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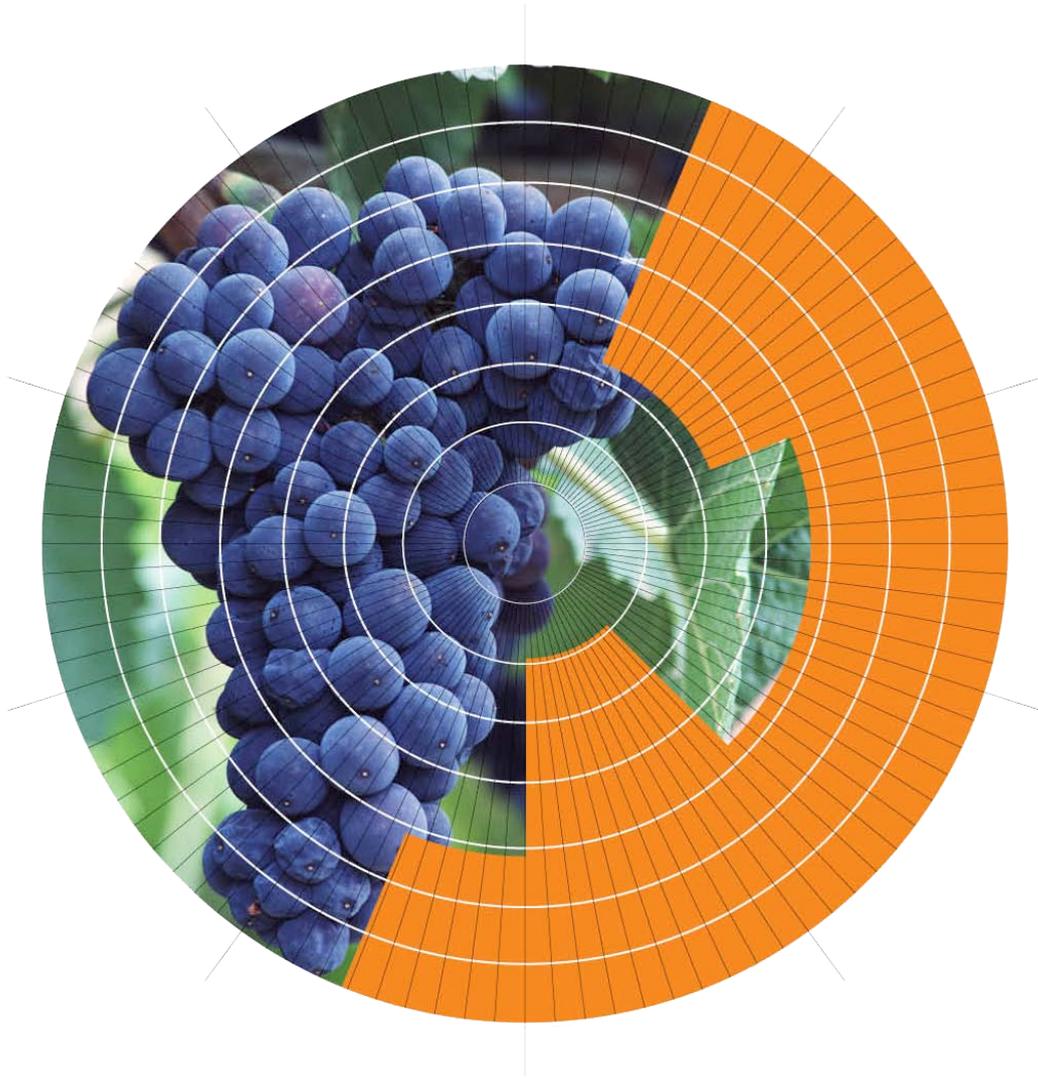
Department of Agriculture, Fisheries and Forestry
ABARES

Australian wine grape production projections to 2013–14

Caroline Gunning-Trant and Walter Shafron

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Foreword

The Grape and Wine Research and Development Corporation commissioned ABARES to produce wine grape production projections for the three years 2011–12 to 2013–14. Similar reports have been produced annually since 1988 to provide information for both wine grape producers and winemakers to assist them to plan their production programs based on projected grape supply.

While the 2011–12 growing season in many wine grape producing zones was generally favourable, in New South Wales and north-east Victoria the season could be characterised as cool and wet. This meant vigilant canopy management practices were required to control the incidence of disease in the vines. Growers in these two states also endured a significant rainfall event in late February through to early March, which severely affected some vineyards. Yields across most varieties are generally reported to be lower this season compared with the longer-term average, largely on account of reduced fruit set but also because of some weather-related losses later in the season.

Total wine grape production in 2011–12 is forecast to be around 1.53 million tonnes, 2 per cent lower than the previous vintage. In the two years to 2013–14, production is projected to recover to about 1.63 million tonnes. This projection is based on current plantings and assumes that favourable seasonal conditions will allow a return to average wine grape yields.

Paul Morris
Executive Director
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May 2012

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Summary

This report provides estimates of wine grape production for the 2010–11 vintage and production projections for 2011–12, 2012–13 and 2013–14. Estimates have been made for total wine grape production in each of Australia's wine grape producing zones.

In 2011 the Australian Bureau of Statistics (ABS) collected vineyard data as part of its *Agricultural Census*, but reduced its coverage to total wine grape production, bearing and non-bearing areas, and area removed from production. Before 2011, the ABS vineyards collection involved either a census of all vineyards within the scope of the population, or a survey that covered a more limited number of wine grape varieties. Because of the reduced coverage of the 2011 data, it has been necessary to reorganise data from previous years to allow comparisons between this year's estimates and data collected in previous years for all ABS-specified zones. As a result, no production estimates across varieties are provided.

Wine grape production in 2010–11

Wine grape production in 2010–11 is estimated by the ABS to have been 1.56 million tonnes, around 2 per cent higher than the 2009–10 harvest of 1.53 million tonnes. Favourable growing conditions in many regions, and diligent spraying regimes in the more humid regions, resulted in an increased number of bunches and larger berry size which offset weather-related losses. The rise in national production was principally the result of an increase in total production in the warm inland regions, although other smaller cool climate regions also managed to raise production despite the damp and humid conditions. Increased outbreaks of disease (such as downy and powdery mildew and botrytis), and flooding in parts of Victoria, lowered average yields generally and affected the quality of the grapes, with a higher proportion of grapes delivered to the wineries reportedly downgraded or rejected.

The decline in wine grape production was most significant in South Australia's Limestone Coast zone where production fell by 37 per cent in 2010–11 to 82 000 tonnes. Production in both the North East Victoria zone and North West and Western Victoria zone fell by 27 per cent, to 17 000 tonnes and 7000 tonnes, respectively. In the Southern New South Wales zone, production fell by 22 per cent to almost 9000 tonnes.

The warm inland zones managed to avoid any decline in production in 2010–11 despite the damp and humid conditions. In the Murray–Darling – Swan Hill zone, average yields fell slightly given the seasonal conditions and severe flooding around the Swan Hill region. However, the larger berries offset the decline in average yields to raise production by 3 per cent compared with 2009–10 to 343 000 tonnes. In the Lower Murray zone it appears that early detection and disease control assisted in maintaining yields and, combined with larger berry size, compensated for some disease losses. Production increased by 10 per cent in 2010–11 to 368 000 tonnes. In the Big Rivers zone, where disease pressure affected the quality of some fruit, the total harvest was around the same as the previous season at 260 000 tonnes.

In 2010–11 the warm climate regions (Lower Murray of South Australia, Big Rivers of New South Wales and the Murray–Darling – Swan hill zone of New South Wales/Victoria) continued to account for the majority of wine grapes produced in Australia, with a share of around 62 per cent of total production. This share was slightly higher than in 2009–10 (by 4 percentage points) because 2009–10 production was adversely affected by both reduced irrigation water supplies in some regions and the prolonged heatwave in November 2009 in parts of south-eastern

Australia. The heatwave reduced the flowering and early fruit setting of later bearing varieties such as cabernet sauvignon.

Within the cool climate zones (which includes all Australian wine producing zones other than those defined as warm climate zones), wine grape production fell 2 per cent in 2010–11 relative to 2009–10. However, year-on-year production changes were highly variable between regions. Despite the significant production declines in the Limestone Coast zone, the North East Victoria zone, and the North West and Western Victoria zone, several zones experienced a significant increase in production. For example, in the Central Ranges zone of New South Wales, wine grape production increased 38 per cent to 29 000 tonnes, while in the Greater Perth zone production increased by 35 per cent to almost 9000 tonnes.

Wine grape production 2011–12 to 2013–14

Wine grape production in 2011–12 is forecast to be slightly lower than in 2010–11, at 1.53 million tonnes (Table 1). For many regions in eastern Australia the damage sustained by vineyards during the wet 2010–11 growing season negatively affected this year's yields, since fruit setting in any given season occurs about four weeks after bud burst in the previous season. Fewer bunches and smaller berries has led to yields well below the longer-term averages in many eastern zones. The cooler and wetter than average growing season in eastern Australia has again increased the risk of diseases, such as downy and powdery mildew. This has necessitated the use of vigilant canopy management practices. Similar to last year, ongoing humid conditions late in the season could increase the incidence of botrytis, a fungus which causes the berry to become overripe on the vine, resulting in shriveled, raisin-like clusters of fruit. This could further damage grapes before harvest is complete.

The decline in grape production is forecast to occur principally in New South Wales and South Australia. In both states, yields are generally lighter across all varieties as a result of the damage sustained by the vines last season, although grape quality is reported to be good. Yields in some eastern regions were also affected by several heavy and prolonged rainfall events late in the season.

Table 1 Production of wine grapes in Australia

	Estimated production	Projected production		
	2010–11 kt	2011–12 ^f kt	2012–13 ^z kt	2013–14 ^z kt
South Australia	740	719	727	733
Murray–Darling – Swan Hill	343	343	343	343
New South Wales	318	305	329	332
Victoria	83	89	93	94
Western Australia	70	72	72	72
Tasmania	8	8	8	8
Queensland	1	1	1	1
Australia	1 564	1 532	1 613	1 628

^f Forecast. ^z Projection.

Data source: ABS 2011; ABARES

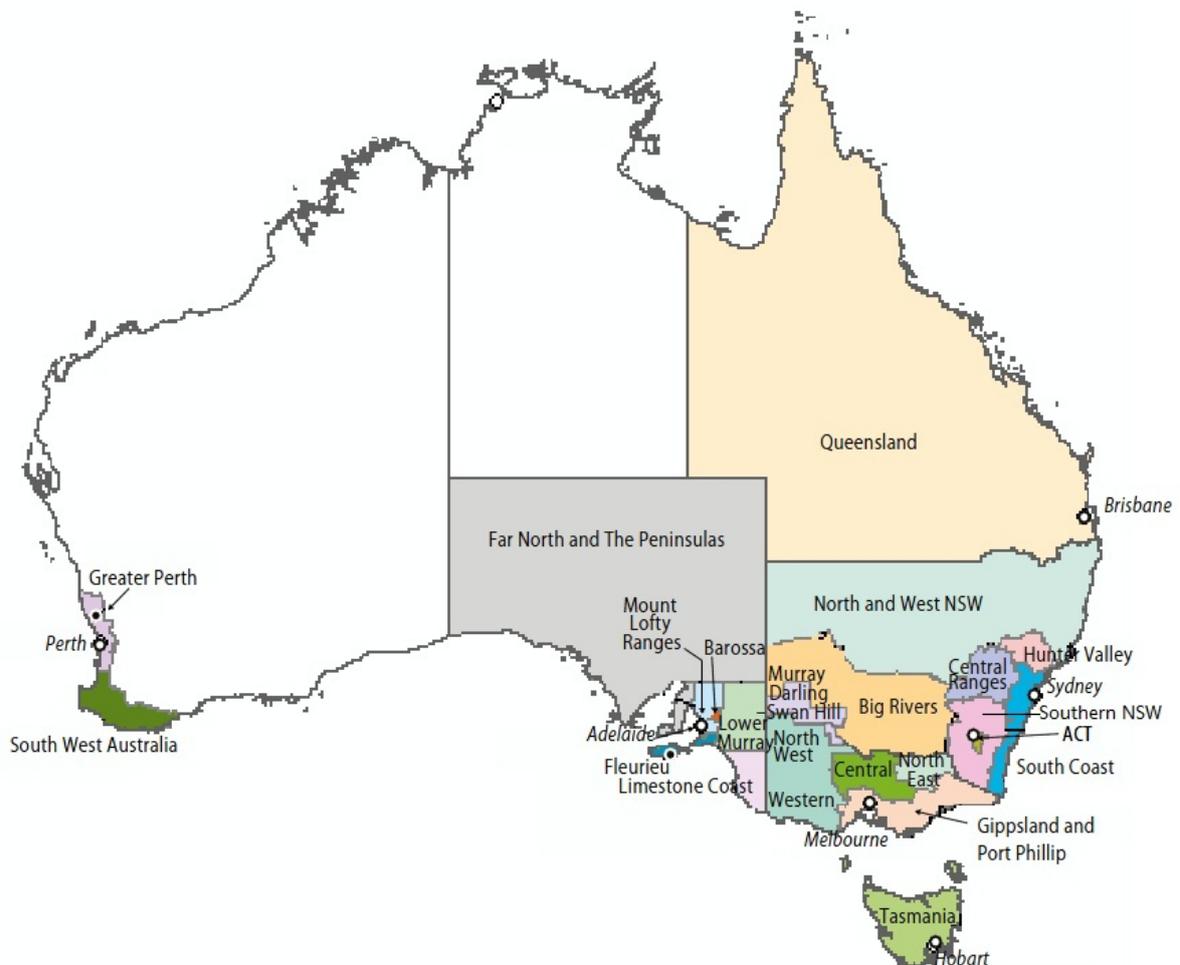
Looking ahead, wine grape production in 2012-13 is forecast to increase by 5 per cent, to around 1.61 million tonnes, assuming drier seasonal conditions in eastern Australia than in the past two years. In 2013-14, production is projected to increase slightly to 1.63 million tonnes. This forecast primarily reflects a return to average yields (that is, without the disease pressures of the past two years) and a slight increase in bearing area. An expected increase in the bearing area is due to vines planted over the past three years coming into full bearing.

1 Introduction

The wine grape production estimates presented in this paper are part of a series of annual projections produced by ABARES since 1988 for the Grape and Wine Research and Development Corporation and its predecessor.

This report provides estimates by the Australian Bureau of Statistics (ABS) of total wine grape production in 2010–11, as well as projections by ABARES of total production in 2011–12, 2012–13 and 2013–14. Production estimates are made for 23 wine grape producing zones across Australia. Base data for the estimates rely on the annual viticultural census undertaken by the ABS before 2009 and in 2010, which was a census of all vineyards within the scope of the population. In 2009, the ABS data were collected through a vineyards survey and covered only nine premium wine grape varieties. In 2011 the vineyards data were collected as part of the ABS *Agricultural Census* and was limited to four questions relating to total wine production, with no distinction by variety. This year, the ABS vineyards collection was again the sole source of vine bearing area data used as the basis of ABARES production projections.

Map 1 Wine grape zone of Australia



Note: Each coloured area depicts an Australian geographical indication (GI) zone.

In this analysis, a distinction is made between warm and cool climate zones. The warm climate grape growing zones include the Lower Murray zone, the Murray–Darling – Swan Hill zone and the Big Rivers zone. These zones are characterised by a greater reliance on irrigation, higher yields and generally lower wine grape prices than the cool climate zones.

Between 2006 and 2009, ABARE reported wine grape production using geographical indication (GI) regions as defined in the Register of Protected Names, which is maintained by Wine Australia (formerly the Australian Wine and Brandy Corporation). In 2010, on account of reductions to the coverage of the 2009 ABS *Vineyards Estimates*, vineyards data and production estimates used by ABARES were reported at the zone level (Map 1). To maintain consistency with the 2009 and 2010 production projections reports, similar reporting was adopted for this report.

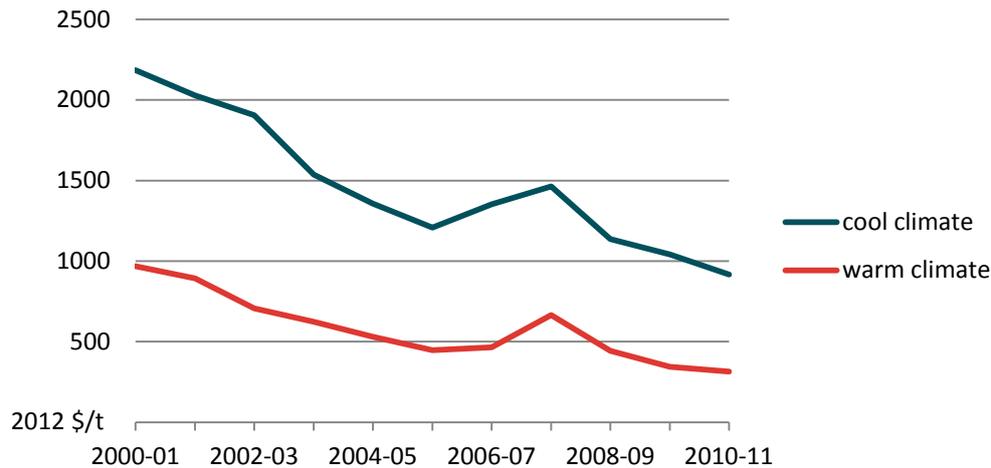
Overview of prices and industry developments

Wine grape production in Australia increased rapidly over the past 20 years, primarily driven by strong demand for Australian wine in export markets. During this period, relatively high wine grape prices led to a rapid expansion of Australia's vineyard area.

However, in recent years the growth in demand for Australian wine has slowed considerably, as competition in export markets increased. This has placed downward pressure on both wine and wine grape prices. In response to increased international competition, the proportion of wine exports being shipped in bulk has increased, placing further downward pressure on wine and, by extension, wine grape prices. In 2010–11, Australia shipped 47 per cent of its total wine exports in bulk, compared with 40 per cent in 2009–10 and 13 per cent in 2000–01. About 67 per cent of the wine exported by Australia in 2010–11 had a value of less than \$5.00 a litre, compared with 41 per cent in 2000–01.

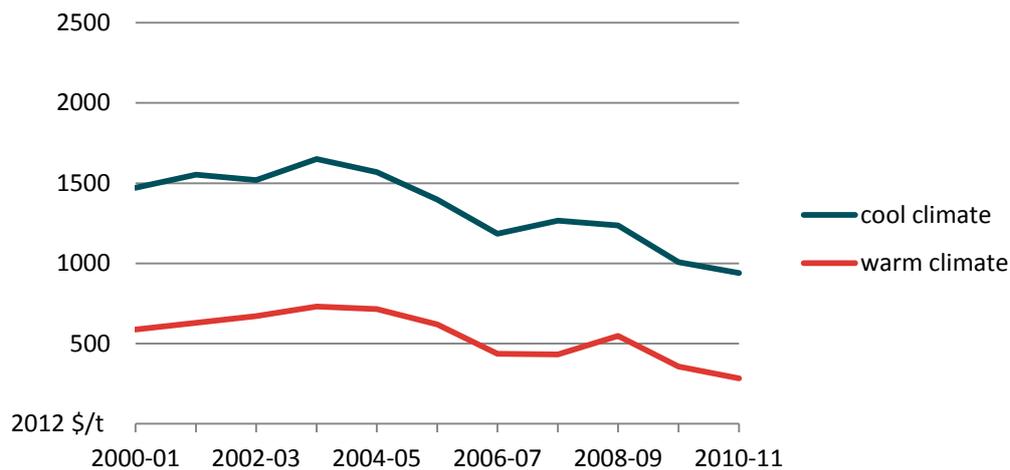
Continued weak global demand for wine in 2010–11 was once again reflected in the lower prices wineries offered for wine grapes. Data from Wine Australia's 2011 *Winegrape purchases: price dispersion report* provides estimates of average wine grape prices by region and variety. With the exception of 2007–08, real and nominal wine grape prices have been declining annually over the past decade. The prices offered for the 2010–11 vintage declined further in most regions (Figure 1 and Figure 2). The average price of wine grapes in Australia fell by 11 per cent in 2010–11, to \$413 a tonne, the lowest price in over a decade. The price decline was particularly pronounced in the cool climate regions, where the average price of red and white wine grapes fell by 12 per cent and 10 per cent, respectively, in 2010–11 to \$917 a tonne and \$846 a tonne. In the warm climate regions, the decline in average wine grape prices was less significant. Red wine grape prices fell by 9 per cent to average \$314 a tonne and white wine grape prices fell almost 4 per cent to \$272 a tonne.

Figure 1 Average Australian red wine grape price



Data source: Wine Australia 2011 (and previous issues); ABARES

Figure 2 Average Australian white wine grape price



Data source: Wine Australia 2011 (and previous issues); ABARES

In the coming years, the Australian wine industry is expected to continue to face strong competition in both the domestic and export markets. The abundant supply of wine on the world market, the global economic slowdown and a strong Australian dollar relative to the currencies of Australia’s major wine export destinations will continue to put downward pressure on demand for Australian wine. As a result, wine grape prices are expected to remain subdued. Forecast relatively low prices reflect, in part, the higher proportion of wine being shipped as bulk and the effect from forecast higher production. Based on past plantings, it is estimated that there are still more than 6200 hectares of non-bearing vines that are expected to come into bearing in the coming years. In addition, the exceptionally wet seasons in eastern Australia in 2010–11 and 2011–12 have boosted irrigation water storages, which should provide more certainty for the availability of water in the coming seasons. Both these factors support higher Australian production in 2012–13 and 2013–14.

2 Wine grape production projections to 2013–14

Wine grape production, 2010–11

In 2010–11, around 1.56 tonnes of grapes were harvested for winemaking, which is an increase of around 2 per cent from the 2009–10 harvest of 1.53 million tonnes. Favourable growing conditions in many regions, and diligent spraying regimes in the more humid regions, resulted in an increased number of bunches and larger berry size, which more than offset weather-related losses. Higher national production occurred despite the damp humid conditions in both warm and cool regions, which resulted in increased outbreaks of disease (such as downy and powdery mildew and botrytis) and flooding in parts of Victoria. In addition, according to the ABS, there were an estimated 5819 hectares of vines removed during 2010–11.

In 2010–11, wine grape production increased in all states except Victoria and Queensland, where production fell by 1 per cent and 26 per cent, respectively. Despite significant rainfall through most of eastern Australia, as well as flooding in some regions, wine grape yields rose by an average of 10 per cent across the three warm climate zones and by an average of 3 per cent in the cool climate zones.

In 2010–11, total bearing area increased by 1.5 per cent relative to 2009–10 to 154 030 hectares. The total non-bearing area—which accounts for vines planted before the 2010–11 harvest—was 29 per cent higher at 6270 hectares. This is an increase of 1426 hectares year-on-year, which can be attributed to vines being planted in the year leading up to the 2010–11 harvest. Just over two-thirds of the total increase in non-bearing area between 2009–10 and 2010–11 can be attributed to plantings in the Murray–Darling – Swan Hill zone (393 hectares), the Mount Lofty Ranges zone (389 hectares) and the Lower Murray zone (200 hectares). Over a few years, the non-bearing areas will come into bearing, assuming those vineyards are not abandoned or removed.

Before 2010–11, the ABS reported the area of grapes left on the vine or dropped on the ground, as well as the area of vines removed (grubbed) or abandoned. This information provided an indication of the loss of potential production in the given year and the changing composition of the crop. In 2010–11, the ABS only reported the area of vines removed or abandoned in the year up to harvest. Because the per hectare cost of grubbing vines is quite high, a producer would only grub a vineyard if future activities had a higher expected rate of return. For example, vines might be grubbed to be replaced by newer stock that is expected to yield a higher return than the current stock, or because a producer is exiting the industry and converting the property to another use. Abandoning vines is a low cost option that producers can exercise when exiting the industry. Given the increase in the national bearing and non-bearing areas in 2010–11, the impact on national production of lost production from grubbed or abandoned vines is estimated to have been offset by younger vines coming into bearing, either in the same region or elsewhere.

The ABS reports that, in 2010–11, 5819 hectares were grubbed or abandoned in Australia, a 29 per cent decline from 2009–10 (Table 2). The only states where there was a net increase in the number of hectares of grape vines taken out of production were New South Wales and Queensland. In New South Wales, 1701 hectares of grapevines were grubbed, a 67 per cent increase from a year earlier, while in Queensland more than double the area was taken out of production (76 hectares). In New South Wales, grubblings and abandonments were highest in the

Central Ranges and Hunter Valley zones, where the area removed from production increased by 500 per cent and 194 per cent, respectively. While a portion of the grubbed vines may be replaced, the fall in bearing area for both those zones in 2010–11 suggests there was some consolidation of the industry occurring in those regions. In South Australia, the number of vines grubbed or abandoned fell in every major wine grape producing zone. In Victoria, 577 hectares of wine grapes were removed from production, 36 per cent less than a year earlier. The only zone in Victoria to increase the number of hectares removed from wine grape production was the North East zone, where low prices, fewer buyers, a lack of contracts and difficult seasonal conditions have increased the cost of production, causing some growers to leave the industry.

Table 2 Area removed by grubbing or abandoned

	2009–10	2010–11
	ha	ha
South Australia		
Barossa	430	228
Mt Lofty Ranges	412	220
Fleurieu	585	234
Limestone Coast	339	248
Lower Murray a	1 881	499
Far North and The Peninsulas	2	15
Total	3 650	1 444
New South Wales and ACT		
Hunter Valley	216	635
Big Rivers (excl. Murray–Darling) a	590	368
Central Ranges	99	594
Rest of NSW and ACT	113	104
Total	1 018	1 701
Greater Victoria		
Central	250	120
North East	246	260
Gippsland and Port Phillip	178	156
North West and Western Victoria	224	41
Total	897	577
Murray–Darling – Swan Hill a	1 623	1 351
Western Australia	930	658
Tasmania	10	10
Queensland	36	76
Australia	8 164	5 819

a Warm climate zone.

Data source: ABS 2011, 2010

Wine grape production, 2011–12

The bearing area of wine grapes (which excludes multipurpose vines for drying and table use) is forecast to increase by 1 per cent in 2011–12 to 155 819 hectares (Table 3). This follows the 1.5 per cent increase in bearing area experienced in 2010–11 at 154 030 hectares.

For the second year in a row, the seasonal conditions have been challenging for some regions, particularly in eastern New South Wales and north-east Victoria. Wine grape production is forecast to be 1.53 million tonnes in 2011–12, 2 per cent lower than in 2010–11 (Table 4). For most regions in eastern Australia, average wine grape yields are below the five-year average to 2010 (the last year the ABS released variety-specific data) and are reportedly similar to last year's yields, albeit for a different reason. Last year, wine grape yields fell significantly below average because of the wet and humid growing conditions, which left many growers contending with crop losses, flooding and diseases such as downy and powdery mildew. This year, lower than average yields are the result of the lower fruit set, which is determined in the previous season. As a result, vines generally had fewer grape bunches with smaller berries. Despite the lighter crop, the quality of this year's crop is expected to be better than last year's vintage.

Persistent rainfall in the eastern states that began in late January required growers to be vigilant in their canopy management regimes to control for outbreaks of disease. Because seasonal temperatures over the season were relatively mild and the crops lighter, harvest in many eastern regions began earlier than usual. This proved fortuitous for those regions that managed to start harvesting before the heavy rainfall event in late February and into March across New South Wales and north-east Victoria. For those regions that had not finished, or just begun, harvesting, the persistent and sometimes heavy summer rainfall resulted in some crop losses and downgrading of fruit.

The impact of the heavy late summer rains was highly variable. Some vineyards in zones such as the Hunter Valley and Central Ranges sustained significant damage, which caused some growers to abandon their crop, particularly those growing shiraz. In the Central Victoria and North East Victoria zones, the quality of the grapes was affected, with reports of berries splitting and outbreaks of botrytis in varieties like chardonnay, pinot noir and cabernet sauvignon. The production projections take account of these climatic events through an adjustment in yields following consultation with industry sources in many regions. They also recognise that late incidences of botrytis could further affect the total harvest volume in some zones.

Projected wine grape production, 2012–13 and 2013–14

Wine grape production is projected to increase by 5 per cent to 1.61 million tonnes in 2012–13 and a further 1 per cent to 1.63 million tonnes in 2013–14 (Figure 3). This forecast is primarily based on the assumption of favourable seasonal conditions (that is, without the occurrence of a severe weather event), a recovery in yields to their long-term average, plus a small increase in bearing areas. The average yield of wine grapes is forecast to be 10.24 tonnes a hectare in 2012–13 and the bearing area around 157 530 hectares. In 2013–14 the average yield is expected to remain relatively unchanged while bearing area is forecast to increase slightly to 158 804 (Table 3). While prices are reported to have strengthened slightly in some areas, such as the warm inland regions and South Australia, no further significant increase is anticipated in the short term. Continued low prices being received by growers in many regions are likely to result in fewer new vines being planted by small operations, particularly in the cool climate zones of New South Wales and eastern Victoria. In those zones, several consecutive difficult seasons have led to a reduction in the number of growers with smaller properties.

Table 3 Estimated and projected wine grape bearing areas in Australia, by zone

	Estimated area		Projected area	
	2010–11 ha	2011–12f ha	2012–13z ha	2013–14z ha
South Australia				
Barossa	11 981	12 155	12 356	12 442
Mt Lofty Ranges	10 073	10 245	10 453	10 567
Fleurieu	15 559	15 606	15 640	15 694
Limestone Coast	15 324	15 418	15 461	15 478
Lower Murray a	19 130	19 306	19 458	19 735
Far North and The Peninsulas	317	333	350	350
Total	72 384	73 062	73 718	74 266
New South Wales and ACT				
Hunter Valley	3 452	3 517	3 517	3 541
Big Rivers (excl. Murray–Darling) a	18 889	19 144	19 297	19 425
Central Ranges	5 828	5 897	5 982	6 025
North and West New South Wales	974	978	1 017	1 048
Southern New South Wales	1 679	1 723	1 746	1 784
South Coast	329	331	332	332
ACT	99	99	99	99
Total	31 249	31 688	31 990	32 255
Victoria				
Central	5 083	5 201	5 260	5 298
North East	3 337	3 187	3 226	3 235
Gippsland and Port Phillip	5 174	5 263	5 297	5 355
North West and Western Victoria	2 130	2 173	2 209	2 249
Total	15 724	15 825	15 992	16 137
Western Australia				
South West Australia	10 270	10 323	10 429	10 466
Greater Perth and Other WA	1 467	1 489	1 492	1 510
Total	11 737	11 813	11 921	11 976
Murray–Darling – Swan Hill a	20 653	21 133	21 558	21 795
Tasmania	1 401	1 401	1 439	1 457
Queensland	883	898	914	918
Australia	154 030	155 819	157 532	158 804

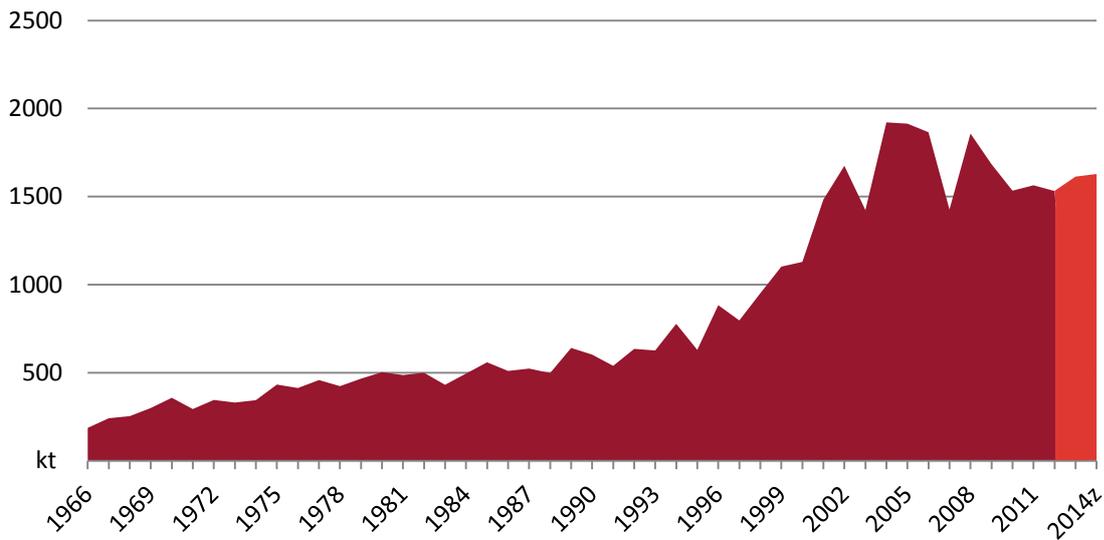
a Warm climate zone. f Forecast. z Projection.

Table 4 Estimated and projected wine grape production in Australia, by zone

	Estimated	Projected production		
	2010–11 kt	2011–12 ^f kt	2012–13 ^z kt	2013–14 ^z kt
South Australia				
Barossa	87	73	79	80
Mt Lofty Ranges	74	70	73	74
Fleurieu	127	122	123	124
Limestone Coast	82	102	111	111
Lower Murray a	368	352	339	343
Far North and The Peninsulas	1	2	2	2
Total	740	719	727	733
New South Wales and ACT				
Hunter Valley	17	16	18	18
Big Rivers (excl. Murray–Darling) a	260	246	258	259
Central Ranges	29	27	36	37
North and West New South Wales	3	3	5	5
Southern New South Wales	9	10	11	11
South Coast	1	1	1	1
ACT	1	1	1	1
Total	319	304	330	333
Victoria				
Central	30	32	34	34
North East	17	20	21	21
Gippsland and Port Phillip	28	27	27	27
North West and Western Victoria	7	11	11	11
Total	83	89	93	94
Western Australia				
South West Australia	61	63	63	63
Greater Perth and Other WA	9	9	9	9
Total	70	72	72	72
Murray–Darling – Swan Hill a	343	335	381	385
Tasmania	8	9	8	8
Queensland	1	2	2	2
Australia	1 564	1 532	1 613	1 628

a Warm climate zone. f Forecast. z Projection.

Figure 3 Australian wine grape production



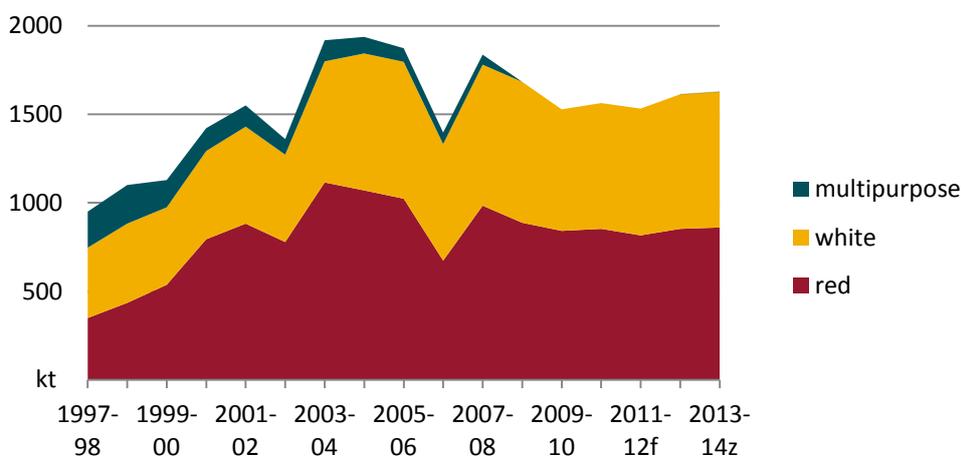
z Projection.

Note: These are financial year for example 2014= 2013-14.

Data source: ABS 2011; ABS 2010 (and previous issues); ABARES

Red wine grapes are expected to account for the majority of wine grape production in Australia through the projection period. In the five years to 2009–10, an average of 61 per cent of Australia’s total bearing area was planted to red wine grape varieties. Assuming this proportion remains steady over the projection period, the area planted to red wine grapes in 2013–14 is projected to be about 97 000 hectares, and production around 860 000 tonnes (Figure 4). The bearing area for red wine grapes has historically been larger than the area for white wine grapes, although yields of red wine grapes are lower than the white varieties. In the five years to 2009–10, yields of red wine grapes averaged around 40 per cent lower than for white wine grape varieties.

Figure 4 Australian wine grape production, by category



f Forecast. z Projection.

Note: Starting in 2008–09, multipurpose grapes are no longer reported separately from red and white grapes. 2010–11 is an

ABARES estimate.

Data source: ABS 2011; ABS 2010; ABARES.

Production in the warm climate zones

The warm climate zones across Australia produce approximately 60 per cent of the national crop. These regions include the Lower Murray zone of South Australia, the Big Rivers zone in New South Wales and the Murray–Darling – Swan Hill zone, which covers parts of both Victoria and New South Wales. As a result, significant changes to production in these regions have the potential to markedly affect national production.

In 2011–12, yields across the warm climate zones are forecast to average around 16.7 tonnes a hectare, compared with 18.0 tonnes a hectare in 2010–11. Lower yields this year can be attributed to three factors: the low fruit set last season; fungal infection in the vines that carried over from last year; and big canopies stemming from high soil moisture. Following the wet conditions of 2011–12, there has been greater vigilance with canopy and disease management practices, such as thinning and spraying, across the regions.

With fewer bunches and smaller berries, the generally favourable seasonal conditions led to an earlier harvest in all three warm climate zones. Production in each of the zones is forecast to be slightly lower in 2011–12, although the quality of the grapes is expected to be significantly better than for the 2010–11 vintage.

In the two years to 2013–14, wine grape production in the warm climate zones is expected to increase by 6 per cent, relative to 2011–12. This projection is based on the assumption of favourable seasonal conditions and, accordingly, a recovery in the yields in these zones from the levels of 2011–12.

Lower Murray

In the Lower Murray zone, seasonal conditions have been favourable, with conditions generally cooler than in the mid-2000s. The cooler conditions provide a boost to the quality of the grapes because they allow for the continuous accumulation of sugars in the grapes (high temperatures delay this process). While heavy rainfall in late January has raised the incidence of disease, the vigilant use of disease control measures this season is reported to have controlled outbreaks better than last season. Yields for chardonnay, which historically accounts for about one-quarter of the zone's production, are below average for the region as a whole, despite some variations across the region. Yields for red varieties such as cabernet sauvignon, merlot and shiraz are generally close to average. Production is forecast to be about 4 per cent lower in 2011–12 compared with 2010–11.

Murray–Darling – Swan Hill

In the Murray–Darling – Swan Hill zone, seasonal conditions have been favourable, with generally cooler conditions and good rainfall. Yields of chardonnay, sauvignon blanc, pinot grigio and cabernet sauvignon are expected to be lower this season compared with the five-year average to 2010. This follows the high incidence of downy mildew and botrytis in these varieties last season. Production for the zone is forecast to be about 2 per cent lower in 2011–12 compared with 2010–11.

Big Rivers (excluding Murray–Darling)

In the Big Rivers zone, the vintage is also lighter as a result of last year's wet season. Unlike past years, which were marked with heat waves, temperatures during the growing season have been

consistently mild. Yields for chardonnay, sauvignon blanc and shiraz are expected to be lower in 2011–12 compared with 2010–11, although yields for merlot are expected to be higher. Because the lighter crop precipitated an early harvest, by the time heavy rainfalls crossed over the region in mid-February, more than 70 per cent of the region's wine grapes (including virtually all of the white wine grape varieties) had been harvested. While some individual vineyards were badly affected by heavy rainfall, production in the Big Rivers zone as a whole is forecast to be about 5 per cent lower in 2011–12 compared with last season.

Production in the cool climate zones

In 2011–12, wine grape production in cool climate zones (which include all other Australian zones outside of the three warm climate zones) is expected to increase by 1 per cent compared with 2010–11. Seasonal conditions in the eastern states can generally be characterised as mild and wet. Following the wet 2010–11 season, canopy management practices were more vigilantly applied throughout the 2011–12 season. These methods were successful at controlling the incidence of disease, although some outbreaks did occur. Significant rainfall in late February and early March 2012 reduced potential production in some regions, particularly for later bearing varieties.

In the two years to 2013–14, wine grape production in the cool climate zones is expected to increase by a total of 7 per cent relative to 2011–12. This projection is based on the assumption of favourable seasonal conditions and, accordingly, a recovery to longer-term averages following two wet seasons.

South Australia

In South Australia, summer rainfall in 2011–12 across the cool climate wine grape growing zones has been variable. While rainfall in the Limestone Coast zone was below average, in the Far North and The Peninsulas zone it was average to above average. Wine grapes are generally deemed to be of higher quality across the cool climate zones this year compared with last year, although the uncommonly wet seasonal conditions resulted in a rise in the incidence of disease. Similar to the warm climate zones, yields are expected to be lighter in 2011–12 on account of lower fruit set. Yields of shiraz are expected to be significantly below average, while yields of cabernet sauvignon are also expected to be below average. Yields of white varieties are expected to be close to their longer-term average.

In the Barossa zone, yields of white wine grape varieties are expected to be average, while red varieties have been affected by rainfall. Canopy management was a significant issue mid-season because of the above average summer rainfall (BOM 2012c). Yields for shiraz, which accounts for roughly half of the bearing area in the Barossa zone and which is a variety sensitive to temperature and moisture, are expected to be between 10 and 30 per cent lower than average across the zone. This is the result of lower fruit set last year compounded by the challenges posed by this season's rainfall events.

For the Mount Lofty Ranges zone and the Fleurieu zone, yields of both red and white varieties in 2011–12 are expected to be lighter than average because of the lower fruit set last season. Yields of shiraz are expected to be lower than average, particularly in the Fleurieu zone where incidences of powdery and downy mildew have been reported. Although growing conditions have been generally good, reports of botrytis in the Mount Lofty Ranges zone could also affect yields.

The start of the 2011–12 season was favourable in the Limestone Coast zone. Conditions were mild and soil moisture profiles were high. The heat that followed in early 2012 accelerated the growing season, causing harvest to begin earlier than usual. Good canopy and vineyard management this season has abated any significant recurrence of disease carried over from last year. However, yields across the zone are expected to be down slightly from their longer-term averages following the lower fruit set last season. Berry size for varieties such as merlot and cabernet sauvignon are smaller this season, as both varieties are sensitive to soil and climatic condition in this region. In contrast, yields of chardonnay are expected to be slightly higher than average.

The Far North and The Peninsulas zone experienced average to above average summer rainfall, with some heavy rainfall events in late December 2011 and early January 2012. While some resultant incidences of disease were likely, more vigilant canopy management practices used this year are expected to lead to yields reaching their longer-term averages across the zone.

New South Wales and the ACT

For a second year in a row, New South Wales recorded above average rainfall through most of the state in 2011–12. The sustained wet conditions during summer followed the wet end to spring, and were largely influenced by the La Niña event in the Pacific Ocean during the season (BOM 2012a). This posed significant challenges for growers in the cool climate wine grape growing regions of the state, particularly later in the season when the frequency and magnitude of the rainfall events increased. Despite improved canopy management practices used throughout the season, the intensity of the rains in some areas led to outbreaks of disease and crop losses. Production in the cool climate regions of New South Wales is expected to fall by about 1 per cent in 2011–12 relative to last year's vintage.

In the Hunter Valley zone, lower yields attributed to last year's fruit set were further exacerbated by the cool and wet 2011–12 season. Yields of both red and white varieties are reported to be significantly lower than average this season, particularly shiraz. While the late season rainfall flooded some vineyards, it was the persistent rain through February and March that led to crop losses. For many small growers in the Hunter Valley, production of premium red varieties was reported to have been significantly reduced because of the rain, with splitting of berries and increased incidence of botrytis. Production of white wine grapes, which were mostly harvested before the rain, is reported to have fallen only slightly. Wine grape production is expected to be about 4 per cent lower in 2011–12 compared with last season.

In the Central Ranges zone, yields are reported to be significantly lower than the longer-term average as a result of lower fruit set last season. The cool and wet season has required vigilant canopy management practices to cope with the regular rainfalls and resulting incidences of disease. The impact of the late-season rains varied across the regions, although shiraz was affected most across the zone. Wine grape production in 2011–12 is expected to be about 7 per cent lower compared with last season.

The seasonal conditions in the Southern New South Wales zone and the South Coast zone have mirrored that of the Central Ranges zone. Given the humid seasonal conditions, harvest began earlier than usual in 2011–12 as many growers chose to pick less-than-optimal grapes rather than risk loss to their crop because of future rains. A significant proportion of the white varieties were harvested before the late-season rainfall, so losses generally were not significant. Red varieties sustained more damage from these rains, although most were salvageable on account of the open canopies.

In the ACT zone, yields in 2011–12 are expected to be about 10 to 15 per cent below average because of the lower fruit set that occurred last season. While there was some disease pressure in December when the growing conditions were wet, it was less serious than in 2010–11. Growers thinned canopies to increase air flow and sunlight penetration, which in turn mitigated disease pressures. Given the generally cool and wet season, growers have also employed a strong spray program to control for downy mildew.

In the North and West New South Wales zone, which includes regions spanning across northern New South Wales, yields are assumed to be lower than their longer-term averages. Regional production in 2011–12 is expected to be relatively unchanged compared with 2010–11.

Victoria

In Victoria, summer rainfall in 2011–12 across the cool climate wine grape growing zones has been variable. While rainfall in the North West and Western Victoria zone was average to very much below average, it was average to very much above average in the Central Victoria and North East Victoria zones (BOM 2012e). Yields for most varieties this season are reported to be higher than last year, although many vineyards were affected by disease and suffered crop losses. Production is expected to be 8 per cent higher than last year's vintage.

Across the Central Victoria zone, yields are expected to be variable compared with their longer-term averages. While the Goulburn Valley has experienced a relatively good season, Bendigo's season has been less than optimal. In the Goulburn Valley, heavy rainfall in early March resulted in fruit quality being downgraded, particularly for shiraz. In Bendigo, yields of red and white varieties are reported to be significantly below average, although fruit quality is high. Yields of shiraz around Bendigo are reportedly higher than last year when disease affected vines. For the zone as a whole, production in 2011–12 is expected to be 5 per cent higher than in 2010–11.

In the Gippsland and Port Phillip and zone, summer rainfall was average (BOM 2012e). Around the Mornington Peninsula yields are generally lighter this year because of smaller bunches generally. While there were reports of disease pressure in some blocks in the Yarra Valley, yields for both red and white varieties are close to their longer-term averages, with grape quality reported to be high. Production for the zone is forecast to be 4 per cent lower in 2011–12 relative to 2010–11.

In the North East Victoria zone, seasonal conditions have been mild, with no excessively hot days and lots of moisture. This allowed vines to ripen well, leading to a slightly early harvest. Yields before the heavy rainfall in late February and early March were reported to be close to the longer-term averages for most varieties across the zone, with some exceptions, such as in the Alpine Valley. By the time of the heavy rainfall events, chardonnay and sauvignon blanc had been mostly harvested, although some losses did occur for white varieties remaining on the vine. Red varieties stood up particularly well to the rains, although in the north-east and high elevations botrytis was detected in varieties like pinot noir and cabernet sauvignon. Many vineyards in those areas opted to harvest by hand to trim out the affected bunches, thereby averting losses. In addition, the splitting of soft-skinned varieties like riesling, chardonnay, shiraz and merlot did not occur widely across the zone. Production for the zone is forecast to be 17 per cent higher in 2011–12 compared with last season, largely because of the significant improvement in red wine grape yields.

In the North West and Western Victoria zone where summer rainfall ranged from average to very much below average, yields are assumed to increase from last season, to be closer to their

longer-term averages. Production for the zone is forecast to be 10 600 tonnes in 2011–12, 3400 tonnes higher than the previous vintage.

Western Australia

In contrast to eastern Australia, the 2010–11 season in Western Australia was dry and the vintage is reported to have been good. Summer rainfall in the Greater Perth zone was above average (BOM 2012f). There were some reported incidences of powdery mildew, bunch rot and delayed ripening on later-developing varieties in the Swan District. However, on the whole fruit quality is still good. In the South West Australia zone, summer rainfall was average (BOM 2012f). The vintage is reported to be good, with yields for both red and white varieties around their longer-term average. Production in Western Australia in 2011–12 is forecast to be about 3 per cent higher than last season.

Tasmania

In Tasmania, high soil moisture and warm weather early in the 2011–12 season promoted large canopies, which resulted in a need for thinning to increase air and light penetration to reduce the incidence of disease. Despite below average summer rainfall for the state as a whole (BOM 2012d), a few heavy rainfall events in the north and south-east over summer assisted crop development. Vintage in 2011–12 is expected to be in line with the long-term average across all varieties. Production in 2011–12 is expected to be about 17 per cent higher than last season.

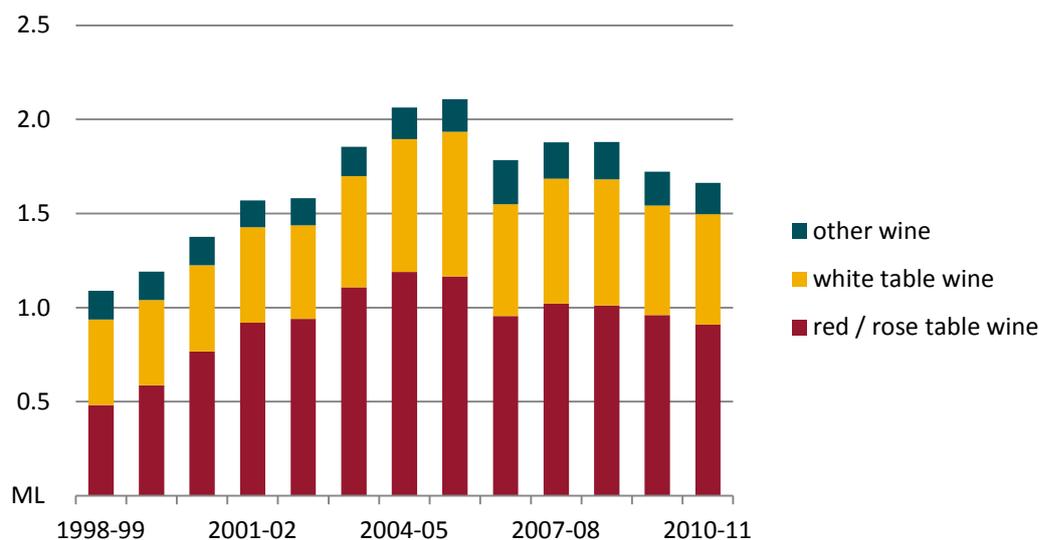
Queensland

In Queensland, seasonal conditions early in 2011–12 were favourable and wine grape yields were expected to be higher than the five-year average to 2010. However, above average rainfall in the South Burnett region in February (BOM 2012b) has increased the incidence of disease in some vineyards, downgrading yield expectations. Yields for the Queensland zone are expected to be roughly equivalent to the five-year average to 2010. Some exceptions are shiraz and sauvignon blanc, which are reportedly yielding higher than average.

3 Wine stocks

This report focuses on the supply of wine grapes, and hence wine, in Australia. One aspect of wine supply is stocks. Changing stocks reflect both responses to expected changes in future wine sales and differences in the growth of wine production and sales. Each year the ABS collects data on the quantity of wine held in stock by Australian wineries (Figure 5).

Figure 5 Stocks of Australian wine



Data source: ABS 2012

From the late 1980s to the early 2000s, the demand for Australian wine in export markets grew rapidly as interest in Australian wine increased. The increasing volume of stocks throughout this period reflected the expectation of further increases in wine sales and prices. These expectations were realised, and during this period the average price of wine exports increased in real terms.

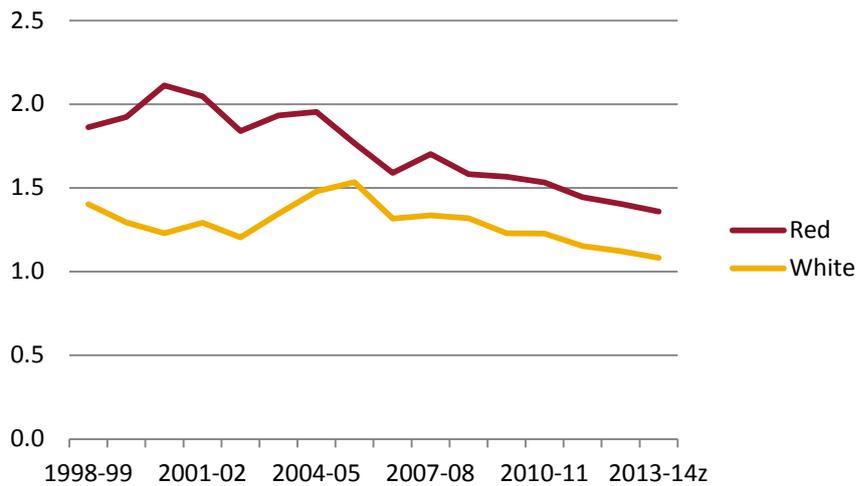
However, from the mid-2000s export growth slowed as competition in key markets increased. As a result, stocks accumulated during this period, as wine production growth outstripped sales growth and average wine export prices declined in real terms.

Because wine sales are typically made from stocks, the ratio of stocks to forward sales can be used to gauge changing market conditions. In the 10 years to 2010–11, the industry has maintained a stocks-to-forward sales ratio at around 1.3 for white table wine and 2 for red table wine.

The average stocks-to-forward sales ratio for table wine in 2010–11 was estimated to be 1.40, the lowest since 1994–95 (Figure 6). This decline can be attributed to lower production in 2010–11 compared with 2009–10 and higher expected domestic sales of table wine in 2011–12.

For red table wine, the ratio fell slightly to 1.53 in 2010–11, reflecting a proportionally greater fall in red wine stocks between 2009–10 and 2010–11 than the expected decline in forward sales (driven by lower export sales). For white table wine, the ratio remained largely unchanged at 1.23 on account of a slight increase in stocks and domestic sales.

Figure 6 Wine stocks-to-forward sales ratios



z Projection.

Data source: ABARES

Over the projection period to 2013-14, the stocks-to-forward sales ratios for both red and white table wine are forecast to decline further. In 2011-12, this decline is expected to occur because of a projected fall in production in that year, and a forecast increase in domestic sales in 2013-14. Going forward, although wine grape production is forecast to increase in 2012-13 and 2013-14 (on the assumption of improved seasonal conditions), forecast growth in exports and domestic sales in 2013-14 and 2014-15 is projected to lead to a reduction in the stocks-to-forward sales ratios for both red and white table wine. By 2013-14, the stocks-to-forward sales ratios for white and red table wine are projected to be 1.08 and 1.36, respectively.

Appendix A – Method

Projection procedure

The projections of wine grape production contained in this report are generated from estimates of yields and wine grape bearing areas. Projections are made for total wine grape production in each of the 23 wine-producing zones in Australia.

These wine zones are defined by the Australian Bureau of Statistics (ABS), which collects detailed statistics on the Australian grape growing industry each year from grape growers (ABS 2010, 2011). Australian geographical indication (GI) zones are official descriptions of Australian wine zones as defined in the *Australian Wine and Brandy Corporation Act 1980*. For more details on Australian GI zones, see the Wine Australia website at www.wineaustralia.com.

In 2011, the ABS again collected information about Australian wine grape production. Unlike previous years, the collection was part of the 2011 *Agricultural Census* rather than its own census. As such, only four pieces of information were collected from each GI region: total wine grape production; total bearing area; total non-bearing area; and the area removed from production by grubbing or abandoning to die after the 2010 harvest but before the 2011 harvest. In 2011, the non-bearing area data do not distinguish between what was planted or grafted on in the previous 12 months and what had been non-bearing for more than a year. As a result of the reduction in the scope of the 2011 data, it has not been possible to report detailed information on varieties for each of the GI regions. The scope of the 2011 vineyards collection was agricultural businesses recorded on the ABS Business Register (ABSBR) above a minimum size cut-off of \$5000. The measure of size was based on either the ABS estimated value of agricultural operations (EVAO) or a derived value based on business activity statement turnover. The ABS Business Register is based on the Australian Business Register, which is administered and maintained by the Australian Taxation Office (ABS 2011).

Until 2009, and again in 2010, the ABS conducted an annual census of Australian wine grape production, which included up to 48 different wine grape varieties and covered up to 94 wine-producing regions. In 2009, the scope of the data collected was reduced and only a survey was conducted. The ABS collected data for nine selected premium wine grape varieties, including bearing area, non-bearing area and the quantity harvested for winemaking. Information was also obtained about the amount of the non-bearing area that was planted or grafted on in the previous 12 months, as well as the area that was non-bearing for more than a year.

Despite the reduction in the scope of the data in 2009 and 2011, the collection continues to provide information about the current state of Australian viticulture and is crucial to the projections of future wine grape production reported here.

As grapes are perennial, the bearing area of grapes next year is determined mostly by the area of grape vines that are currently bearing fruit. It is also affected by the area of grapes planted or grafted on in previous years that will bear fruit next year (a portion of the current non-bearing area). In addition, it is possible that growers might take grape vines permanently out of production between the current harvest and next year's harvest, which is a practice known as grubbing. They may also abandon the vines to die if the cost of grubbing is prohibitive.

The need to merge data from the 2009 wine grape survey with the 2010 census data and the 2011 agricultural census data required some calibrating of estimates about the future bearing areas of wine grapes other than those reported in 2009. For 2011, production and bearing area

by variety were estimated by apportioning the reported total wine grape production and bearing area for each GI zone according to the share of production and bearing area by variety in 2010. These 2011 varietal estimates are not reported in this document but were used as a basis to apply changes to average yields across varieties within the GI zones. Based on this intertemporal relationship, the following model is used to estimate future production:

$$G_i \text{proj}_{t+1} = (BA_{i,t} + PL_i \text{proj}_{t-k} - RM_i \text{proj}_{t+1}) * Y_i \text{proj}_{t+1}$$

where $G_i \text{proj}_{t+1}$ is projected production of wine grape variety i at year $t+1$; $BA_{i,t}$ is the current bearing area; $PL_i \text{proj}_{t-k}$ is the portion of the current non-bearing area that was planted or grafted on in an earlier year $t-k$, but is projected to be bearing next harvest ($k = 3$ for warm climate regions and $k = 4$ for cool climate regions); $RM_i \text{proj}_{t+1}$ is the projected area of grape variety i that will be removed or grubbed next year; and $Y_i \text{proj}_{t+1}$ is the estimate of next year's yield per hectare for wine grape variety i . The portion of the current non-bearing area that is expected to come into bearing in the future is determined by estimating an age profile of the current non-bearing area that is more than one year old—that is, the area that was not planted (or grafted on) last year. For 2011, the non-bearing area that is less than one year old is estimated to be the difference between the total non-bearing area in 2011 and 2010.

The age profile of the non-bearing area that is two years of age and older is assumed to reflect the relative size of new plantings (and grafting on) over recent years. For the cool climate regions it is assumed that it takes four years for newly planted vines to reach a full commercial bearing age, while in the warm inland regions it is assumed to take three years. Hence, for warm climate regions, for example, the proportion of total plantings from two, three and four years ago is used to apportion the total non-bearing area that is currently reported to be at least two years old. The apportioned areas provide estimates of $PL_i \text{proj}_{t-k}$, the areas that are to become bearing in the future. For cool climates, total plantings from two, three, four and five years previously are used in a similar manner to determine the additions to bearing area in the future.

Ideally, the area grubbed next year should be subtracted from the bearing area. However, given the very small area of grapes that have historically been grubbed or grafted off according to ABS data, and that future decisions by growers to grub are too difficult to forecast with any objectivity, they were assumed to be zero and excluded from the projections model.

According to the model provided above, estimated wine grape production for the specified varieties in 2011–12 is calculated as the sum of 2010–11 bearing area and the portion of non-bearing area reported in 2010–11 that is expected to reach commercial bearing in 2011–12 (four years old in cool climate regions and three years old in warm climate regions), multiplied by the projected yield in 2011–12. To forecast grape production for the following year, 2012–13, the area expected to become bearing in 2012–13 is added to the estimate of the bearing area in 2011–12 and the total area multiplied by the projected yield.

Calibration

Previously, ABS estimates of wine grape bearing areas have been calibrated using production estimates collected by the Australian Regional Wine Grape Crush Survey (ARWCS). This was done because the ARWCS historically had greater coverage of wine grape growers and, accordingly, the production estimates from this survey were greater than those estimated by the ABS survey.

In recent years, the coverage of the ABS vineyards survey has increased, and the ABS estimate of wine grape production in 2007–08 was 4 per cent higher than the ARWCS estimate. As a result, ABS production estimates ceased being calibrated to the ARWCS results in 2008–09.

The ARWCS is no longer conducted, so the ABS is the sole source of data used for these projections. It should be noted that for some zones the projections contained in this report should not be compared with previous publications. Before 2009, this is mainly in the ‘other’ regions within GI zones where, because of less precise boundary definitions, there were large discrepancies between the ABS and ARWCS estimates. Some zones in 2009 also cannot be compared with previous years because of the ABS’s redefinition of some zones.

Multipurpose and some minor grape varieties are commonly used for purposes other than making wine. Therefore, production projections for these types of grapes based only on the bearing area of the vines would typically far exceed their use for wine. Accordingly, production estimates of multipurpose and minor variety grapes in projections before 2009 were calibrated using the proportion of these grapes that were used for making wine.

From 2009, the bearing area for multipurpose and minor grape varieties for purposes other than winemaking was excluded from the ABS *Vineyards Estimates* and 2011 *Vineyards Australia*. As a result, bearing areas from previous years were calibrated to that same area to allow comparisons between bearing area over time. For this reason, historical bearing areas reported in these projections will not match those from previous years’ projections.

Yields

Industry experts and contacts in various regions provided their own views of the effects that the current seasonal conditions had, and were having, on yields in their region. These views were taken into consideration when estimating the yields that were to be used to project production for the 2011–12 harvest. Five-year average yields, extending from 2005–06 and 2009–10, were applied for the following years. Because the ABS did not report across varieties in 2011, the calculation of five-year average yields excluded 2010–11.

Aggregation of regional projections

For reporting purposes, the projections of wine grape production are presented at the Australian and GI zone levels. The majority of ABS zones are identical to GI zones, but in some cases the ABS aggregated previously defined zones.

In some instances, such as for the Murray–Darling – Swan Hill GI, the GI zone is also the region (as reported in previous projections). In previous years, the tables for wine grape production in each of the 30 GI zones that were presented in appendix B were simply aggregations of the projections generated at the GI region level. In 2009, projections were conducted only at the zone level, with some GI zones aggregated according to the 2009 ABS *Vineyards Estimates*.

Appendix B – Australian wine grape production zones and varieties

Table B1 lists the ABS 2011 zones in each state, and the ABS regions within each zone.

Table B1 provides the complete list of wine grape varieties.

Table B1 Wine grape zones and regions of Australia

	Zone	Region
Murray Valley	Murray–Darling – Swan Hill a	Murray–Darling (NSW)/Swan Hill (NSW)/Murray–Darling (Vic)/Swan Hill (Vic)
New South Wales	Big Rivers (excl. Murray–Darling) a Central Ranges Southern NSW South Coast North and West NSW Hunter Valley	Perricoota/Riverina/other Cowra/Mudgee/Orange/other Canberra District (NSW)/Gundagai/Tumbarumba/Hilltops/other Shoalhaven Coast/Southern Highlands/other Western Plains/New England Australia/Hastings River/Northern Slopes/other Northern Rivers Hunter/other
Queensland	Queensland	Granite Belt/South Burnett/other
Greater Victoria	North East Victoria Central Victoria North West and Western Victoria Gippsland and Port Phillip	Alpine Valleys/Beechworth/Glenrowan/Rutherglen/King Valley/other Bendigo/Goulburn Valley/Heathcote/Strathbogie Ranges/Upper Goulburn/other Grampians/Henty/Pyrenees/other Western/other North West Geelong/Macedon Ranges/Mornington Peninsula/Sunbury/Yarra Valley/other Port Phillip/other Gippsland
South Australia	Mount Lofty Ranges Barossa Fleurieu Limestone Coast Lower Murray a Far North and the Peninsulas	Adelaide Hills/Adelaide Plains/Clare Valley/other Barossa Valley/Eden Valley/other Currency Creek/Kangaroo Island/Langhorne Creek/McLaren Vale/Southern Fleurieu/other Coonawarra/Mount Benson/Padthaway/Wrattonbully/Robe/Bordertown/other Riverland/other Southern Flinders Ranges/The Peninsulas/other Far North
Western Australia	Greater Perth South West Australia Other WA	Perth Hills/Swan District/Peel/other Blackwood Valley/Geographe/Great Southern/Margaret River/Manjimup/Pemberton/other Central WA/West Australian South East Coast/Eastern Plains, Inland and North of Western Australia
Tasmania	Tasmania	Tasmania
Australian Capital Territory	Australian Capital Territory	Canberra District (ACT)/other

a Warm climate zones.

Data source: ABS 2010

Table B2 Australian wine grape categories

Premium red	Premium white
Cabernet franc	Chardonnay a
Cabernet sauvignon a	Chenin blanc
Malbec	Colombard a
Merlot	Muscadelle
Petit verdot	Pinot gris
Pinot noir a	Riesling a
Ruby cabernet	Sauvignon blanc a
Shiraz a	Semillon a
	Traminer
	Verdelho
Non-premium red	Non-premium white
Grenache	Crouchen
Mataro	Doradillo
	Palomino
	Trebbiano
Minor red	Minor white
Meunier	Marsanne
Muscat a petit grains rouge	Muscat a petit grains blanc
Tarrango	Viognier
Barbera	
Carignan	
Nebbiolo	
Sangiovese	
Touriga	
Durif	
Tempranillo	
Zinfandel	
Multipurpose red	Multipurpose white
Currants	Muscat gordo blanco a
	Sultana
	Waltham cross

Note: 'Other' is a separate region and not part of the previous region name. **a** Selected varieties in the 2009 ABS *Vineyards Estimates*.

Data source: ABS 2010

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