Sydney Region

Application for Geographic Indication

Prepared by

Jonathan Auld

for and on behalf of

Nepean Hawkesbury Wine & Grape Growing Association Inc.

Final submission document - September 2002

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Executive Summary

Formed in September 1998 with the aim of promoting and marketing the vineyards and wines in the Sydney Wine Region, the Nepean Hawkesbury Wine & Grape Growers Association Inc. (details provided in Appendices 5–8) set about gaining regional status for this often overlooked, but very valuable historic area of the Australian wine industry.

Grapevines were planted in the area from the very beginnings of European settlement at Sydney Cove. As Sydney expanded, so to did the vineyards and industry techniques / technology that was ultimately to follow. From this the Australian wine industry was born.

In recognition of the early wine industry pioneers and the present-day vineyards and wineries in the Sydney area, the Nepean Hawkesbury Wine & Grape Growers Association Inc. has put together this submission to the Geographical Indications Committee in order to have Sydney recognised as a wine region in its own right.

The proposed Geographic Indication "Sydney" occupies the majority of arable agricultural land surrounding the city of Sydney and lies on the significant geological feature known as the Sydney Basin.

With soils ranging from sandy loams to clays, the underlying structure of the Basin was laid down during the Permian geological periods and has been overlaid with Triassic sediments. With a moderately continental, very hot climate, it makes the Sydney region distinct compared to other surrounding wine regions (having a mean January temperature in the 22-24°C range, an annual rainfall around 820 mm and a very humid relative humidity).

Although there is no prior traditional use of the proposed GI name, it is widely regarded as the Sydney wine region. With the growing increase in vineyard establishment in the area, local councils and community groups recognising the need to preserve the rural areas of Sydney, and tourism authorities actively promoting the food and wine trails in the Sydney surrounds, there is a need to formally recognise Sydney for its contribution and continued support of the Australian wine industry.

Qualification Criteria

Vineyards located in the proposed region with an area of five hectares or more are included in the table below.

- Table 1: Vineyards in the Sydney Region over 5 hectares in size[1]

Vineyard	Area (Ha)	2002 Tonnage
1. Camden Estate 172 Macarthur Road Camden NSW 2570	16	140
2. Kirkham Estate Wines 3 Argyle Street Camden NSW 2570	8.5	90
3. Lakesland Vineyards P.O. Box 743 Picton NSW 2571	5.5	0
4. Nangarin Vineyard Estate PO Box 421 Picton NSW 2571	18	180
5. Tizzana Winery 518 Tizzana Road Ebenezer NSW 2756	5[2]	4

1. Based on currently planted vineyards

2. Includes 2 Ha under management at Daruk Bend, Lower Colo

This data has been gathered from a survey carried out in 2002 on behalf of the Nepean Hawkesbury Wine & Grape Growers Association. This survey also identified an additional 22 growers with vineyards less than 5 hectares in size (see Table 2). Additional growers to those listed have been identified, but have not been included in the data used for this report because of incomplete data gathered.

- Table 2: Vineyards in the Sydney Region with less than 5 hectares

Vineyard	Location
1. Buckenbah	Lower Portland
2. Cogno Brothers Cobbitty Wines	Cobbitty
3. Eastbourne Estate	Berrilee
4. First Farm 1820	St Albans
5. Gledswood Homestead	Catherine Field
6. Glenorie Estate	Glenorie
7. J. Mediati	Sackville North
8. Jubilee Vineyard Estate	Ebenezer
9. Mount Hunter Estate Wines	Mount Hunter
10. Mountain Devil	Bilpin
11. Possum Gully	East Kurrajong
12. R. & P. Mason	Menangle
13. Razorback Estate	Razorback
14. Remo's & Son Vineyard & Winery	Kurrajong
15. Richmond Estate	North Richmond
16. Ruane	Manangle
17. San Pedro	Sackville
18. Talai Estate	South Maroota
19. Thornham Park	North Richmond

20. University of Western Sydney – Yarramundi Wines	Richmond
21. Vicary's Winery	Luddenham
22. Wivenhoe at Mater Dei	Cobbitty

Of the vineyards listed above Talai Estate, Tizzana Winery, Remo's & Son Vineyard & Winery, Vicary's Winery, Cogno Brothers Cobbitty Wines, Kirkham Estate Wines, Camden Estate, Mount Hunter Estate Wines and Gledswood Homestead, all operate a cellar door offering locally produced wines. Mountain Devil will be opening their cellar door soon and Nangarin Vineyard Estate will also be offering mailing list services for their wines in the near future.

Vicary's Winery, University of Western Sydney (Yarramundi Wines) and Tizzana Winery also offer, or will be offering, production facilities to other small vineyards in the area.

The following table (Table 3) is a summary of the total area under vines and the production from those plantings, for all 27 vineyards listed above. The expected increase in area due to new vineyards being established or planned has not been taken into consideration.

- Table 3: Summary of total vineyard area and production in the proposed region

Year	Area Planted (Ha)	Production (Tonnes)
2002	83	501
2004 [1]	83	572
2006 [2]	119	821

3. Assuming no additional area planted but taking into account current vines coming into bearing age.

4. Taking into effect additional plantings on current vineyards

Of the area currently under vine (83 Ha), Chardonnay represents 90.4% of the white grape varieties grown (53.4% of the total plantings). The remaining white grape varieties grown (representing 5.7% of the total), include Semillon, Sauvignon Blanc, Verdelho, Riesling, Gewürztraminer, Pinot Gris, Colombard Trebbiano and Muscat.

The remaining 40.9% of total vines grown consist of predominantly five red grape varieties. Of these, Shiraz represents 35.4% of the red grape varieties grown, followed by Cabernet Sauvignon (30.2%), Merlot (10.9%), Chambourcin (4.4%) and Barbera (4.4%). The remaining varieties grown (representing 6.0% of the total or 14.8% of red grape varieties) include Pinot Noir, Petit Verdot, Aleatico, Grenache, Cabernet Franc, Ruby Cabernet, Malbec and others.

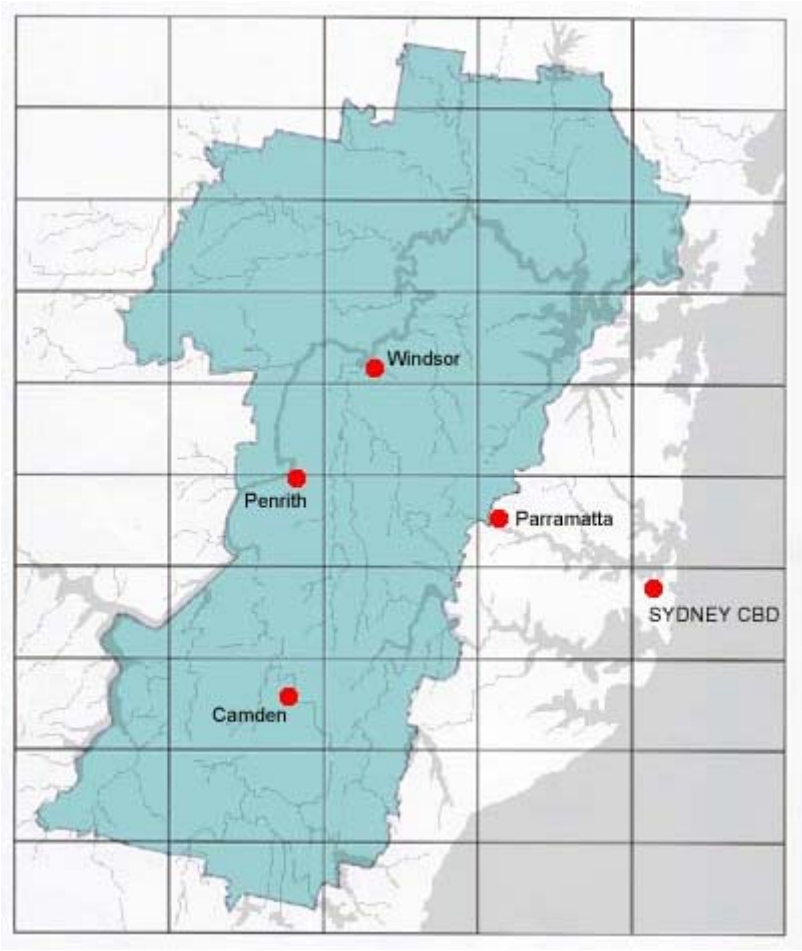
Table 4 on the following page is an analysis of the total area planted by variety using hectares and percentage.

- Table 4: Analysis of plantings by grape varieties

Variety	Area Planted 2002 (Ha)	Percentage of Total (%)
Chardonnay	44.33	53.4
Other White Varieties	4.73	5.7
TOTAL WHITE	49.06	59.1
Shiraz	12.02	14.5
Cabernet Sauvignon	10.25	12.3
Merlot	3.70	4.5
Chambourcin	1.50	1.8
Barbera	1.50	1.8
Other Red Varieties	5.02	6.0
TOTAL RED	33.99	40.9
TOTAL ALL VARIETIES	83.05	100.0

Geographical Indication Map

Based on the information provided in the Area Boundaries and Textual Description sections of this document, the proposed Sydney Wine Region can be viewed as the displayed map in the figure below.



- Figure 1: Map of the Sydney wine region

Due to the size of the area covered, the use of local government, parish and county boundaries have been used where other geographical features are not necessarily available.

Although it would have been easy to use the Pacific Ocean coastline as a true boundary of the Sydney region, it was agreed that including the residential and business areas of the City of Sydney was not appropriate. As such the area indicated in this document tries to exclude this portion of Sydney due to the fact that it is no longer available for agriculture. Substantial areas within the proposed boundary are still available to agriculture.

Area Boundaries

The area boundary used to support the textual description of the geographical indication for "SYDNEY" is presented on the following official maps:

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Textual Description

The Geographical Indication "SYDNEY" is located within the zone "South Coast", within the State of New South Wales, Australia. It includes the area bounded by the description below, but excludes any National Parks, State Forests or Nature Reserves within.

The beginning point of the boundary is located on map Mount Wilson (8930-1N) at grid reference KH651811, being the boundary of the Blue Mountains Shire and Hawkesbury Shire at the junction of the Grose River and Carmarthen Brook. Following the Hawkesbury Shire westerly boundary, proceed in a north north-westerly direction upstream along the Carmarthen Brook to the Tomah Creek at grid reference KH631824, then upstream along Tomah Creek to the Bells Line of Road at grid reference KH615861. At the Bells Line of Road head in an easterly direction until Berambing Crescent at grid reference KH 626863, at which point the Shire boundary heads in a northerly direction until it intersects with Bowens Creek at grid reference KH629891. Still following the Hawkesbury Shire boundary continue downstream on Bowens Creek in a north-easterly direction to the edge of the map at grid reference KH647904; On to Map Wollangambe (8931-2-S) at grid reference 647904, continue following the westerly Hawkesbury Shire (marked as Colo Shire on the map) boundary in a north north-easterly direction downstream on Bowens Creek to the edge of the map at grid reference 676991; On to Map Mountain Lagoon (9031-3-S) at grid reference 676991, continue following the Shire boundary in a north north-easterly direction downstream on Bowens Creek to the edge of the map at grid reference 573044; On to Map Colo Heights (9338-3-N) at grid reference 573044, continue following the Shire boundary in a north-easterly direction downstream on Bowens Creek to the point where Bowens Creek enters the Wollangambe River at grid reference 718409, then downstream on Wollongambe River to where the river meets the Colo River at grid reference 749069. Continue following the Shire boundary upstream on the Colo River in a generally northerly direction to the point where the Cook / Parr Parish boundary meets the Shire boundary on the Colo River at grid reference 728131. Follow the Parr Parish northern boundary in an easterly direction to the point where it meets the Angorawa Parish westerly boundary at grid reference 811120. Follow the western boundary of the Angorawa Parish in a northerly then north-easterly direction to the point where it meets the Mellong Parish at grid reference 827151, then continue along the Angorawa Parish northern boundary in an easterly direction to the edge of the map at grid reference 905141; On to Map St Albans (9031-2-N) at grid reference 905141 continue along the Angorawa Parish northern boundary in an generally easterly direction to the point where it meets the western edge of the Gono Parish boundary at grid reference 926138. Following the western boundary of the Grono Parish continue in a generally northern direction to the end of the map at grid reference 933188; On to Map Auburn (9031-1-S) at grid reference 933188, follow the western boundary of the Grono Parish to the Womerah Range at grid reference 934198, then follow the northern boundary of the Grono Parish in a generally south-eastern direction along the Womerah Range to the end of the map at grid reference 944188; On to Map St Albans (9031-2-N) at grid reference 944188, follow the northern boundary of the Grono Parish in a generally south-eastern and then a north-eastern direction along the Womerah Range to the end of the map at grid reference 951188; On to Map Auburn (9031-1-S) at grid reference 951188, follow the northern boundary of the Grono Parish in a generally north-eastern and then a southern direction along the Womerah Range to the end of the map at grid reference 957188; On to Map St Albans (9031-2-N) at grid reference 957188, follow the northern boundary of the Grono Parish in a generally southern, south-eastern then north-eastern direction along the Womerah Range until the point

where the Windsor / Womerah Parish boundary meets the northern Grono Parish boundary at grid reference 986187. Follow the western boundary of the Womerah Parish in a generally northern direction to the end of the map at grid reference 987189; On to Map Auburn (9031-1-S) at grid reference 987189, continue following the western boundary of the Womerah Parish in a generally northern direction to the point where it meets the border of the County of Hunter and County of Northumberland on the Macdonald River at grid reference 002285, then follow the western boundary of the Womerah Parish, the Hunter/Northumberland County boundary upstream on the Macdonald River to the point where the Womerah Parish northern boundary intersects at grid reference 007299. In a generally eastern direction, follow the northern boundary of the Womerah Parish to the end where the Bala, Lockyer and Womerah Parishes meet at grid reference 120283. Follow the eastern boundary of the Womerah Parish in a southerly direction to the point where the Womerah, Lockyer and Wallambine Parishes meet at grid reference 117257, then follow the northern boundary of the Wallambine Parish in an easterly direction to the edge of the map at grid reference 136257; On to Map Kulnura (9131-4S) at grid reference LJ136257, continue along the Wallambine Parish northern boundary in a generally east south-easterly direction to the Great Northern Road at grid reference LJ228243. In a northern direction, follow the Lockyer / Kooree Parish boundary and the Hawkesbury / Gosford Shire boundary up the Great Northern Road to the northern boundary of the Kooree Parish at grid reference LJ227261. In an easterly direction follow the Kooree Parish northern boundary to the George Downes Drive and the Gosford / Wyong Shire boundary at grid reference LJ321255. Continue is a southerly direction along George Downes Drive and the eastern boundary of the Gosford Shire to grid reference LJ339198, then follow the Shire boundary in an east south-eastern direction to the edge of the map at grid reference LJ350196; On to Map Mangrove (9131-3N) at grid reference LJ350196, follow the Gosford Shire eastern boundary in a south-east south direction to the edge of the map at grid reference LJ371152; On to Map Wyong (9131-2N) at grid reference LJ371153, follow the Gosford Shire eastern boundary in a generally south south-east direction down to Kukenny Road at grid reference LH412098, then south on Kukenny Road to the intersection with Dog Track Road at grid reference LH410086. Continue along the Shire boundary along Dog Track Road in a south-east, then easterly direction to the Sydney Newcastle Freeway at grid reference LH449071, then in a south-east south direction to the Main Northern Railway at grid reference LH490064. Follow the Main Northern Railway in a southerly direction to the edge of the map at grid reference LH489059; On to Map Gosford (9131-2S) at grid reference LJ489059, follow the Main Northern Railway in a south south-western direction, then in a generally western direction to the edge of the map at grid reference LH374926; On to Map Gunderman (9131-3S) at grid reference LH374926, follow the Main Northern Railway in a south-western direction to the edge of the map at grid reference LH366919; On to Map Cowan (9130-4N) at grid reference LH366919, follow the Main Northern Railway in a generally southern direction, then in a western direction, then in a south-westerly direction to the edge of the map at grid reference LH285779; On to Map Hornsby (9130-4S) at grid reference LH285779, continue following the Main Northern Railway in a generally south south-westerly direction to the edge of the map at grid reference LH208639; On to Map Parramatta River (9130-3-N) at grid reference LH208639, follow the Main Northern Railway south, south-east, then south to the point where the railway meets Carlingford Road and Beecroft Road at grid reference LH222614. Follow Carlingford Road west south-west , then along Pennant Hills Road to the Carlingford - Clyde Railway at grid reference LH190600. Follow the Carlingford - Clyde Railway in a generally south south-westerly direction to the Main Suburban Railway at grid reference LH163542. In a north-west direction follow the Main Suburban Railway to the edge of the map at grid reference LH149548; On to Map Prospect (9030-2N) at grid reference LH149548, follow the south-eastern boundary of the Holroyd Shire along the

Cabramatta Granville Railway in a south-western direction to the point where the railway crosses the Sydney Water Supply Pipelines and joins the Fairfield Shire boundary at grid reference LH134519. In a south-eastern direction, follow the Fairfield Shire eastern boundary to Woodville Road at grid reference LH141511, then continue following the Fairfield Shire boundary south south-west along Woodville Road to the edge of the map at grid reference LH134499; On to Map Liverpool (9030-2S) at grid reference LH134499, continue following the Fairfield Shire eastern boundary in a south south-westerly direction down Woodville Road, then west along the Hume Highway, then in a generally southern direction downstream on Prospect Creek to the point where Prospect Creek reaches the Georges River and where the Fairfield Shire touches the Liverpool Shire eastern boundary. Follow the Liverpool Shire eastern boundary on the Georges River downstream in a generally southern direction, then continue to follow the Shire boundary upstream on Deadmans Creek from grid reference LH145391 in a southerly direction to the edge of the map at grid reference LH138360; On to Map Campbelltown (9029-1N) at grid reference LH138360, follow the eastern boundary of the Liverpool Shire in a generally south-westerly direction to the point where the Liverpool, Campbelltown and Sutherland Shires intersect at Williams Creek at grid reference LH099315. Follow the Campbelltown eastern boundary upstream on Williams Creek in a southerly direction to where the Old Illawarra Road intersects with the Shire boundary at grid reference LH084260. Continue to follow the Shire boundary in a southerly direction up Old Illawarra Road to grid reference LH086255, then follow the Shire boundary east then south through Lake Woronora to the edge of the map at grid reference LH090221; On to Map Appin (9029-1S) at grid reference LH090221, follow the eastern boundary of the Campbelltown Shire in a southerly direction upstream on the Woronora River to the point where the Campbelltown, Wollongong and Wollondilly Shire boundaries meets at grid reference LH064148. In a generally southern direction, follow the eastern boundary of the Wollondilly Shire to the edge of the map at grid reference LH052081; On to Map Bulli (9029-2N) at grid reference LH052081, follow the Wollondilly Shire boundary south then in a south-western direction to Lake Cataract at grid reference LH024047. Continue west then south south-east along the Shire boundary in Lake Cataract, then in a generally western direction to the edge of the map at grid reference KH929014; On to Map Bargo (9029-3N) at grid reference KH929014, follow the eastern boundary of the Wollondilly Shire in a southerly direction to the point where the Wollondilly, Wingecarribee and Wollongong Shire boundaries intersect at the Cordeaux Dam wall at grid reference KG926982. Follow the Wollondilly Shire southern boundary in a generally west north-westerly direction, then south-west, then north north-west, then west north-west to the edge of the map at grid reference KH698064; On to Map Hill Top (8929-2-N) at grid reference KH698062, follow the southern boundary of the Wollondilly Shire in a west north-westerly direction to the edge of the map at grid reference KH646072; On to Map Nattai (8929-I-S) at grid reference KH643072, follow the southern boundary of the Wollondilly Shire in a west north-westerly direction to the point where the County of Camden and County of Westmoreland boundary joins the Shire boundary on the Wollondilly River at grid reference KH480107. Follow the western boundary of the County of Camden along the Wollondilly River into Lake Burragorang in a north-easterly direction to the edge of the map at grid reference KH560208; On to Map Burragorang (8929-I-N) at grid reference KH561208, continue following County of Camden boundary along Lake Burragorang in a north-easterly then northerly direction to the edge of the map at grid reference KH634349; On to Map Bimlow (8930-II-S) at grid reference KH634349, follow the County of Camden boundary on Lake Burragorang in a northerly direction to the point where the Westmoreland, Cook and Camden Counties join at grid reference KH629407, then follow the County of Camden boundary in a south-east then north-easterly direction to the edge of the map at grid reference KH689411; On to Map Warragamba (9030-3S) at grid reference KH689411, follow the County of

Camden north-western boundary in a north-eastern direction along Lake Burragorang and the Warragamba River to the edge of the map at grid reference KH789492; On to Map Penrith (9030-3N) at grid reference KH789492, follow the County of Camden boundary along the Warrangamba River in a northerly direction to the point where the Cook, Cumberland and Camden County boundaries meet the City of Blue Mountains / City of Penrith Shire boundary on the Nepean River at grid reference KH789508. Follow the western boundary of the City of Penrith Shire west, then north, then in a generally north-eastern direction along the Nepean River to the point where it leaves the Nepean River at grid reference KH815595. Continue in a northerly direction along the Shire boundary to the edge of the map at grid reference KH814631; On to Map Springwood (9030-4S) at grid reference 814631, follow the City of Penrith Shire boundary in a generally northern direction to the point where the City of Blue Mountains, City of Penrith and Hawkesbury Shire boundaries join at the County of Cook / County of Cumberland county boundary on the Nepean River at grid reference 829699. Follow the Hawkesbury Shire western boundary north, then west, then north to the edge of the map at grid reference 786769; On to Map Kurrajong (9030-4N) at grid reference KH786768, follow the Hawkesbury Shire boundary north to the Grose River at grid reference KH788780. Continue following the Shire boundary upstream on the Grose River in a westerly direction, then in a generally north north-westerly direction, then in a south-westerly direction to the edge of the map at grid reference KH680815; On to Map Mount Wilson (8930-1N) at grid reference KH679815, follow the Hawkesbury Shire boundary along the Grose River to the point where Carmarthen Brook enters the Grose River at grid reference KH651811, being the descriptor starting point.

General History of the Area

The Sydney region, referred by the local aborigines as Warrane, itself has been inhabited for at least 50,000 years.

When Captain James Cook made his epic voyage to Australia he claimed the whole East Coast in the name of King George III and called it New South Wales. The British did nothing with their new possession for a number of years and were then urged to establish a colony.

The First Fleet, commissioned by Thomas Townshend, Baron Sydney, set sail for Botany Bay on May 13, 1787, led by Captain Arthur Phillip. The fleet assembled at Mother Bank, the Isle of Wright, later arriving at Cape Town to take aboard plants, fruit trees (including vines) and animals. They reached their destination in Botany Bay on January 18, 1788, but pushed further north to Port Jackson where they decided to settle.

There they were to find a lush, pristine forest in a cove fed by a stream (now called the Tank Stream), where it was decided they would settle. Captain Arthur Phillip was later to name the cove they landed at Sydney Cove, in honour of Thomas Townshend, Baron Sydney (1733-1800), the minister responsible for the Colony. Later usage of the name dropped 'Cove' and the area became known as Sydney.

Sydney began its life as a penal colony, with a total of 568 male and 191 female convicts with 13 children, 206 marines with 26 wives and 13 children, and 20 officials having made the voyage.

By the time that Governor Lachlan Macquarie reached Sydney in 1809, as the 5th Governor of the Colony, a number of new towns had been established, including Parramatta. But it was inland – to the west that the colony had developed beyond Parramatta to the foothills of the mountain range. At the foot of this range beside the Emu plains was the Nepean River, well beyond the newly formed towns of Liverpool and Campbelltown. Cowpastures (Camden) was almost beyond the limits of settlement in the southwest. To the north lay Green Hills (Windsor) on the rich agricultural soils of the Hawkesbury River, and along its length had developed a number of settlements. Macquarie proclaimed five towns Castlereagh, Windsor Richmond, Pitt Town and Wilberforce. The area was the County of Cumberland, a patch of land barely 40 miles square.

The early expansion of Sydney in mid-1788 was born from the need to establish farms so that the colony could become self-sufficient. Early crops planted at Sydney Cove failed soon after arrival and new farm and grazing land was needed. Moving up along the Parramatta River a second settlement known as Parramatta was established. At the same time as the Parramatta River was being explored, Governor Phillip was also exploring the Hawkesbury River and eventually set up the third settlement at Green Hills (later to be known as Windsor).

By 1794 Governor Grose submitted plans for the First Farms on the Hawkesbury River in the present Pitt Town Bottoms area. Later that year, 22 grants were registered, and so began the production of crops needed for Sydney and the beginning of colonisation along the Hawkesbury.

In 1789 on an expedition from Parramatta to the Blue Mountains, the Nepean River was discovered. Following later settlement, the district rapidly developed into agriculture to produce food for the Sydney Colony.

As the young colony grew and slowly became self-sufficient, agricultural and grazing lands were also expanding alongside these river systems. Similar to the early development of the Hunter and Shoalhaven regions, timber getting and shipbuilding were also developed early. Although the Shoalhaven still has a timber industry, they also have a large dairy / grazing industry. The main industry in the Hunter now is the coal and power generation industries. But even to this day, agriculture has remained one of the prime industries in the area surrounding Sydney.

Today the area referred to as Sydney is covered by some 45 local government boundaries.

The Australian Bureau of Statistics refers to a statistical division known as Sydney that consists broadly of the Cumberland Plain. To the north of the Plain, the Division includes the moderately elevated Hornsby Plateau and, beyond the Hawkesbury River, the coastal lowland plains containing Gosford and Wyong. To the northwest, north and southwest of the Cumberland Plain, the Division comprises the Blue Mountains and other associated ranges. The southern part of the Division is mainly composed of the moderately elevated Woronora Plateau.

Sydney is the focal point of the State's rail, road, and air services. It also provides port facilities for overseas, interstate and intrastate shipping. It is the seat of public administration for the State, and the leading commercial, industrial, financial, educational, and cultural centre.

For the purpose of marketing New South Wales as a tourist destination, Tourism NSW considers all of the areas in the Sydney Basin as Sydney. The Sydney Wine Trail and the Hawkesbury Harvest food and wine trail have been established as important tourist destinations for both Sydneysiders and visitors to the region.

Grape Growing Attributes

Geology

The following is a text extract from the "Sydney Region North West Sector - Regional Environment Study" outlining the geological aspects of the Sydney Basin. Although the study area concentrates on the top half of the proposed Sydney G.I., the geological characteristics of the southern half are similar to the characteristics mentioned in the extract.

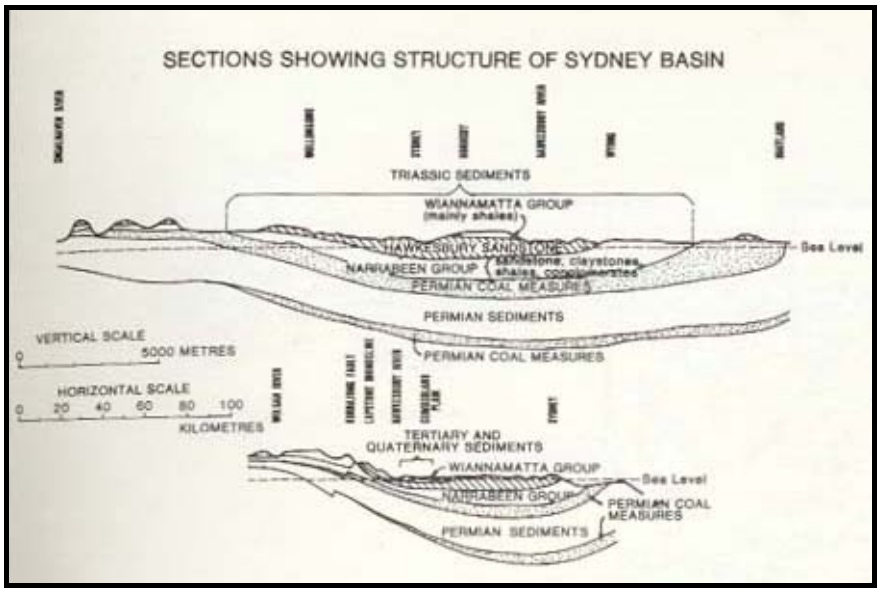
Physiographic units

The study area lies within the Sydney Basin which is a fairly simple asymetrical structural basin which has its centre at about Fairfield and extends from Port Stephens to Bateman's Bay. The general character of the Basin is shown in Figure 2. Within the Basin, the principal physiographic units relating to the study area are the Cumberland Plain in the centre, the Hornsby Plateau to the north and north east, and the Blue Mountains Plateau to the west. In parts of the study area there is a sharp transition between the plain and plateaux while in others the change is marked only by gently rolling hills with elevations ranging from 40-80 metres. These characteristics are shown on Figure 3.

The Cumberland Plain is drained by meandering creeks flowing to the Hawkesbury and Parramatta Rivers. The whole Plain, with the exception of a few rounded hills, typically has an elevation of less than 30 metres and a range of 10-60 metres. The surrounding plateaux have been formed by warping and have been deeply incised by their antecedent streams.

The Blue Mountains Plateau rises abruptly from the Cumberland Plain along the north-south line of the Lapstone monocline to a height of over 150 metres above sea-level near Glenbrook and, with associated faulting, to over 570 metres near Kurrajong Heights.

Along the north western boundary of the study area, the Hornsby Plateau, with an elevation less than 300 metres, is arbitrarily separated from the Blue Mountains Plateau by the gorge of the Colo River. In the south east, this plateau rises from the Cumberland Plain along a warpline extending from the vicinity of Cattai to Botany Bay. In general the plateaux have an elevation of about 200-220 metres with gullies down to 80-100 metres along drainage lines. Steep slopes with elevation changes of over 100 metres are not uncommon.



- Figure 2: Geographical characteristic of the Sydney Basin

Geological history

The geology of the Sydney Basin and the study area is predominantly the result of sedimentation and phases of earth movements. The underlying structure of the Basin was laid down during the Permian and earlier geological periods under marine and marshy conditions which, with major earth movements, produced the sandstone and siltstone formations and intervening coal measures lying at considerable depths under Sydney.

The geological formations that outcrop in the study area are mainly Triassic sediments which were deposited in lakes in the unfolded parts of the geosyncline of the Sydney Basin that had developed by the end of the Permian. The first group of sediments, which only occurs on the fringes of the study area, was the Narrabeen Group which has a wide range of sediments. This was followed by the Hawkesbury Sandstone and lastly the Wianamatta Group containing, in the study area, Ashfield and Bringelly Shales which were deposited in a series of isolated depressions. Since Triassic times the surface of the Sydney basin has been above sea level and consequently any further deposition of sediments have been terrestrial.

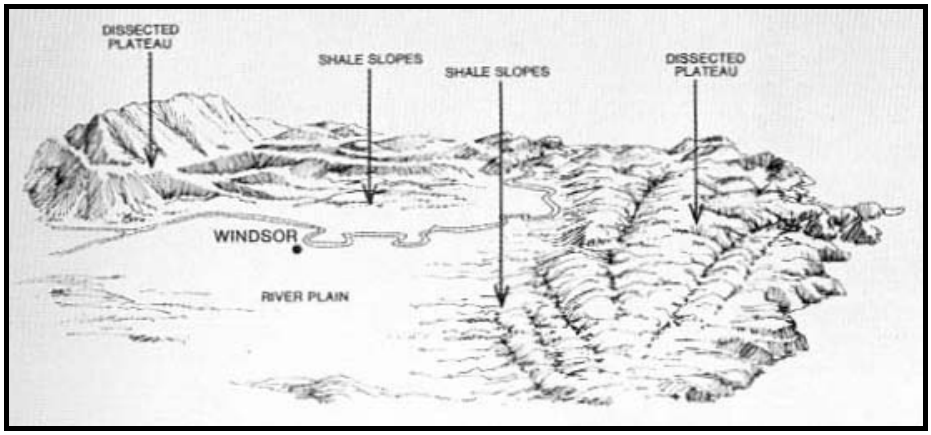
During the Jurassic period the sediments of the Sydney Basin were intruded by small bodies of magma, the best known in Sydney being the Prospect dolerite intrusion but represented in the study area by the volcanic breccia outcrop at Marsden Park.

The next depositions in the Basin were Tertiary freshwater sediments. Very little surface evidence remains but a major outcrop occurs in the study area in the sands and clay of Londonderry-Windsor area and also the sands at Maroota. The tertiary deposits were typically a coarse gravelly layer up to eight metres in thickness underlying silt and sand of an average depth of about six metres. Subsequent weathering has turned much of the sandy silt into siliceous clay. At the close of the Tertiary period earth movements occurred which produced an uplift of 600 metres in a large area of eastern Australia. These movements produced the Blue Mountains and Hornsby Plateaux described above, with the lagging behind of part of the peneplain becoming the Cumberland Plain. This movement produced the entrenching of existing rivers including the Hawkesbury-Nepean and the Grose and the development of new rivers of which the Colo is one.

The Quaternary period saw a rise in sea level of about 60 metres which drowned the lower Hawkesbury River together with the great part of the eastern Australian coast. The Quaternary deposits were formed by flood or wind and are well in evidence in the study area in the flood plain of the Hawkesbury River and its tributaries. These deposits consist of varying depths of estuarine and river sands and gravels, typically six to eight metres of gravel overlaid by about six metres of sandy silt.

The geology of the area that now appears as a result of the above history is shown on Figure 2. It can be summarised as Hawkesbury Sandstone in the east and around the northern and western fringe, with Ashfield Shales of the Wianamatta Group occurring in the Glossodia area and in a band from Pitt Town to Kellyville. Bringelly Shales, also of the Wianamatta Group, are found further west along a line from Vineyard to Quakers Hill and at Marsden Park. The south western part of the study area is dominated by the more recent deposits containing a variety of sand, silt, gravel and clay formations.

Soil types relate to parent geological material and subsequent weathering. The soils derived from the sandstone are generally poor but the repeating ridge-slope-gully formations produce a number of types ranging from barely structured sandy soils on the ridges and steep slopes to deep, strongly structured sandy clays in the gullies. The rolling terrain of the shale areas with slopes rarely exceeding 20 per cent and the different parent material produces heavy textured red podsolic soils on upper and mid slopes and yellow podsolics on lower slopes and flat drainage depressions. On the alluvials the soil type depends on the age of the sediment. The tertiary related soils cover a wide range from sand deposits to gravel, silt soils and, at their most developed, duplex soils with distinct clay subsoils. The soils on the younger alluvials range from sandy loams to clays and often show little structure.



- Figure 3: Topography of the north-west sector of the Sydney Basin

Landscape systems

The physiographic units of the study area translate into three major landscape systems - the River Plain, Dissected Plateaux and Shale Slopes which are illustrated on Figure 3.

River Plain

The River Plain system has an area of 25,600 hectares and features the Hawkesbury River along its western edge and the Eastern, South and Ropes Creek tributaries flowing through its centre. Despite the reasonable fertility of the Plain's alluvial soils, the type of vegetation it supports is influenced primarily by the low rainfall resulting from the effect of the surrounding uplands. The characteristic

vegetation community is a sparse eucalypt woodland with a slightly more dense open forest developing where the water table is higher and the water holding capacity of the soil is increased.

Soil type is the next most important factor influencing vegetation type on the Plain. The rich agricultural soils of the Quaternary alluvium support one type of canopy community, plus swamp communities and riverbank trees and shrub thickets. Because of the fertility and higher permanent water table of these soils the tree community is usually quite dense (i.e. a forest).

The vegetation on the Tertiary alluvium relates to the degree of soil development. Areas with clay subsoils support forests while the other, less clayey, soils all support sparser woodlands. The tree species of the woodlands vary in response to small changes in the proportion of sand-to-silt-to-gravel in the soil.

Along the Hawkesbury River floodplain are a number of small areas of perennially high water table. Natural vegetation here is predominantly sedgeland and reed swamp with the occasional occurrence of swamp forest. All are classified in this survey as wetlands.

Dissected Plateaux

The Dissected Plateaux landscape system covers an area of 74,770 hectares. The Plateaux to the east and west experience a higher rainfall than the River Plain mainly because of their orographic effect. Due in large part to the higher rainfall, the vegetation is more dense than on the Plain. The soil, however, is very poor and drains freely. This results in an open forest formation on the upper slopes and sparse woodlands on ridgetops are not uncommon.

On the Plateaux there are also variations in the vegetation in response to differing aspects and soil type and structure. The sclerophytic adaptation vegetation for growth on poor soils with good rains means that the vegetation reacts strongly to the extra drying effects of full exposure to sunlight. Thus, a different type of vegetation grows on north facing slopes than on south facing slopes.

It is because of this variety of environmental conditions and the vegetation's response to them that the flora of the Hawkesbury Sandstone is often called a complex of types.

On parts of the Plateaux the vegetation, while having much in common with the other Plateaux types, is more dense and has a more varied understorey. This occurs where shale caps on the sandstone and active weathering of the sandstone have produced soils that are richer and have higher waterholding capacity.

The Dissected Plateau in the north of the study area is different from the others in that it does not have a higher rainfall than the River Plain. The lower rainfall reduces the complexity of the vegetation and results in a wider occurrence of woodland formation which is less responsive to soil type and aspect as well.

The Dissected Plateaux also have wetland communities. These are mainly mangrove/saltmarsh areas in tidal re-entrants along the lower Hawkesbury and Berowra Creek.

Shale Slopes

The Shale Slopes landscape system occurs where the Ashfield and Bringelly Shales remain in the north and east of the study area. The two major areas of this

system total approximately 25.670 hectares. The vegetation of the Shale Slopes reflect, the gradual change from the Plateaux to the River Plain and rainfall similar to the latter. However, it should not be considered a transition vegetation type since outside the study area to the south this zone occurs without culminating in a plateau. In fact it constitutes the major vegetation type of the Cumberland Plain.

Climate

Station Locations

Climatic data collected by the Bureau of Meteorology from centrally located stations within the proposed region has been used to form the basis of obtaining regional climate information. The stations used are:

- Station: 067033 RICHMOND RAAF
  Latitude (deg S): -33.6022
  Longitude (deg E): 150.7794
  Elevation: 19 metres

• Figure 4: Location of Richmond RAAF Station

- Station: 068192 CAMDEN AIRPORT AWS
  Latitude (deg S): -34.0391
  Longitude (deg E): 150.6890
  Elevation: 73.9 metres

• Figure 5: Location of Camden Airport AWS Station

Climate Summary

A number of key industry indices, as described by Smart and Dry (1980), have been used to assess the climate parameters within the region and these can be viewed for the stations within the region in Table 5 below. An explanation of the indices used follow:

1. MJT - Mean January Temperature, also refers to the mean temperature of the warmest month (MTWM) .
2. MAR - Mean Average Range, or Continentality, is calculated by taking the mean temperature of the warmest month (January) and then subtracting the mean temperature of the coolest month (July) - ie. MTWM - MTCM.
3. HDD - Heat Degree Days is worked out for the growing season (October-April) and is calculated by taking the difference between 10 °C and the mean temperature of the month, which is then multiplied by the number of days in the month. The resulting figure for each of the seven months is then tallied to give the HDD in degrees Celcius.
4. RH - Relative Humidity over the growing season (October-April)
5. SSH - Sunshine Hours per day over the growing season (October-April)

• Table 5: Climate summary of the Sydney wine region

Station	MJT [1] (°C)	MAR [2] (°C)	HDD [3] (°C)	Annual Rainfall (mm)	Oct-Apr Rainfall (mm)	RH [4] (%)	SSH [5] (hrs / day)
Richmond	23.5	13.1	2296	810	573	72.3	7.1
Camden	22.9	12.9	2158	828	571	72.3	n.a.

Based on the information in the table above, we can conclude that Sydney is a hot to very hot, moderately continental, moderately sunny, very humid wine region. We can also say that it is an “east coast – hot humid” (Young, 1995) growing region based on Young’s classification of growing regions. Looking at the HDD, we can also conclude that it is a “very hot” wine producing area.

Climate Averages

Tables 6-10 below are provided in order to provide an overview of the climate within the proposed Sydney wine region. Comparing the data between the two stations selected in the region, one can conclude that the climate in the Sydney Basin and on the outskirts of the city of Sydney is very similar.

- Table 6: Mean daily maximum temperature (°C) in the Sydney wine region

Station	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Richmond	29.6	28.6	27.0	23.9	20.3	17.6	17.2	18.8	21.6	24.5	26.8	28.7
Camden	29.1	28.5	26.7	23.7	20.4	17.6	17.1	18.9	21.6	23.8	25.7	28.5

- Table 7: Mean daily minimum temperature (°C) in the Sydney wine region

Station	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Richmond	17.4	17.4	15.5	11.8	7.9	5.1	3.6	5.0	7.5	11.0	13.7	15.9
Camden	16.6	16.7	14.8	11.0	7.3	4.4	2.9	3.9	6.6	10.0	12.6	15.0

- Table 8: Mean monthly rainfall (mm) in the Sydney wine region

Station	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Richmond	93.3	105.6	92.1	70.3	58.8	56.4	35.9	45.8	40.2	64.1	76.1	71.7
Camden	94.3	99.3	93.9	77.5	68.7	60.5	38.9	46.0	43.4	70.3	78.6	56.6

- Table 9: Mean 9am relative humidity (%)in the Sydney wine region

Station	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Richmond	73	78	77	79	83	84	81	75	67	65	66	68
Camden	73	78	75	77	83	82	81	74	67	65	70	68

- Table 10: Mean daily hours of sunshine in the Sydney wine region

Station	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Richmond	7.1	6.7	6.4	6.3	5.5	5.7	6.3	7.5	7.7	7.7	7.7	7.8

Note that the shaded areas in the tables above represent the growing season where each month has a mean daily minimum temperature greater than 10 °C (i.e. October - April).

Regional Climate Comparison

Using data from the Richmond station to represent the climate in the Sydney region, Table 11 below compares Sydney to other neighbouring wine regions.

- Table 11: Comparative climates of neighbouring wine regions

Region (Station)	MJT (°C)	MAR (°C)	HDD (°C)	Annual Rainfall (mm)	Oct-Apr Rainfall (mm)	RH (%)	SSH (hrs / day)
Lower Hunter (Cessnock)	23.8	12.8	2353	763	539	68.9	n.a.
Sydney (Richmond)	23.5	13.1	2296	810	573	72.3	7.1
Mudgee (Mudgee)	23.3	15.4	2069	676	411	64.3	n.a.
Shoalhaven (Nowra)	20.9	9.9	1886	1135	740	70.3	6.9
Southern Highlands (Bowral)	19.4	12.9	1413	946	577	n.a.	n.a.

Using the information above, we can convert the figures to industry standard words that are used to describe the results. Once converted it can be seen (refer to Table 12) that the Sydney region is very similar to the Lower Hunter. The exception being that Sydney is rated as “very humid” with a relative humidity greater than 70.0%, compared to the Lower Hunter only having a “humid” relative humidity being within the range of 60-70%.

- Table 12: Data from Table 7 used to describe regional information in words

Region (Station)	MJT	MAR	HDD
Lower Hunter (Cessnock)	very hot	moderately continental	very hot
Sydney (Richmond)	very hot	moderately continental	very hot
Mudgee (Mudgee)	very hot	continental	hot
Shoalhaven (Nowra)	warm	maritime	warm
Southern Highlands (Bowral)	warm	moderately continental	cool

Apart from this similarity, it can be safely concluded that Sydney has a very different climate than the surrounding wine regions of Mudgee, Southern Highlands and the Shoalhaven.

Harvest Dates

In the southern area of the proposed region, between the towns of Camden and Picton, the variety most commonly grown is Chardonnay. Harvest is typically around mid-February through to mid-March. Vineyards in the northern part of the region have been known to start harvesting their Chardonnay around late-January, around 2 weeks earlier than the southern areas.

Harvest Dates Summary

Tables 13-20 give vintage data for various vineyards within the region.

- Table 13: Vintage data, Camden Estate 2001-02

Variety	Harvest Date	pH	Acidity (g/l)	Sugar (°Brix)
Chardonnay	16/02/02 - 07/03/02	3.46	6.5	20.7
	16/02/01 - 07/03/01	3.5	6.4	23.8

- Table 14: Vintage data, Glenorie Estate 2002

Variety	Harvest Date	pH	Acidity (g/l)	Sugar (°Brix)
Chardonnay	28/02/02	3.5	6.3	23.5
Semillon	21/02/02	3.3	7.2	22.0
Shiraz	15/03/02	3.6	6.1	24.0

- Table 15: Vintage data, Nangarin Vineyard Estate 2002

Variety	Harvest Date	pH	Acidity (g/l)	Sugar (°Brix)
Chardonnay	26/02/02	3.28	7.5	21.6

- Table 16: Vintage data, Possum Gully 1999-2002

Variety	Harvest Date	pH	Acidity (g/l)	Sugar (°Brix)
Chardonnay	01/02/02	3.72	6.61	21.5
	28/01/01	3.92	7.02	19.5
	06/02/00	3.59	5.0	21.6
	07/02/99	3.65	4.7	19.5

- Table 17: Vintage data, Talai Estate 2002

Variety	Harvest Date	pH	Acidity (g/l)	Sugar (°Brix)
Cabernet Sauvignon	17/02/02	3.7	5.85	24.3
Chardonnay	27/01/02	3.2	6.6	25.2
Merlot	17/02/02	3.8	5.85	24.3
Semillon	03/02/02	n.a.	n.a.	23.4
Shiraz	09/02/02	3.5	n.a.	23.4
Pinot Noir	n.a.	n.a.	n.a.	n.a.

- Table 18: Vintage data, Tizzana Winery 1999-2002

Variety	Harvest Date	pH	Acidity (g/l)	Sugar (°Brix)
Aleatico	19/02/00	n.a.	n.a.	18.6
	05/03/99	3.5	5.2	19.8
Cabernet Sauvignon	09/03/02	3.43	7.4	19.2
	03/03/01	3.4	7.2	18.5
	11/03/00	n.a.	n.a.	24.1
	05/03/99	3.48	4.6	18.8
Shiraz	02/03/02	3.6	8.64	19.5
	24/02/01	n.a.	n.a.	18.2
	04/03/00	n.a.	n.a.	22.5
	27/02/99	3.65	4.5	17.5

- Table 19: Vintage data, Vicary's Winery 2000-01

Variety	Harvest Date	pH	Acidity (g/l)	Sugar (°Brix)
Chardonnay	2001	3.46	6.8	20.2
	2000	3.49	6.6	21.2

- Table 20: Vintage data, University of Western Sydney – Yarramundi Wines 2002

Variety	Harvest Date	pH	Acidity (g/l)	Sugar (°Brix)
Chardonnay	26/02/02	3.5	7.5	20.7
Shiraz	14/03/02	3.5	8.0	22.5

Regional Harvest Dates Comparison

Using the list of grape varieties grown in the region (Table 4), as well as the vintage data provided in the above tables, we can then compare harvest dates with the closest surrounding regions (Southern Highlands and Shoalhaven) in table 21 below.

- Table 21: Comparative vintage data with surrounding regions

	Sydney	Southern Highlands	Shoalhaven
Chardonnay	February to mid March	mid March to May	late February to early March
Shiraz	mid February to March	late April to May	March
Cabernet Sauvignon	mid February to March	late April to May	late March to early April
Merlot	mid February to March	late April to May	March
Chambourcin	n.a. [1]	April	late February to early March
Barbera	n.a. [1]	n.v. [2]	n.v. [2]

1. n.a. - no vintage data currently available

2. n.v. - variety not grown in specified region

Of the five top red grape varieties identified growing in the region, no vintage data is currently available for Chambourcin. This is due to the fact that Chambourcin is a relatively new variety being planted in the region and to date no vintages have been taken.

Although no harvest information could be obtained for the Hunter and Mudgee regions, the Hunter generally has their harvest around the same time as Sydney, with Mudgee being around 4 weeks later.

Apart from the close similarity in harvest dates with the Hunter, Sydney has distinctively different harvest dates to the other surrounding regions of the Southern Highlands, Shoalhaven and Mudgee.

Drainage

Drainage Summary

As mentioned in the geology section of this document, the Sydney region lies within the "Sydney Basin". The Sydney Basin, centred around Fairfield in Sydney's west, extends northwards to Port Stephens, and Bateman's Bay in the south.

The majority of the region encompasses the Nepean / Hawkesbury River system and its many tributaries (Berowra Creek, Mangrove Creek, Macdonald River, Webbs Creek, Colo River, South Creek and Grose River to name but a few). Some of the area on the eastern border of the region drains into the Parramatta and Georges Rivers.

Regional Drainage Comparison

To the south of the Sydney region is the Southern Highlands region. This region drains into the Wingecarribee / Wollondilly River system and its tributaries. This system ultimately drains into Lake Burragorang (Warragamba Dam) then into the Nepean / Hawkesbury.

Also in the south is the Shoalhaven region along the coast near Nowra. This region drains into the Shoalhaven River system. To the north lies the Hunter region, which drains into the Goulburn / Hunter River system. Then there is the Mudgee region to the northwest, which drains into the Cudgegong / Macquarie River system that eventually ends up in the Marling / Darling System.

Apart from the neighbouring Southern Highlands region, the drainage of the Sydney region is clearly different that the other surrounding regions.

Irrigation

Irrigation Summary

There are no major irrigation schemes in the Sydney region. The high rainfall and high humidity in the summer months mean growers are less dependant on irrigation. With that in mind, the majority of growers do use drip irrigation systems that are used during dry periods and in the early vine development stages of establishing a vineyard.

Water sources for these irrigation systems are either by onsite dams, or if the vineyard owner has access to river water rights, via the river.

Regional Irrigation Comparison

This scenario is very similar to the other surrounding regions in that there are no major irrigation schemes. As in the Sydney region, irrigation systems employed include onsite dams and access to river water rights.

Elevation

Elevation Summary

As mentioned earlier in the geology section of this document, the elevation of the region varies, with the vast majority of the plains area having an elevation of less than 150 metres. The two main grape growing areas around Camden in the south and Richmond in the north are included in this area.

On the Blue Mountains Plateau, elevation near Kurrajong Heights reaches to just over 570 metres and climbs up to 1000 metres at Mount Tomah. The vineyards located in the Bilpin fruit growing area on this plateau have an elevation of between 600 to 800 metres.

Regional Elevation Comparison

In comparison to other surrounding regions, the table below shows that Sydney covers a wide elevation range. So much so that all of the other regions lie within the elevation range of Sydney. The reason for this is that Sydney includes the agricultural land surrounding the rivers on the lowlands as well as the Bilpin fruit growing area on the Blue Mountains Plateau.

- Table 22: Comparative elevations with surrounding regions

Region	Elevation Range
Lower Hunter	75 – 400
Sydney	20 – 800
Mudgee	450 - 650
Shoalhaven	20 - 500
Southern Highlands	500 - 750

Other grape growing attributes

Bird Damage

Vineyards in the Sydney Basin have been established generally on land used for agriculture since early settlement. Those lands are also close to national parks and remnant bushland areas that harbor many bird species that can impact on viticulture in the area. This bird problem has become more prevalent in recent years, especially with introduced species of birds, which appear to be thriving, especially in built-up areas. Species that inflict most economic damage are Indian Minors, Silver Eyes and Currawongs.

During the 2001 bushfires, it was also noted that many of the native birds forced out of the National Parks were also busy in the local vineyards. Because of this bird problem, most growers employ bird netting from veraison through to harvest.

Grape Vine Diseases

Being a reverse Mediterranean, moderately Continental, climate (ie winter droughts with high Summer rainfall), it is not surprising that mildew diseases (Downey Mildew, Powdery Mildew and Botrytis), are a significant problem in the region. Because of this, all vineyards tend to adopt preventive spray regimes.

Early ripening varieties (such as Chardonnay) often overcome the problem of late harvest rainfall.

Recent advice to the local grape growers has included recommendations to examine varieties that are more disease resistance (such as Chambourcin, Norton, Seyval Blanc, Traminette, Durif, Barbera, Vidal Blanc, Tannat). To this end, four or five new plantings have been with Chambourcin. In addition trial plantings with some of the other varieties have commenced at one vineyard.

The factor that Phylloxera louse struck vineyards in the County of Cumberland rather heavily during the 1880's, is not lost on grape growers and all new plantings have been placed on disease-resistant rootstocks, by and large. Because of quarantine restrictions, new plantings have to look within the region to have grapes processed into wine.

Development Plans

There are no known development plans for the proposed region that would affect the status of the wine industry in the region.

Letters of support from the following organizations and individuals can be found in Appendix 4.

- Hawkesbury City Council
- Kerry Bartlett, M.P. – Federal Member for Macquarie
- Kevin Rozzoli, M.P. – Member for Hawkesbury
- University of Western Sydney – Hawkesbury
- Hawkesbury Harvest
- The Evans Wine Company
- Tourism Hawkesbury Inc.

Additional support has also been given verbally with letters of support forthcoming, but not yet received, from a number of organizations including:

- Baulkham Hills Shire Council
- Campbelltown City Council
- Hills Hornsby Tourist Association
- Office of Western Sydney
- Penrith City Council
- Tucker Seabrook (Aust) Pty Ltd

Traditional Use

The proposed GI of Sydney occupies the majority of arable agricultural land surrounding the city of Sydney. Although there is no previous recognition of the proposed boundary, early statistical agricultural records of the mid 1800's refer to Police Districts and the Counties of Cumberland, Camden and Cook, all of which are included, in part, in the proposed boundaries.

The name Sydney has been synonymous with the early Australian wine industry from the early pioneering work introduced into the industry to the establishment and cultivation of grape varieties used throughout the whole industry.

In recent years there have been extensive plantings around Sydney and with local Councils and organizations such as Hawkesbury Harvest now taking interest in preserving the green belt surrounding Sydney, the interest in establishing vineyards in the region are at a high.

From a tourism point of view, Tourism NSW considers the area of the proposed region as being part of Sydney and its surrounds.

Selected regional wine labels and newspaper articles on wine and tourism in the region are included in Appendices 2 and 3 respectively.

Wine and Grape History

The history of the Australian wine industry had its beginnings with the arrival of the first fleet into Sydney Cove.

The first vines arrived in Australia in 1788 with Captain Phillip on board one of the ships of the First Fleet. These vines were first planted out at Farm Cove - the site of the present Sydney Botanical Gardens. Unfortunately, the vines did not bear as expected, and were soon transplanted to a new location at Parramatta. In 1791, Governor Phillip reported that he had established a three-acre vineyard at Parramatta, and that a settler named Schaffer had also planted one acre of vines.

In following years, many others attempted to establish wine grape growing and winemaking ventures in various regions of the colony.

Notable amongst these were the pioneering efforts of Captain John Macarthur, to whom a grant of land some thirty miles from Sydney was made, and which he named Camden Park. This property played a major part in the development of all manner of primary industries in Australia, being particularly well known as the home of the development of the merino sheep breed. Camden Park played a vital roll in the fledgling wine industry through its importation and distribution of vine cuttings throughout NSW and the Barossa Valley. By 1853, Camden Park listed some 33 grape varieties for sale.

Another important figure in the early wine industry was Gregory Blaxland. Blaxland established a vineyard at Ermington on the Parramatta River in 1806 and by 1822 shipped 136 litres of wine to London where it won the Silver Medal of the Society for Encouragement of Arts, Manufactures and Commerce, now known as the Royal Society of Arts. Five years later, a larger shipment of 1800 litres of Blaxland's wine won the Gold Ceres Medal.

Early vineyard data compiled from Colonial Secretary returns showed in 1843, some 183.6 acres of grapes being grown in the Sydney Basin, producing 12,315 gals of wine and 497 gal brandy. Statistical data in the table below shows how the area under vines expanded in Sydney and continued to expand throughout the state.

- Table 23: Development of grapes grown (acres) in early New South Wales 1845-1886

Year	1845	1855	1865	1876	1886
Total Sydney	220	350	511	685	940
Hunter	35	21	33	308	1697
Other NSW	301	659	2002	3465	2909
Total NSW	556	1030	2126	4458	5247

Many important families were involved in the development of the Sydney wine scene, from the farmlands that developed around the Parramatta River, but especially on the fertile agricultural lands that followed the Nepean / Hawkesbury River system that encircles Sydney. Many of these early vineyards are outlined in the time chart below.

Once the 1870's had been reached, the technology of winemaking and viticulture began to be better understood and the industry was primed to develop to another level. One individual, Dr Thomas Fiaschi, who pioneered the introduction of Listerian surgery in Australia at the Hawkesbury District Hospital (Windsor) also made a pioneering contribution to the wine industry through his experimental use of new grape varieties, use of aseptic conditions in a modern winery and new trellising techniques.

Fiaschi was elected president of the NSW winegrowers Association for some 25 years.

By 1895, James Angus had begun to introduce modern wine making techniques at Minchinbury and released its famous sparkling wines in 1903.

All was not well however in the wine industry and the turn of the century saw the decline of many vineyards in the County of Cumberland (and in many other parts of Australia) due to the Phylloxera louse. Many remnants of early vineyards hung on throughout the 20th century, exploiting the still rich farming lands, but succumbing to the pressure of growth from an ever-growing metropolis.

Recent years however has seen a revival in the planting of vineyards in the Sydney basin offering visitors a unique opportunity to compare Sydney wines to other regions.

1788	February - the first grapes were planted at Sydney Cove from cuttings obtained from Rio de Janeiro and the Cape of Good Hope.
	November - Vines were planted at the 'The Crescent' - Rose Hill, Parramatta.
1791	January - Governor Phillip gives a gift of grapes to Mrs Macarthur.
	May - Phillip Schaeffer begins clearing his farm 'The Vineyard' - plants 1 acre of grapes at Rose Hill.
	December - On December 3, Captain Tench records in his journal that there are 8,000 vines planted at 'The Crescent'. On December 7, Captain Tench records that Schaeffer has 900 flourishing vines planted.
1793	Colonel George Johnston receives his first grant of land at Petersham which he called 'Annandale Farm'.
1794	John Macarthur plants a small vineyard at Parramatta at his 'Elizabeth Farm'.
1797	Phillip Schaeffer sells 'The Vineyard' to Captain Henry Waterhouse.
1800	January - William Cox purchases 'Brush Farm' at Ermington from John Macarthur.
	'The Vineyard' is leased to William Cox after Captain Waterhouse's duties require him to return to England. Cox leases the property until 1803.
1801	7,000 vine cuttings planted at 'The Crescent' to replace the neglected vines previously planted.
	George Suttor planted a trail vineyard at his Baulkham Hills 'Suttor Farm' which later became known as 'Chelsea Farm'. The vineyard failed.
1802	5,000 vine cuttings planted at 'The Crescent' bringing the total vines planted to 12,000.
1803	Land cleared and vines planted at Castle Hill, but the plants were affected by blight. Nothing more was done.
1804	Reverend Samuel Marsden is granted land at St Mary's and calls the property 'Mamre'. Marsden establishes a vineyard here from cuttings grown on one of his Parramatta farms. He is also accredited with introducing the Mueller's Burgundy grape variety by James Busby.
1806	Gregory Blaxland purchases 'Brush Farm' at Ermington on the Parramatta River and immediately plants cuttings that he obtained from the Cape of Good Hope on his trip to Australia as an experiment.

Gregory Blaxland leases 'The Vineyard'.

Mary Putland, Governor Bligh's daughter, is granted land at St Mary's and establishes 'Orange Grove' vineyard.

1811 Robert Townson is granted land at Minto and calls it 'Varroville'. The property becomes a showpiece and its vineyard is 'second only to Gregory Blaxland'.

1812 May - George Suttor arrives back from England bringing with him more vines.

July - Captain Waterhouse dies and 'The Vineyard' is sold to Hannibal Hawkins Macarthur.

1816 The Royal Society of Arts in London offers a medal for "the finest wine not less than 20 gallons of good marketable quality made from the produce of vineyards in NSW".

Gregory Blaxland determines from his experiments that Black Constantia and Claret are the most suitable varieties. He subsequently plants more vineyard at 'Brush Farm'.

James Chisholm purchases 'Buckingham' and renames it 'Gledswood'. Chisholm extends the homestead and includes a cellar with a capacity of 20,000 bottles.

1817 John, William and James Macarthur return from Europe with a range of vine cuttings and propagate the vines at 'Camden Park'.

1819 Robert Campbell is granted land at Mona Vale on which he develops a vineyard.

Governor Macquarie starts a Government Farm at Emu Plains and plants an experimental vineyard.

Captain William Minchin is granted land west of Rooty Hill and calls it 'Minchinbury'.

1820 The Macarthur's at 'Camden Park' vineyard, enlarge their Camden estate with the first commercial plantings in the area. Varieties grown include Pineau Gris, Frontignac, Gouais, Verdelho, Cabernet Sauvignon, Riesling, Grenache and Mataro. William Macarthur also plants 20 acres of vineyard at Penrith.

1822 March - A quarter of a pipe of red fortified wine was shipped to England from Gregory Blaxland's 'Brush Farm'. This is Australia's first export of wine.

Land at Parramatta granted to The Parramatta Agricultural and Horticultural Society for the propagation and distribution of fruit trees and grapevines for the colony.

1823 Dr James Bowman's 'Lyndhurst Estate' at Glebe is reported to have extensive vineyards in the estate gardens.

England - Blaxland is awarded a Silver Medal for his wine from The Royal Society of Arts in London.

1824 The first vintage at 'Camden Park'

July - William Redfern returns to Australia, via Madeira, and receives a further grant at 'Campbellfields' where he introduced the grape variety Verdelho.

14 acres of vineyards are established on the Mulgoa property 'Winbourne' owned by George Cox, son of William Cox.

William Cox's son, Henry Cox, establishes a vineyard on his 'Glenmore'

property at Mulgoa.

1825 James Busby wrote the book "A Treatise on the Vine and the Art of Winemaking"

James Busby is placed in charge of the farm and teaches viticulture at the Cabramatta Male Orphan School

1826 Vineyard started on Sir John Jamison's Penrith property 'Regentville'

1828 England - Blaxland is awarded the Gold Ceres Medal for his wine from The Royal Society of Arts in London.

1830's 34,000 vines sent to Barossa Valley from 'Camden Park'.

1830 James Busby wrote the book "A Manual of Plain Direction for Planting and Cultivating Vineyards and the Making of Wine in New South Wales". In it, 'Annandale Farm' is praised for its fine vineyard.

'Regentville' now has 10.5 acres under vineyard and is being irrigated with a steam engine that Sir Jamison had imported.

1832 'Horsley' vineyard was established in an area to be later called Horsley Park

Government Farm at Emu Plains is sold.

1833 January - Busby collection of 437 cuttings from the Montpellier Botanical Gardens and 133 from the Luxembourg Gardens, arrives aboard the convict ship 'Camden' in Sydney. The collection is placed at the disposal of the His Majesty's Government into the Sydney Botanic Gardens.

John Eyre Manning established a vineyard at Rushcutters Bay. Believed to have supplied grapes for winemaking at 'Vaucluse House'.

1835 George Suttor planted 2,500 grapes vines at 'Chelsea Farm'.

Henry Whitaker purchased land near Prospect Creek, East Fairfield and established 'Orchardleigh'. In future years, Jacob Stein will work in the vineyard.

'Regentville' is now 15 acres in size with some 30-40,000 vines and up to 200 varieties.

1836 'Montpellier' at Picton offered for sale. Notice lists vineyards.

1837 October - Johann Stein with five other German vinedressers arrived under a five-year contracts to the Macarthurs of Camden. Johann Stein is the first successful person to bring Rhine Riesling into Australia.

1840's Dr William Bland purchases 'Mark Lodge' from the estate of John Horsley and develops extensive vineyards.

1842 Edward Cox (son of William Cox) has a vineyard on his 'Fernhill' property at Mulgoa.

1843 George Suttor published "The Culture of The Grape-Vine and The Orange in Australia and New Zealand"

Jacob Stein arrives with three other vitners, Johann Beckhaus, Johann Jurg and Johann Stumpf under a five-year contracts to the Macarthers of Camden

1847 The Marist Fathers Catholic Order from Lyon, France purchase 'Longwood' at Gladesville and call it 'The Priory'. Vines reported to be growing well.

	Joseph Stein arrives under a five-year contracts to the Macarthurs of Camden
1848	'Sand Hill Farm' vineyard is established on Prospect Creek at Carramar by Jacob Stein. The name 'Sand Hill Farm' was later shortened to 'Sandal Farm'.
	Hannibal Macarthur sells 'The Vineyard' to Thomas Icely in July, who subsequently sold the property to the first Roman Catholic Archbishop of Sydney, J.B. Polding. Polding presents it to the Benedictine Order of Nuns.
	George Cox obtains 1,000 Hermitage cuttings from Sir Charles Cowper's 'Wivenhoe' vineyard at Camden.
1850's	Martin Thurn, a vinedresser bought to NSW by the Macarthur's from Germany in 1852, establishes his own vineyard called 'Camden Bridge Farm' at Camden.
	Joseph Doust leases 'Cawdor' at Cawdor and establishes 5 to 7 acres of vineyards.
	Frederick Christian Luther, who had previously worked at 'Regentville', establishes his own vineyard at 'The Hermitage' in Camden.
1850	Dr Alexander Berry (from 'Coolangatta' in the Shoalhaven) moves into 'Crows Nest House', North Sydney and develops a substantial vineyard on the property.
1851	'The Vineyard' is renamed the Benedictine Monastery of 'Subiaco'.
1853	'Camden Park' nursery lists 33 grape varieties for sale.
	William Charles Wentworth cultivating large enough grape quantities at 'Vaucluse House' to be recorded on an inventory.
1855	Thomas Ireland planted 'Sunnybrook' vineyard near Warwick Farm
1859	July - Dr Charles McKay purchases 'Minchinbury' and plants the first vines during the 1860's. He also had the original winery constructed on the site.
1860	William Fowler erects a three storey winery and still-room on his 'Eschol Park' property. Fowler also establishes a 15 acre vineyard on the property.
1864	Marist Fathers sell 'The Priory' to the Salter Family and move to Hunters Hill and plant a new vineyard.
1869	Henry Whitaker of 'Orchardleigh' wins first prize for the best red at the Agricultural Society Show.
	William Arthur Helleyer's Mulgoa property 'Fairlight', has two vineyards and a winery.
1870	Dr Frederick Norton Manning established a vineyard at Gladesville Psychiatric Hospital, formerly Tarban Creek Lunatic Asylum
	Between 2,000 and 3,000 gallons of wine produced at 'Eschol Park'.
1876	July - 'Orchardleigh' is subdivided to make way for the village Orchardleigh.
1880's	Frederick Chave at Lovett Bay is reported to be growing grapes. Opposite Lovett Bay, the Crawford Brothers at 'Ventnor' are also growing grapes.
	John Bruchauser settled at 'Elderslie', Camden, and planted vineyards.

1882	Thomas Henry Fiaschi plants 5 acres of vines at his 'Tizzana' vineyard at Sackville Reach
1886	Leon Houreax plants vines for wine production at 'Rock Lily', Mona Vale.
1887	Patrick Edwin Fallon develops an extensive vineyard from Collaroy to North Narrabeen on his 'Mount Ramsey Estate'.
	J.A.M. McLean establishes 'Kaluna' vineyard.
	Construction of the sandstone cellars at 'Tizzana' are completed. Vineyards have been expanded to 55 acres.
1888	Phylloxera spreads to the outskirts of Sydney.
	Salter family sell 'The Priory' to the Government for arable land at Gladesville Hospital.
1895	James Angus purchases 'Minchinbury' and starts introducing new wine-making technology to the winery.
1901	Mr Himmelhoch establishes the 'Grodno' vineyard at Liverpool. 17 acres of Hermitage and Malbec, with another 15 acres in preparation for planting.
1902	Herman Paul Leopold (Leo) Buring starts working at 'Minchinbury' after having worked at Great Western Winery.
	Dr Fiaschi becomes president of the Australian Wine Producers' Association of NSW, a position he will hold for 25 years.
1906	Marist Fathers abandon their vineyard at Hunters Hill.
1907	Patrick Fallon dies and by 1912 the 'Mount Ramsey Estate' has been fully subdivided, thus ending the vineyard.
1908	'Minchinbury' releases its first champagne from its 1903 vintage.
1912	Penfold's Wines purchases 'Minchinbury'. Over the subsequent years, Penfold's will go onto expanding the cellars in order to store in excess of 1.25 million bottles, as well as expanding the vineyards to over 400 acres. Varieties grown include Verdelho, Riesling, Cabernet Riesling, Pinot Noir, Hermitage, Traminer and Pinot Blanc.
1917	Cec Vicary plants vines on his grazing property.
1918	Arthur (Colin) Laraghy purchases 'Kaluna' vineyard. Mainly grew table grapes.
1920	After leaving 'Minchinbury' in 1919, Leo Buring becomes Australia's first wine consultant and builds a home at Emu Plains. On this property, called 'Leonay', he also establishes a vineyard.
1922	A closed order of Benedictine Nuns takes over 'Subiaco'. They occupy the property until 1958 - their main source of income is the sale of altar or communion wine produced on the estate. The estate was demolished in 1961 to make way for a manufacturing plant.
1923	'Vicary's' is producing wine on a commercial scale and selling from its cellar door.
1930	'Cawdor' winery ceases to operate with the onset of the Great Depression.
1954	'Minchinbury' is further expanded with 34 acres of Traminer.

	Vineyard established at Cobbitty by the Giribaldi family. Barbera is one of their main varieties grown.
1955	July - Vandals burn down 'Tizzana'
1959	'Kaluna' is subdivided for housing development.
1962	'Minchinbury' vineyard is wound down due to over cropping, grapes imported from other vineyards.
1964	Giovanni and Dino Gogno establish the 6.5 hectare 'Cogno Brothers' vineyard. Barbera, Trebbino, Chardonnay, Grenache and Black Muscat grown.
1968	Peter and Carolyn Auld purchase the ruins of 'Tizzana' and rebuild the sandstone cellars.
	Dr Barry Bracken plants 6 acres of vines at his North Richmond 'Richmond Estate' vineyard.
1971	Previous plantings with grafted rootstock at 'Richmond Estate' have failed. Replanting on own roots is successful and eventually 22 acres are under vines. Varieties grown include Cabernet Sauvignon, Shiraz, Merlot, Malbec as well as Black Muscat table grapes. Attempts with Chardonnay are unsuccessful.
1972	Peter de Challis establishes a 4 hectare vineyard and winery at Warragamba.
	'Cogno Brothers' winery was built. 100,000 cases of wine produced. Additional grapes from other areas are also bought in.
	Gledeswood Homestead establishes a small vineyard.
1975	Norman Hanckel re-establishes vineyards at 'Camden Bridge Farm' and sells the grapes to 'Hungerford Hill' in the Hunter.
1978	June - Winery and cellar operations ceased at 'Minchinbury' as the operations were moved to Tempe.
1979	Vineyards are re-established at 'Tizzana'.
	Giribaldi vineyard at Cobbitty ceases to operate.
1980	Norman Hanckel, with the assistance of his daughter Sue, start producing their own wine. 38 acres of vines with Chardonnay, Cabernet Sauvignon, Trebino and Traminer grown.
1984	'Richmond Estate' is sold to Tom Allen.
1985	Mount Hunter Estate Wines establishes vineyards at Mount Hunter.
1987	April - Heritage classified 'Minchinbury' is destroyed by fire.
	Tony Radanovic purchases 'Richmond Estate'.
1992	Possum Gully Vineyard is established at East Kurrajong.
1993	Kirkham Estate Wines is established at Camden.
1996	Vineyards at Glenorie Estate (Glenorie) and Remo's & Son Vineyard & Winery (Kurrajong) are established.
1997	Vineyards at Ruckenbah (Lower Portland) and Talai Estate (South Maroota)

	are established.
1998	Nangarin Vineyard Estate establishes an 18 hectare vineyard at Picton. Chardonnay planted.
1999	A small vineyard was re-established at 'Wivenhoe' with Chardonnay grapes.
	The University of Western Sydney establishes a vineyard and starts offering degree courses in Viticulture and Wine Making.
2000	Richard & Patricia Mason (Menangle), Greg Symons (North Richmond), Peter & Sandy Short (San Pedro – Sackville) and Bill Ferris (Daruk Bend – Lower Colo) plant small acreage vineyards.
2001	Alan & Tasia Hansen (Jubillee Vineyard Estate – Ebenezer) plant 1 Hectare of Chambourcin.
	First Farm 1820 establishes a vineyard at St Albans in the Macdonald Valley.

Other Attributes

Sydney Wine Trail

In order to better market their wines from cellar doors in the region, members of the Nepean Hawkesbury Wine and Grape Growers Association Inc. several years ago took the initiative of developing an internet web site. This site can be located at http://www.nepeanhawkesburywine.asn.au/, and can also be accessed through Hawkesbury on the Net at http://www.hawkesbury.net.au/. As part of this web site, a Sydney Wine Trail (refer to Appendix 1) has been developed and is used in joint promotions, including:

- Tourism NSW
- Regional Tourism Associations (Tourism Hawkesbury, Hills/Hornsby Tourist Association, Penrith Tourism Association, Quondong Visitor Information Association, Tourism Wollondilly, Macarthur Tourism)

The association also has reciprocal membership with Hawkesbury Harvest Inc. who promotes a Food and Wine Trail in the region.

Sydney Wine Region Marketing Strategy

The Nepean Hawkesbury Wine and Grape Growers Association, shortly after its formation in 1999, recognised the need for a strategic approach it its marketing and promotions, commissioned a marketing strategy to identify and develop a strong brand image and promotional strategy. To this end, Robert and Carleen Mitchell, with the assistance of resources from the University of Western Sydney produced a Marketing Strategy document titled “Sydney Wine Region Marketing Strategy 2000-2005”. This report was presented to the association in November 2000 and has been used as a basis of our co-operative marketing programme.

Bud Burst Festival

The Nepean Hawkesbury Wine and Grape Growers Association have also initiated a festival during September each year.

Last year, the Sydney wineries held their inaugural Bud Burst festival. Because of the excellent reception of the event, held at Vicary’s Winery – Luddenham, this year the Association has decided to extend the Bud Burst Festival over several weeks from 14th–29th September 2002. This will allow a number of events to be staged along the Sydney Wine Trail.

The festival will commence with a combined wineries event to be staged again at the Vicary’s Winery, Luddenham on Sunday 15th September, 2002.

On display will be various wineries from the Sydney area including Gledswood Homestead, Tizzana Winery, Mount Hunter Estate Wines, Vicary’s Winery, Camden Estate, Nangarin Vineyard Estate, Kirkham Estate Wines and others. Various councils of the region, MACROC, Hawkesbury Harvest and the University of Western Sydney, will also be supporting the festival. The event will also feature other producers, olive growers and craft stalls.

With its Bud Burst Festival, the Nepean Hawkesbury Wine and Grape Growers Association is celebrating the revival of Australia's oldest wine growing area and the growing number of new plantings in the region.

General Comments

Newspapers

The most widely read newspaper in the region is the Sydney Morning Herald, located at Darling Park 201 Sussex St, Sydney, NSW, 2000.

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