural significance*, first edition, National Trust of Australia (NSW Branch), Sydney, 1982, p. 4.

cultural significance in the second edition of his book, entitled *The Conservation Plan.*[94] This may be described as its educational or 'public significance', and may be recognised as social significance under the current guidelines.[95]

The cultural landscape, the patchwork of human development, possesses this social significance, because of its educational value. The evidence provided by the physical remains complements historical documentation, but is often the only means whereby the ordinary member of the public may appreciate his or her surroundings.

Where an artefact, an archaeological feature or site only survives underground, it takes archaeological excavation to reveal its social or educational importance, as well as recover its archaeological significance. Providing the relics or sites are conserved in some way, then the social significance of the archaeological remains is recognised or is able to be recovered at some future date.

5.4 THE SIGNIFICANCE OF THE CULTURAL LANDSCAPE

Human settlement imposes on the landscape a distinctive pattern or patchwork of houses and other buildings, streets and roads, parks and reserves, communications and industry. This physical evidence enables an understanding of the landscape in terms of land use, sequence and nature of settlement and occupation. It complements the information that is available from historical research.

Thus all items in an inventory of sites possess **historical significance** as defined under current guidelines, although each will contribute in varying degree. The minimum degree of historical importance will be representative and the minimum level will be local. This means that at least an item will be important to the locality in terms of being representative of the nature of settlement. In many cases items may demonstrate a former use or continuity of use, thereby becoming important items in the historical landscape.

In as much as each item in an inventory contributes to an understanding of the human occupation and evolution of the rural or urban landscape, so too will it possess an educational role for the wider community. This is defined as **social significance** under current guidelines. Social

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94 J. S. Kerr, *The Conservation Plan.* op cit.

95 M. Pearson, 'Assessing the significance of historical archaeological resources', in S. Sullivan, & S. Bowdler, *Site survey and significance assessment in Australian archaeology,* Dept. of Prehistory, Research School of Pacific Studies, ANU, Canberra, 1984, p. 32.

significance may also extend to other values held by the community and placed upon the landscape or items within it, be they social, cultural, religious, spiritual, aesthetic or educational values.

5.5 THE HERITAGE SIGNIFICANCE OF THE SITES

A statement of significance was prepared for the Milton-Ulladulla and Kangaroo Valley Pastoral Landscapes and included in the Inventory of the Shoalhaven Heritage Study. Slightly amended statements of significance for these sites are suggested as a result of this study.

Milton-Ulladulla Pastoral Landscape [MU114]

Milton's pastoral landscapes are articulated by nineteenth century dwellings, dairy farm and commercial buildings, equipment, structures, landscape elements and plantings, which illustrate the historical settlement of this area as well as the evolution of the dairying industry. Buildings include examples of convict built structures, one and two storey Georgian style residences and vernacular forms which illustrate the archaeology of the dairying industry. Individual items are of **State, Regional** and **Local** significance. Important as a pastoral landscape which retains fine examples of the developmental phases in the dairy industry, it remains productive and has social value to Milton's community, in addition to its historic, research and aesthetic values. **Regional** Significance, i.e. the Illawarra Region.

Kangaroo Valley Pastoral Landscape [KV046]

Kangaroo Valley Pastoral Landscapes are important for their ability to illustrate the growth of the dairy industry following Free Selection and the sub-division of the large estates. The landscapes include examples of vernacular buildings, farm scapes, early churches and public schools, nineteenth century plantings, Victorian residences and a range of buildings designed by noted architect John Horbury Hunt for the Osborne family of Barrengarry which document settlement and land use patterns and the archaeology of the dairy industry. Important as a pastoral landscape which remains productive, the historic, social and aesthetic values of the Valley and its contributory parts have been recognised as intrinsic to the character of the Illawarra Region and acknowledged by both the local and wider community. These intrinsic values are reflected in the State significance of individual elements and the rarity of such rural ideals in the dairying areas of New South Wales. **State** significance.

6.0 CONSERVATION GUIDELINES AND RECOMMENDATIONS : THE MILTON-ULLADULLA & KANGAROO VALLEY DAIRYING SITES

6.1 PRINCIPAL ISSUES RELATING TO THE CONSERVATION/DEVELOPMENT OF THE SITES

The following issues are relevant to the current proposal to redevelop the subject sites:

- Heritage legislation and other external factors.
- The condition of the archaeological remains.
- The nature of the proposed redevelopment.
- The requirements for the conservation of the archaeological site.

These issues are considered separately below.

The NSW Heritage Act and Historical Archaeology

The *Heritage Act* contains various legal measures to protect archaeological resources.

Where historical research has revealed the location of historical settlement, experience has shown that the discovery of relics is highly likely once the soil is disturbed. When relics are revealed the Heritage Council must be notified. This may involve delay until appropriate arrangements can be made to record the archaeological remains. As a result, developers and others are normally advised that excavation permits must be obtained prior to undertaking works, which involve excavation or the disturbance of historic sites. In this way most delays can be avoided.

The NSW *Heritage Act* defines a 'relic' as:

> *any deposit, object or material evidence -*
> *[a] which relates to the settlement of the area that comprises New South Wales, not being aboriginal settlement; and*
> *[b] which is 50 or more years old*

Section 139 of the *Heritage Act* provides that:

> *A person shall not disturb or excavate any land for the purpose of discovering, exposing or moving a relic, not being a relic subject to a conservation instrument, except in accordance with an excavation permit.*

If a site is the subject of an order under section 130, an Interim Conservation Order, or a Permanent Conservation Order, approval for an excavation is required under section 60 of the *Heritage Act*.

If a site is not the subject of an order under the *Heritage Act*, an excavation permit is required, in accordance with section 140.

Section 146 of the *Heritage Act* requires that the accidental discovery of relics should be reported to the Heritage Council of NSW.

When an item of heritage significance comes under the ownership or control of a public authority, the authority is required to record it in a Heritage and Conservation Register, under section 170 of the *Heritage Act*. The purpose of the provision is to alert the authority whenever works are proposed, which might affect the item.

Apart from the Heritage Act, the requirements of all other legislation is outside the scope of this report.

Condition of Archaeological Remains of the Sites

The condition of archaeological remains on the subject site are described in the Summary within the field study report [Section 3.0 above] and within the Study Inventory [refer Volume 2 of this Study].

Proposed Development Threats

The current threats to the heritage sites associated with the dairy industry are described within the field study report [refer Section 3.0 above].

The Requirements for the Conservation of the Heritage Items

The conservation of the sites recorded in this study is essential, if physical evidence of the evolution of the dairy industry is to be retained for future generations.

The listing of these important sites will have several major advantages:

- The identification, assessment and listing of the sites will mean that Council and other bodies are made aware of the archaeological resources that survive in the rural landscapes.
- The ability to apply for heritage funding to conserve important listed heritage items will have a major impact

on the current situation, where low priority is generally given to redundant structures in the farm maintenance budget.

Conservation plans should be prepared for the most important sites, including Sunny Vale, Old Croobyar Farm, Avenal, Claydon Park and 679 Upper River Road. Detailed archival recording should be undertaken on the hand milking bails at Kendall Dale and Woodlands, and on the dairies at Whoppindally and Mimosa Farm. All remaining sites should be subject to detailed archival recording and conservation studies.

Many items of redundant dairy equipment are scattered around the properties, often left in the open. Ideally these items should be recorded, along with the archival recording of the dairy properties

The study has also identified the potential threat to dairy farming sites posed by the current proposals for a Milton By-Pass. This may affect sites like Whoppindally, Old Croobyar Farm and possibly others. The impact of the proposed road on the historical landscape should be assessed.

The site of the Barrengarry Butter Factory is within a subdivision currently on sale. The site should be subject to an archaeological assessment report prior to disturbance.

6.2 GENERAL POLICY RECOMMENDATIONS

The above issues relating to the conservation and management of the subject sites may be resolved by undertaking the following recommendations.

It is recommended that:

Conservation plans should be prepared for the most important sites, including Sunny Vale, Old Croobyar Farm, Avenal, Claydon Park and 679 Upper River Road.

Detailed archival recording should be undertaken on the hand milking bails at Kendall Dale and Woodlands, and on the dairies at Whoppindally and Mimosa Farm.

All sites should be subject to detailed archival recording and conservation studies, as funding allows.

The impact of the proposed Milton By-Pass on the historical landscape should be assessed.

The site of the Barrengarry Butter Factory should be subject to an archaeological assessment report prior to disturbance.

Heritage funding should be made available for the conservation and adaptive reuse of redundant dairy structures.

APPENDIX 1

SHOALHAVEN CITY COUNCIL
CONSULTANT BRIEF
for the preparation of a study covering the archaeology of the Dairy Industry in Shoalhaven [Milton/Ulladulla • Kangaroo Valley]

JANUARY 1997

CONSULTANT'S BRIEF

PREPARATION OF A STUDY COVERING THE ARCHAEOLOGY OF THE DAIRY INDUSTRY IN SHOALHAVEN

1. AIM

To act on Council's behalf, to identify and record sites and structures relating to the archaeology of the Dairy Industry in Shoalhaven and develop a profile and reference manual for management of the rural landscape.

2. THE STUDY AREA

The study area is the land associated with the Dairy Industry sites of Milton/Ulladulla and Kangaroo Valley.

3. SCOPE OF THE STUDY

(a) Part 1 - Historical Review

The consultant will be required to prepare a historical review of the Dairy Industry in Shoalhaven.

(b) The Inventory

The consultant will be required to:

(i) provide a list of sites and typical examples of the Dairy Industry to be investigated and recorded

(ii) undertake a comprehensive field survey of the physical evidence of the Dairy Industry of Milton and Kangaroo Valley including:

- photographic record
- sketch drawings with measured drawings were appropriate including working layouts
- historical and archaeology notes
- locational information

(iii) summarise such information on a standard inventory form (Appendix A) to enable incorporation into Council's computerised heritage study data base.

(c) Analysis and Recommendations

Following the completion of the Survey the consultant will be required to provide a profile of the pastoral landscape including:

(i) elements contributing to the character

(ii) typical examples by visual key

(iii) management recommendations and conservation guidelines including planning opportunities for maintaining such pastoral landscapes.

4. CONSULTATION

The project will be managed by John Flett of Council's Planning Services Division or, in his absence, by the Planning Policy Manager, Ken Murray. Close liaison with the Project Manager is required during the project.

Your attendance will be required in Nowra:

- at commencement of the project (briefing meeting)
- presentation to Council Heritage Committee

5. CONSULTANT TEAM

It is expected that the specialist team producing the study would include members with appropriate skills and extensive professional experience in the disciplines of history, conservation architecture, historical archaeology, planning and landscape as well as other relevant disciplines.

The study work should be approached on a multi-disciplinary basis with all specialists being involved in consultation at all stages. It is most desirable that any consultant nominate local historians who will be used to assist with collection of historical data.

6. COSTS

The total cost of the study is $14,000. Please note that Council's budget is $12,500 which excludes a payment in kind of $1,500 by the consultant to the project. Council requires a fixed quote for the preparation of the work as outlined in the Brief. Details, (qualifications/background/ other project work) of personnel to be involved, including any sub-consultants, are to be provided together with hourly rates should additional work outside the Brief be required. Council will only consider persons with qualifications acceptable to the Department of Planning, Heritage Branch, to work on the Study. A sum of 10% of the contract price will be held over and paid out once Council is satisfied that the work has been fully undertaken.

7. TIMING

The Study is to be completed by 30 June 1997. A draft work program is to be provided by the consultant identifying the various tasks showing by when they should be completed. This should be in the form of an appropriate time line program and provided to Council two weeks from the date of commencement of the consultancy agreement.

The consultant should indicate the earliest date by when they can commence work on the project.

8. REPORT

The following reports shall be provided during the preparation of the study:

- 2 copies of the total draft final report
- 2 originals and 4 copies of the final report

All draft reports should be in A4 format in portrait mode with the final reports being bound. Maps and diagrams should be capable of photocopying in black and white while still conveying their information.

9. COPYRIGHT AND OWNERSHIP

The ownership and copyright of any information and study results and originals of all maps, reports, plans, photographic prints and negatives supplied as progress draft final or final reports by the consultant pursuant to this agreement, shall be vested jointly in the clients. These parties may permit the consultant to utilise information gained in the course of this study for the purpose of learned papers or other publications provided these are appropriately acknowledged and that confidentiality is respected.

10. SUPPORT MATERIAL

Council can supply the consultant with base mapping, both of the subject land and surrounding area at any scale suitable for presentation of report maps and local environmental plan map.

11. PAYMENT

Progress payments may be made at appropriate points in the project, subject to detailed invoices being forwarded to Council. Payments will be made only in line with the task schedule agreed to by both parties.

12. CLIENT CONFIDENTIALITY

Your client on this project shall be Shoalhaven City Council.

All work arising out of, or in respect of, or in any way connected with, this consultancy will remain confidential unless and until such release is jointly approved by the Council, the Department and, where a National Estate grant is involved, the Commonwealth Government.
As a general principle, the publication and dissemination of material is encouraged to increase public information and awareness of the State's environmental heritage and, where a National Estate grant is involved, the objectives of the National Estate Grant Program.

13. DISCLOSURE OF INTEREST

The consultant is required to disclose, in writing, any interest or matters which may prejudice the consultant's ability to act properly on behalf of Council in this

commission.

14. INSURANCE

Prior to engagement, the consultant shall be required to demonstrate to Council that it has adequate insurance cover in respect of professional indemnity and public liability insurance.

15. OCCUPATIONAL HEALTH & SAFETY

Council requires that the consultant will at all times adopt recognised and appropriate standards in relation to occupational health and safety matters when undertaking this work. It must also ensure that all sub-consultants do likewise.

16. CONFLICTS OF CONDITIONS

If there are any conflicts of conditions between this Brief and your response then, unless specifically agreed to in writing, the Council's conditions will take precedence.

17. DATE FOR RETURN OF SUBMISSION

Please forward your submission to Council, in writing, within fourteen days of the date of this letter.

If you have any queries on the above, please contact the Project Manager, John Flett, on (044) 293 485 or, in his absence, the Planning Policy Manager, Ken Murray, on (044) 29 3472.

G A Napper
GENERAL MANAGER

January 1997

JF/GA

APPENDIX 2

CULTURAL LANDSCAPE ENTRIES FROM THE SHOALHAVEN CITY COUNCIL HERITAGE STUDY

PETER FREEMAN PTY LTD
CONSERVATION ARCHITECTS & PLANNERS
1994-1997

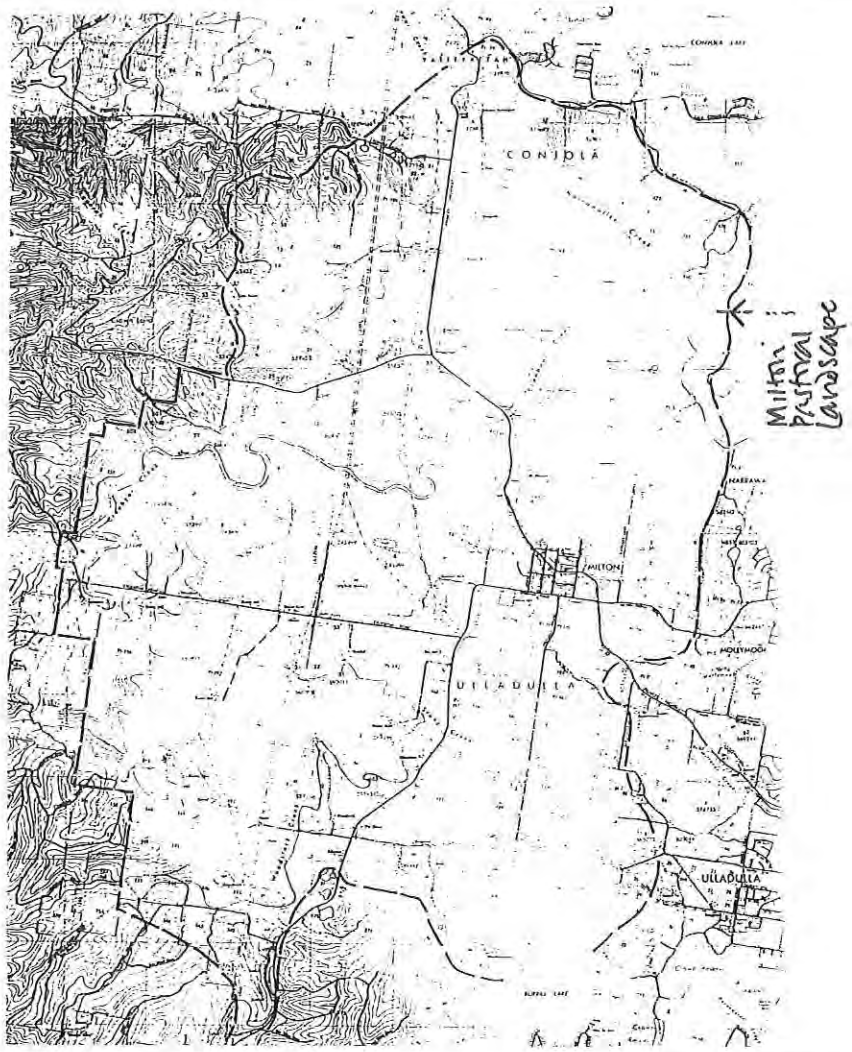
NAME	Milton Pastoral Landscapes	**REFERENCE NO.**
ADDRESS		MU114
	Milton NSW 2538	
OTHER NAMES		
GROUP		

RELATED ITEMS	Berry-Bolong, Crookhaven River and Kangaroo Valley Pastoral Landscapes.
CATEGORY	Ar
SUB CATEGORY	
REAL PROPERTY DESCRIPTION	
OWNER	
ZONING	
MAP	Milton 8927-2-N 1:25,000
GRID	
DATE OF SURVEY	14-18/8/1995 RSH
PROPERTY NO.	

HERITAGE LISTINGS

- ☐ Register of the National Estate (AHC) - Register
- ☐ Register of the National Estate (AHC) - Interim
- ☐ Register of National Trust (NSW)
- ☐ Within National Trust Conservation Area
- ☐ Register of Significant Twentieth Century Architecture (RAIA)
- ☐ Heritage Council Register - Section 130 Order
- ☐ Heritage Council Register - Permanent Conservation Order
- ☐ Heritage Council - Interim Conservation Order
- ☐ Heritage Council Register - Nomination
- ☐ NSW Government Department Heritage Register (S170 Heritage Act)
- ☐ Institute of Engineers (NSW) Heritage Register
- ☐ Regional Environmental Plan Heritage Schedule
- ☐ Local Environmental Plan Heritage Schedule
- ☐ Local Environmental Plan Heritage Schedule - Conservation Area
- ☐ Draft Listings
- ☐ Heritage Study Listings
- ☐ Other Listings :

PHOTOGRAPH / PLAN



FILM ROLL **NEGATIVE NO.**

NAME Milton Pastoral Landscapes

REFERENCE NO. MU114

ADDRESS

Milton NSW 2538

OTHER NAMES

DESCRIPTION

The Milton district pastoral landscapes are characterised by farms and boundaries established by the break-up of large estates in the 1870s. The resulting pattern, articulated by roads established in the 1850s, is overlaid by twentieth century changes in technology, economics and land use which have added new elements to the landscape. Early settlement was often concentrated on the river flats e.g. Warden's Wandaree and Old Croobyar Farm and the Kendall's Kendall Dale. Better technology and the break up of estates resulted where possible in farms as landscape focii being located to control the landscape; Riverview, Loch Leven, Bonnie View, Mimosa Farm and Woodlands characterise this pattern in their location on ridges, hilltops and slopes. The farmscapes are dominated and characterised by nineteenth century homesteads, with separate kitchens, surrounded by mature scattered plantings of Bunya pines, Illawarra little leaf figs and elm and oak trees which provide shelter for a range of buildings. Characteristically the latter include one or more weatherboard, brick and concrete dairy buildings, hay barns, cattle yards and timber and galvanised iron sheds of indeterminate age employing recycled materials. In common with other parts of the Illawarra the ubiquitous Coral tree has begun to add its form and colours to the landscape.

HISTORICAL NOTES

In contrast to Ulladulla land at Milton was ideally suited to farming. First grantee was Thomas Kendall on 1280 acres at Narrawallee in 1828, then; R.Garrad 1830; Alexander McLeay 1828 (2,560 acres Croobyar Estate); W.H.Wason (2560 acres Woodstock Estate); H.P.Dutton 2560 acres. Croobyar Estate was purchased in 1849 by David Warden. By 1857 a new track linked Ulladulla to Yatte Yattah via Croobyar and Woodstock. The Warden, Kendall, Dutton and Wason estates were to form the basis of the landscape seen today. In 1860 the private town of Milton presaged Free Selection and brought new settlers and money to the district. In 1863 W.W.Ewin purchsed 1,000 acres of Woodstock. James Warden built Boolgatta in 1870 while the Kendall estate was subdivided by the family in the 1870s. By 1878 the Warden and Kendall estates dominated with moderate selections at Little Forest. The lines of the Princes Highway, Little Forest Road and Croobyar and Woodstock Roads were well defined by the Warden's and Ewin's tenant farms, small farms resulting from the subdivision and sale of Dutton's estate and the larger farms of the Kendall family. David Warden died in 1885 resulting in subdivision of the Mt. Airlie estate between his first four son's. The early profitability of dairying displaced other forms of farming at an early date reinforcing the new network of boundaries. Farms as small as 40 acres could produce a reasonable living with co-operative factory help by the 1890s. Kington (Green Hills) 80 acres, Woodlands (Abialbon) 200 acres and Mimosa Farm (Darling Forest) on 320 acres illustrate the range; Mimosa Farm was considered to be a large profitable dairy holding even in the 1960s. Milk processing needs, smaller families and changes in lifestyle have resulted in beef cattle replacing dairy cattle on many properties and changing contexts for many homesteads and farm buildings. The impact of this has been most visible in the acquisition of new technology and loss of the old. While many properties are no longer dedicated to dairy cattle others have compensated by acquisition of adjacent land to increase their holdings.

STATEMENT OF SIGNIFICANCE

Milton's pastoral landscapes are articulated by nineteenth century dwellings, dairy buildings and landscape plantings which illustrate European settlement of the area and the growth of the dairying industry. Buildings include examples of convict built structures, one and two storey Georgian style residences and vernacular forms which illustrate the archaeology of the dairying industry. Individual items are of State, regional and local significance. Important as a pastoral landscape which remains productive and has social value to Milton's community in addition to its historic, researchl and aesthetic values. Regional significance (Illawarra Region).

HISTORICAL THEMES - STATE

4 (Pastoralism) 6 (Land Tenure) 9 (Environment) 23 (Housing) 35 (Other)

HISTORICAL THEMES - REGIONAL

EVALUATION OF SIGNIFICANCE - SUMMARY

	RARE	REPRESENTATIVE
EVOLUTION - ASSOCIATION (Historical)	R	R
CREATIVE - TECHNICAL (Aesthetic)		R
COMMUNITY ESTEEM (Social)		L
RESEARCH POTENTIAL (Scientific)		L
OTHER		

HISTORICAL THEMES - LOCAL

4.3 (Dairying) 6.1 (Sub-division of large estates) 9.2 (Clearing for dairy-farming) 23.1 (Rural houses) 35.1 (Horticultural material)

NAME Milton Pastoral Landscapes

REFERENCE NO. MU114

ADDRESS

Milton NSW 2538

OTHER NAMES

CONSERVATION ACTION RECOMMENDED

Aesthetic values to be managed in accordance with the general principles of the Visual Management Plan prepared by EDAW in March 1994.
Historic parameters to be conserved:
- use. To be maintained as agricultural land.
- boundaries. These are defined by the limit of land clearing expressed in dairy farming and associated agricultural activity.
- land use and settlement patterns. The relationship of the agricultural areas to topography is a function of technology, economics and traditional farming practices. The scale and pattern of land use are dependent on the size of agricultural holdings determined by economics and sub-division of the larger estates in the late nineteenth and early twentieth centuries. Implicit in the location of farms, access roads, drainage canals, former rural communities identified by churches and schools and the associated farm structures and tree plantings.
- building clusters.Comprising farm complexes and the associated farm structures and evidence of former rural communities identified by churches and schools.
- vegetation patterns. Including remnant native vegetation, whether in pockets or defining the external boundaries, and introduced trees planted as windbreaks, garden elemts or landscape elements.
-circulation routes. The hierarchy of road and other transport and communication routes linking farms and cottages with former and existing rural communities and towns and regional infrastructure created in response to economic and agricultural processes.
Archaeological sites are to be managed to retain their scientific and interpretive value.

INFORMATION SOURCES - WRITTEN / ORAL / GRAPHIC

Written : Nulladolla 1988, Milton-Ulladulla Historical Society.
Oral : Joanne Ewin, Milton-Ulladulla Historical Society
Graphic :
Location:

FURTHER INFORMATION

Date:
Historical Period:

NAME	Kangaroo Valley Pastoral Landscapes	**REFERENCE NO.** KV046
ADDRESS	Kangaroo Valley NSW 2577	
OTHER NAMES		
GROUP		

RELATED ITEMS	Kangaroo Valley Township, Berry-Bolong Pastoral Landscapes, Cambewarra Lookout
CATEGORY	Ar
SUB CATEGORY	0101 0208 0306 0610 0721 1103 1201 1501 1504 1614
REAL PROPERTY DESCRIPTION	
OWNER	
ZONING	
MAP	Kangaroo Valley 9028-4-S
GRID	
DATE OF SURVEY	June & July 1995 RH
PROPERTY NO.	

HERITAGE LISTINGS

- ☐ Register of the National Estate (AHC) - Register
- ☐ Register of the National Estate (AHC) - Interim
- ☒ Register of National Trust (NSW)
- ☐ Within National Trust Conservation Area
- ☐ Register of Significant Twentieth Century Architecture (RAIA)
- ☐ Heritage Council Register - Section 130 Order
- ☐ Heritage Council Register - Permanent Conservation Order
- ☐ Heritage Council - Interim Conservation Order
- ☐ Heritage Council Register - Nomination
- ☐ NSW Government Department Heritage Register (S170 Heritage Act)
- ☐ Institute of Engineers (NSW) Heritage Register
- ☐ Regional Environmental Plan Heritage Schedule
- ☐ Local Environmental Plan Heritage Schedule
- ☐ Local Environmental Plan Heritage Schedule - Conservation Area
- ☐ Draft Listings
- ☐ Heritage Study Listings
- ☐ Other Listings :

PHOTOGRAPH / PLAN

FILM ROLL **NEGATIVE NO.**

NAME Kangaroo Valley Pastoral Landscapes

REFERENCE NO. KV046

ADDRESS

Kangaroo Valley NSW 2577

OTHER NAMES

DESCRIPTION

Description: The pastoral landscapes of Kangaroo valley can be broken into distinct interactive zones:
- (1) land held predominantly by the Osbornes north of the KV township i.e. the 'Kangaroo Grounds';
- (2) the valleys draining into the Kangaroo Grounds; and
- (3) the transitional areas of Bellawongarah (Kangaroo Mountain) and Woodhill.

Bendeela has been extensively modified by the Bendeela pumped storage facility and recent sub-division.

The slow growth of KV township along the existing road created a linear form closely dependent on the surrounding landscape. The resulting urban landscape cannot be separated from its rural setting on the south side of the Kangaroo Grounds which formed the focus of the Barrengarry Estate's dairying activities. The scale and character of the Kangaroo Grounds are dependent on the subdivision of Barrengarry Estate and the many creeks which determined the location and form of dairy farms. Internal and external visual boundaries are created by modified and natural vegetation, roads, creeks and property boundaries which reflect the orignal patterns of sub-division and settlement. This pattern of small farms bounded by natural vegetation continues into the surrounding valleys and transitional areas modified by terrain and economics. In common with the coastal dairying areas every accessible pocket of land has been exploited; in contrast the interaction of dairying and natural environment has created a landscape with dramatic rapidly changing visual components and views into the component valleys. The relative isolation of the Valley and decline in the dairying industry has contributed to the survival of the underlying landscape patterns which encapsulate evidence of settlement and industry from the 1870s to the early 1900s and later.

STATEMENT OF SIGNIFICANCE

Kangaroo Valley Pastoral Landscapes are important for their ability to illustrate the growth of the dairy industry following Free Selection and the sub-division of the large estates. The landscapes include examples of vernacular buildings, farmscapes, early churches and public schools, nineteenth century plantings, Victorian residences and a range of buildings designed by noted architect John Horbury Hunt for the Osborne family of Barrengarry which document settlement and land use patterns and the archaeology of the dairy industry. Important as a pastoral landscape which remains productive, the historic, social and aesthetic values of the Valley and its contributory parts have been recognised as intrinsic to the character of the Illawara Region and acknowledged by both the local and wider community. These intrinsic values are reflected in the State significance of individual elements and the rarity of such rural ideals in the dairying areas of New South Wales. State significance.

EVALUATION OF SIGNIFICANCE - SUMMARY

	RARE	REPRESENTATIVE
EVOLUTION - ASSOCIATION (Historical)		L
CREATIVE - TECHNICAL (Aesthetic)	S	
COMMUNITY ESTEEM (Social)		R
RESEARCH POTENTIAL (Scientific)		L
OTHER		

HISTORICAL NOTES

In 1821 Charles Throsby camped at Bendeela, recording that 'Captain Brooks has cattle 3 miles distant' on 700 acres granted in 1817 north of Hampden Bridge. Brooks was followed by O'Brien in 1823 near the site of the present K V township. In 1828 Alexander Berry's men dicovered extensive cedar forests in the Broger's Creek area beginning the clearing and modification of the landscape for pastoral activity. Cedar extraction began at Barrengarry in the 1820s by Bowman. In 1829 Henry Osborne arrived in Australia settling at Marshall Mount in the Illawarra. In 1837 Osborne applied for a secondary land grant, 2560 acres, in the Valley along Barrengarry Creek. By 1840 land ownership in the centre of the Valley was controlled by Osborne, Spark and Duguid. In 1843 Osborne acquired Duguid's land, while R campbell acquired Sparks Glen Moray (Glen Murray), later selling it to Osborne. In 1840 a track along Broger's Creek and over Broughton Head was the only route into the Shoalhaven. Butter was made by the McCaffrey family at Barrengarry and taken to Marshall Mount from 1846-1852. Dairying lapsed in the period 1852-1861with the departure of the McCaffreys. Dairying began in earnest in the 1860s with free selection creating small dairy farms. J Milligan bought Bendeela milking upwards of 100 cows by 1871. The population explosion of 1861-1871 increased demands for better facilities. In 1861 a road was surveyed across Bellawongarah, crossing at Woodhill Gap, to supplement the Broger's Creek Track. The first school was built in 1869. The arrival of A Osborne in the Valley in 1870 made available greater numbers of farms for rent. Churches and school were built to cater for the dramatically rising population. In 1878 the first bridge was erected across the Kangaroo River. The township of K V developed at the boundary of Osbornes land, with churches and schools from the 1860s, and Charles Wiley's cheaper land to the east for sale in 1877. Other settlements included Bendeela, Beaumont, Upper River, Wattamolla and Woodhill and Bugong Gap.The dairy industry peaked with the population in the 1890s with mechanisation and the construction of 5 Butter Factories in the Valley. The Depression of the 1890s and lack of land was to lead to many families leaving the Valley.

(Continued under Further Information p3)

HISTORICAL THEMES - STATE

4 (Pastoralism) 6 (Land Tenure) 9 (Environment) 10 (Townships) 13 (Transport) 23 (Housing) 35 (Other)

HISTORICAL THEMES - REGIONAL

HISTORICAL THEMES - LOCAL

4.3 (Dairying) 6.1 (Sub-division of large estates) 9.2 (Clearing for dairy farming) 10.1 (Private towns) 13.1 (Roads) 23.1 (Rural houses) 23.1.2 (Farmhouses) 23.1.3 (Residences) 35.1 (Horticultural Material)

NAME Kangaroo Valley Pastoral Landscapes

REFERENCE NO. KV046

ADDRESS

Kangaroo Valley NSW 2577

OTHER NAMES

CONSERVATION ACTION RECOMMENDED

Aesthetic values to be managed in accordance with the general principles of the Visual Management Plan prepared by EDAW in March 1994.
Historic parameters to be conserved:
- use. To be maintained as agricultural land.
- boundaries. These are defined by the limit of land clearing expressed in dairy farming and associated agricultural activity.
- land use and settlement patterns. The relationship of the agricultural areas to topography is a function of technology, economics and traditional farming practices. The scale and pattern of land use are dependent on the size of agricultural holdings determined by economics and sub-division of the larger estates in the late nineteenth and early twentieth centuries. Implicit in the location of farms, access roads, drainage canals, former rural communities identified by churches and schools and the associated farm structures and tree plantings.
- building clusters.Comprising farm complexes and the associated farm structures and evidence of former rural communities identified by churches and schools.
- vegetation patterns. Including remnant native vegetation, whether in pockets or defining the external boundaries, and introduced trees planted as windbreaks, garden elemts or landscape elements.
-circulation routes. The hierarchy of road and other transport and communication routes linking farms and cottages with former and existing rural communities and towns and regional infrastructure created in response to economic and agricultural processes.
Archaeological sites are to be managed to retain their scientific and interpretive value.

INFORMATION SOURCES - WRITTEN / ORAL / GRAPHIC

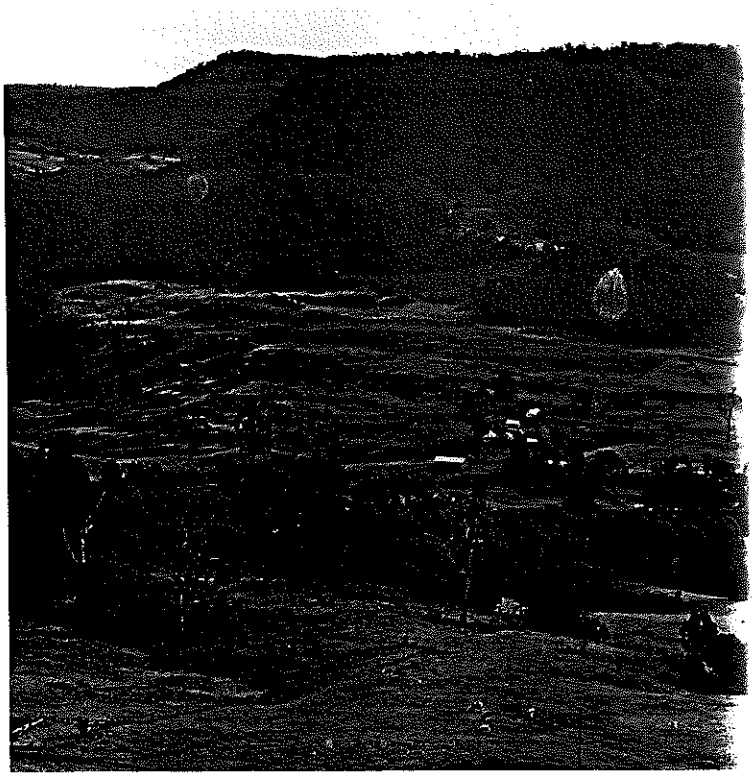
Written : A History of Kangaroo Valley, John Griffith 1978.
Oral :
Graphic :
Location:

FURTHER INFORMATION

(Continued from History p2)
In 1910 the Osborne Estate was to be sold sub-divided into 16 farms from 16-628 acres; the estate was not finally sold until 1927 establishing the underlying land use patterns of today.

During the nineteenth century local government was virtually non existent, with emphasis on roads and bridges. In 1906 the valley was part of the Cambewarra Shire Council area; in effect almost all of the Valley. The loss of population which began in the 1890s continued rapidly into the 1920s. From 1908-1918 20 farmers went out of business. By 1925 all butter factories had closed. Of the 11 full-time schools 5 became half time and one closed with only one school open in 1969. By 1978 the number of people involved in the dairy industry in the Valley had dropped to 60. Neverthless the community attempted to reinforce itself through local societies such as 'Progress Association's' during the post-war period of the 1940s and 1950s and into the 1960s and 1970s. In 1979 Cambewarra Shire council was incorporated into the new City of Shoalhaven.

In recent years the Valley has been subject to changes in farming policy and an influx of new residents intent on enjoying the Valley's lifestyle. Dairy farming has given way to stock breeding and less labour intensive farming, while the Valley's economic viability has been boosted by the arrival of new people. The historic, social and aesthetic values of the Valley and its contributory parts have been recognised as intrinsic to its character and acknowledged by both the local and wider community. These intrinsic values are reflected in the recreational use which the township and district attract and the dgree to which the Valley and its components have been studied by Heritage professionals.



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