Stage Three Report
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N A S D P

National Alcohol Sales Data Project

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NATIONAL DRUG RESEARCH INSTITUTE, CURTIN UNIVERSITY
NATIONAL ALCOHOL SALES DATA PROJECT
STAGE 3, FINAL REPORT

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ACRONYMS

Advisory Committee	AC
Population aged 15 and older	15+
Australian Bureau of Statistics	ABS
Australian Standard Geographical Classification	ASGC
Census Collection District	CCD
Distilled Spirits Industry Council of Australia	DSICA
Drug and Alcohol Office	DAO
Estimated Enumerated Population	EEP
Estimated Resident Population	ERP
Estimated Service Population	ESP
Intergovernmental Committee on Drugs	IGCD
Liquor Licensing	LL
Ministerial Council on Drug Strategy	MCDS
National Alcohol Indicators Project	NAIP
National Alcohol Sales Data Project	NASDP
National Drug Research Institute	NDRI
Office of Liquor and Gaming Regulation	OLGR
Per capita consumption	pcc
Per capita consumption derived from ERP	pcc/ERP
Per capita consumption derived from ESP	pcc/ESP
Pure alcohol content by volume	PACV
Ready to drink	RTD
Statistical Local Area	SLA
Statistical Subdivision	SSD
World Health Organization	WHO

GLOSSARY

Australian Standard Geographical Classification	ABS coding structure for Australian geographical information into pre-established categories, including Statistical Divisions, Statistical Subdivisions and Statistical Local Areas.
Alcohol sales data	Information obtained from wholesalers regarding volumes of alcohol purchased from them by individual licensed retailers, or licensed retailer records of volumes of alcohol sold to the general public.
Estimated Enumerated Population	Count of all persons living in all occupied dwellings on the night of the Census (every 5 years), irrespective of whether they are usually resident in the area or are visitors.
Estimated Resident Population	ABS measure of Australian population. Based on Census data adjusted for population change since the most recent Census year, net overseas migration and estimated interstate movements. Overseas visitors are excluded.
Estimated Service Population	Developed for use in the NASDP. Based on ERP, but accounts for absent residents, Australian visitors and international tourists.
Inter-censal years	Years between census collections.
Mead	Brewed honey-based beverage with an average alcohol content of 12.5%.
Per capita consumption	Litres of absolute (pure) alcohol consumed, divided by population aged 15 years and over.
Ready to drink	Pre-mixed spirit-based drinks with an alcohol content less than 10%.
Alcohol supply	Purchase of wholesale alcohol by other licensed alcohol wholesalers or producers.
Tourists	Persons travelling to a place other than that of his/her usual environment for less than twelve months (ABS, 2000).

EXECUTIVE SUMMARY

The global statistics on alcohol harm are sobering. In 2004 alcohol contributed to 2.3 million deaths and 69 million disability-adjusted life years globally. In Australia, the costs of alcohol abuse in 2004/05 exceeded $A15 billion.

Epidemiological monitoring of alcohol use and alcohol-related problems can inform and facilitate the development and evaluation of evidence-based strategies to deal with the problem of alcohol. Estimates of *per capita* consumption of alcohol across entire national populations provide policy makers with information about the magnitude of alcohol use and trends likely to be found in alcohol-related problems.

The Australian Bureau of Statistics (ABS) publishes national estimates of alcohol *per capita* consumption based on import clearance, excise and domestic alcohol sales data. The latest revised estimates for Australians over the age of 15 years (15+) taken at 30th June 2008, 2009 and 2010 were average annual consumptions of 10.56, 10.40 and 10.27 litres of absolute alcohol respectively.

Until 1996, the ABS estimates were complemented by state and territory alcohol sales data collected by liquor licensing authorities. In 1996, however, the High Court of Australia ruled that liquor licensing fees and levies were, in fact, excise duties and as such illegal under the terms of the Australian Constitution. The ruling did not preclude the collection of wholesale alcohol purchase data by liquor licensing authorities but, for most jurisdictions, the incentive for continued collection was lost. Only the Northern Territory, Queensland and Western Australia continued to collect this information.

The Australian Government, via the Intergovernmental Committee on Drug Strategy (IGCD), funded the Drug and Alcohol Office of Western Australia (DAO) and the National Drug Research Institute (NDRI) at Curtin University in Perth, to develop the National Alcohol Sales Data Project (NASDP). In 2012, the NASDP is in its third funding year (Stage 3) having completed Stages 1 and 2 in 2009 and 2011.

The overall objective of the NASDP is to construct an ongoing, regularly updated, national database of standardised alcohol sales data, which includes all Australian states/territories. The NASDP works closely with an Advisory Committee (AC) consisting of senior representatives of Liquor Licensing, Health and Police in every Australian jurisdiction, and

the Australian Government Department of Health and Ageing. In 2012, the Northern Territory, Queensland and Western Australia made alcohol sales data relating to the financial year 2009/10 available to the NASDP Stage 3.

In Stage 1, the Northern Territory and Western Australia provided data for the three years of 2005/06, 2006/07 and 2007/08 while Queensland provided data for 2007/08. In Stage 2, all three jurisdictions provided data for 2008/09. Data relating to all years is presented in the Stage 3 report.

Per capita alcohol consumption is calculated by dividing volumes of pure alcohol by the number of people in a given population (usually persons aged 15+). The objective in measuring *per capita* consumption is to estimate the average amount of alcohol consumed by individuals in a particular population at a particular time as accurately as possible. For that reason the denominator should exclude children and others who are not consuming purchased alcohol at that time, but should include adult residents and visitors who are buying and consuming alcohol in that place at that time.

In Stage 1, the NASDP calculated *per capita* consumption by dividing volumes of alcohol sold by the Estimated Resident Population (ERP)[1] aged 15+ for the relevant year. Measures of residential population such as ERP can be poor guides to population in areas that are important in alcohol policy such as regions of high tourism or large entertainment districts. 'Service populations', which are populations adjusted to include all relevant people for a particular purpose, may be more appropriate measures. Service populations for alcohol consumption may include tourists, seasonal workers, fly-in-fly-out workers, students, members of the armed forces, and other itinerant visitors and workers.

The Stage 1 NASDP Final Report recommended that the NASDP develop service population estimates to use in *per capita* consumption calculations. Accordingly, in Stage 2 we estimated *per capita* consumption using three different denominators:

- Estimated Resident Population (ERP). This was identical to the computation undertaken for Queensland and Western Australia in Stage 1. It was not adjusted for tourists, seasonal workers and other visitors.

[1] ERP is a census-based, Australian Bureau of Statistics (ABS) measure.

- Estimated Service Population (ESP) based on ERP, but accounting for absent residents, Australian visitors and international tourists.
- Estimated Enumerated Population (EEP). This is a count of all relevant persons present on Census night and has been estimated for inter-censal years. It was included as a control condition.

These population estimates were used in Queensland and Western Australia. The Northern Territory requested that alcohol consumption should only be calculated for the Territory as a whole, using estimates derived from ERP to which tourist numbers had been added.

This was the first time that an alcohol consumption service population estimate had been developed for regional areas. At a state level, the differences found between consumption based on ERP and ESP were minimal, but larger differences were found in some regional areas. These differences suggested that ESP was a useful estimate for calculating alcohol consumption at a regional level, and was likely to be more accurate than estimates based on ERP. We recommended its continued use in the NASDP, resources permitting.

A brief paper and summary of these issues was given to the IGCD Standing Committee on Alcohol. The Committee supported the use of ESP as the primary denominator in the NASDP reports, provided that *per capita* consumption estimates based on ERP were retained in an appendix to allow broader comparison. The NASDP Advisory Committee also suggested that in the Stage 3 (current) report all previous data should be updated to reflect pcc/ESP (*per capita* consumption derived from ESP). Tables and maps in this report are accordingly based on pcc/ESP, and pcc/ERPs (*per capita* consumption derived from ERPs) have been appended.

Alcohol sales data can be used to identify and monitor emerging trends in alcohol consumption and strategies to minimise harmful outcomes of these, including the emergence of so-called ‘alcopops’ (ready-to-drink spirit- or wine-based products, also called RTDs). The NASDP data monitor sales of different beverage categories so that volume changes in the sale of these categories can be observed. These observations can contribute to the evaluation of strategies such as the alcopops tax to reduce the harm associated with emerging patterns of alcohol consumption.

The 2011 NASDP data demonstrated that in both the Northern Territory and Queensland, beer and cider sales had increased, and wine and spirit sales had decreased over the period 2007/08 to 2008/09. In both jurisdictions sales of standard spirits rose (between 11 and 15%) while sales of pre-mixed spirits decreased by 30 to 35%. This seemed to endorse the finding that the alcopops tax had reduced the sale of RTDs which was only partly compensated for by increases in sales of regular spirits. In Western Australia the trends were in the opposite direction with beer sales decreasing and wine and spirits sales increasing. Unfortunately the Western Australia data did not allow us to differentiate between regular and pre-mixed spirits or observe cider sales.

In the current year, alcohol sales data were made available by the Northern Territory Department of Justice for the year 2009/10. The Department of Justice also supplied Reporting Area for retailers, which allowed sales information to be aggregated into the six Urban Centres and the remainder of the Northern Territory which is its usual mode of presenting geographical information on alcohol sales. Whole population and 15+ population details for the Northern Territory for the years 2000/01 to 2009/10 were supplied, as well as Department of Tourism estimates of the number of interstate and overseas visitors to the Northern Territory aged 15+ in the same years. The NASDP was requested to report *per capita* consumption for the jurisdiction as a whole, and not for regional units where tourist estimations were not as reliable. It was agreed that volumes of alcohol sold would be reported for Urban Centres and the remainder of Northern Territory, and that *per capita* consumption for Northern Territory as whole would be calculated primarily with the tourism estimate but could be appended as a further calculation without the tourism estimate.

Alcohol sales data were made available by the Queensland Office of Liquor and Gaming Regulation for the year 2009/10. Wine Industry returns constituted the second source of Queensland data and were added to the total volumes sold to retail licensees by wholesalers. Postcodes were aggregated into Statistical Local Areas (SLAs) and further aggregation to Statistical Subdivisions (SSDs) was undertaken to provide regional units of an appropriate size for mapping.

De-identified alcohol sales data were made available by the Western Australia Department of Racing, Gaming and Liquor for 2009/10. Postcodes were aggregated into Statistical Local

Areas (SLAs) and further aggregation to Statistical Subdivisions (SSDs) was undertaken to provide regional units of an appropriate size for mapping.

Alcohol conversion factors are required to convert volumes of different alcohol-based beverages to volumes of absolute or 'pure' alcohol content. In the NASDP Stage 3 we used national alcohol conversion factors in order to derive standardised rates which could be used to compare *per capita* consumption across different regions and jurisdictions.

Per capita consumption and volumes of pure alcohol sold were mapped for the Northern Territory, Queensland and Western Australia using the software ArcGIS 10, and Australian Standard Geographical Classification shapefiles. Data have also been presented in figures and tables.

The estimated alcohol *per capita* consumption in the Northern Territory in 2009/10 was 13.73 litres of pure alcohol per individual aged 15+, using population figures which included tourists. More pure alcohol was sold in 2009/10 than in the preceding years other than 2007/08, but this appeared to be associated with population growth rather than increased consumption. Between 2008/09 and 2009/10 sales of most beverage types across the Northern Territory were relatively stable. Sales of standard spirits decreased by approximately 1%, and sales of pre-mixed spirits (RTDs) increased by approximately 4% between 2008/09 and 2009/10.

Queensland pcc/ESP was relatively stable at 11.34 litres in 2008/09, 10.98 in 2007/08 and 11.03 in 2009/10. High alcohol consumption was found in the metropolitan area, the Gold Coast and several coastal cities. Low alcohol consumption was found in some parts of Brisbane and the Sunshine Coast, Somerset, and Townsville These findings are similar to those in 2008/09 where it was posited that the inner Brisbane area had particularly high alcohol consumption because of a combination of relatively low resident population, its status as an entertainment area and alcohol sales to city workers, and that coastal cities with high alcohol consumption had relatively high levels of tourism.

Across Queensland, sales of pure alcohol were increased in 2009/10 compared to the previous year, and the largest amounts of alcohol were generally sold on the eastern seaboard, although these did not necessarily translate into high *per capita* consumption. Sales of

standard spirits decreased by approximately 7%, and sales of pre-mixed spirits (RTDs) increased by approximately 5% between 2008/09 and 2009/10.

Western Australia had its highest pcc/ESP of 12.37 in 2009/10 across the five year period other than in 2007/08 where pcc/ESP was 12.72. In 2009/10, higher pcc/ESP was found in Central Metropolitan, as well as several regions with highly mobile workforces and/or high tourism. The same factors that appear to have influenced high alcohol consumption in Inner Brisbane are likely to have influenced alcohol consumption in Western Australia's Central Metropolitan region.

Between 2008/09 and 2009/10, Western Australian pure alcohol sales increased by 8.5%. Beer and wine sales increased by 8% and spirits sales increased by 5.5%. It should be noted that Western Australian data do not separate regular and pre-mixed spirits, and do not include sales of cider and other alcoholic beverages.

Patterns in beverage choice in the three jurisdictions fell into two distinct types. In the Northern Territory and Queensland, beer on the one hand, and wine and spirits on the other, moved in opposite directions reaching a peak or a nadir in 2008/09 from which there has been slight movement. The pattern in Western Australia shows increases in all three major beverage types in the last 2 – 3 years.

These patterns appear to reflect the changing circumstances of the jurisdictions. Western Australia has been in boom conditions for at least the last three years with an increasing and highly mobile occupational population. Western Australia's rising alcohol consumption and patterns in beverage choice may be related to these economic conditions.

Alcohol consumption and beverage choice in the Northern Territory and Queensland on the other hand may reflect a community concern with alcohol consumption and considerable efforts over the last few years to address it. Overall alcohol consumption is decreasing and beverage choice is moving from beverages with higher alcohol content such as wine and spirits towards those such as beer which have lower alcohol content.

In relation to the role of the alcopops tax in reducing the consumption of alcopops in the Northern Territory and Queensland, we found an increase in sales of cider between 2007/08 and 2009/10. Sales of regular spirits increased in 2008/09, presumably as a response to the alcopops tax, and then fell again slightly in the current year, although not to pre-tax levels.

However, the major trend was the fall in sales of premixed spirits in 2008/09 which although increasing somewhat in the current year are nowhere near their pre-tax levels. It appears that the alcopops tax had the immediate effect on sales of premixed spirits that it was intended to have and that two years after its introduction it is still having some effect.

In future years we anticipate more Australian jurisdictions will commence alcohol sales data collections and will make their data available to the NASDP and we have noted positive signs in that direction in several jurisdictions.

Finally, we thank the jurisdictions who have supplied alcohol sales data to the NASDP for the third successive year and hope that they will continue to do so.

INTRODUCTION

BACKGROUND TO THE NASDP

In response to the global number and severity of adverse consequences related to alcohol use, the General Assembly of the World Health Organization has passed a major resolution concerning the public health impacts of harmful alcohol use and the need to apply evidence-based strategies to reduce these (WHO 2006). In support of this resolution, it has been estimated that in 2004 alcohol contributed to 2.3 million deaths and 69 million disability adjusted life years globally (WHO 2009). In Australia, the costs of alcohol abuse in 2004/05 exceeded $A15 billion (National Preventative Health Taskforce 2009).

Epidemiological monitoring of alcohol use and alcohol-related problems can inform and facilitate the development and evaluation of evidence-based strategies to deal with the problem of alcohol. One of the best sources of alcohol consumption information is alcohol sales data.

In Australia, in 2007, the Ministerial Council on Drug Strategy (MCDS) highlighted the absence of systematic and standardised Australia-wide alcohol sales data collections[2]. In response, the Australian Government Department of Health and Ageing funded the Drug and Alcohol Office of Western Australia (DAO) and the National Drug Research Institute (NDRI) at Curtin University in Perth, to develop the National Alcohol Sales Data Project (NASDP). In 2011-12, the NASDP is in its third funding year, having completed two analyses and reviews of alcohol sales data in three Australian jurisdictions (Loxley, Chikritzhs et al. 2010; Loxley, Chikritzhs et al. 2011).

The current report presents the work of the NASDP Stage 3. An interim report was presented to funders in May 2012 (Appendix I).

THE SIGNIFICANCE OF ALCOHOL CONSUMPTION DATA

The prevention of alcohol-related problems, requires a clear view of their magnitude. Estimates of *per capita* consumption of alcohol across national populations can provide policy makers with an understanding of that magnitude and the trends likely to be found in

[2] Australian Bureau of Statistics national apparent alcohol consumption estimates are derived from customs and excise data and cannot be disaggregated by state/territory.

alcohol-related problems. *Per capita* consumption data can also be valuable in combination with data on actual harm to assist in identifying high risk beverages which may require particular attention from policy makers (WHO, 2006).

Alcohol consumption is heavily influenced by interventions put in place by jurisdictional and Commonwealth governments. All jurisdictional governments have enacted legislation which controls the sale of alcohol and places general restrictions on who may purchase alcoholic beverages, who may sell them, the places from and hours at which they may be sold, as well as specific conditions that can be imposed upon individual licences. In addition, governments may impose a variety of other restrictive measures, which aim to reduce alcohol-related harm, on the sale of alcohol in specific places or situations.

A recent longitudinal study of influences on alcohol consumption and related harm in Central Australia, for example, illustrates the extent and variety of these for Central Australia within the Northern Territory (Symons, Gray et al. 2012). Alcohol restrictions in Central Australia from 2002 included Trial Restrictions for a period of 12 months; amendment of the Trial Restrictions in 2003; the Alice Springs Alcohol Management Plan and the Alice Springs Liquor Supply Plan, both introduced in 2006; the NT Licensing Commission's declaration of the Alice Springs Restricted Area in 2007; and the introduction of a photographic ID system for the purchase of take-away alcohol in 2008. In addition provisions of the Australian Government's *Northern Territory Emergency Response Act* and amendments to the Australian Governments *Excise Tariff* and *Customs Tariff Acts* in 2008 (the 'alcopops tax') have also impacted on the supply of alcohol in both Central Australia and the Northern Territory more generally. As the authors state, "There was no location within the NT that had not been subject to some alcohol harm reduction measures" (Symons, Gray et al. 2012 p. vii). These examples demonstrate the importance of interpreting changes in consumption data against the background of changing legislative and regulative frameworks which influence how people drink alcohol.

There are two ways to collect data on alcohol consumption within a population: alcohol sales data collected for taxation purposes or by wholesaler or retailer record keeping, and population-based surveys (WHO, 2006). The World Health Organization does not, however, recommend the use of survey data to estimate *per capita* consumption because several studies

have found substantial discrepancies between consumption estimates based on survey data and those derived from sales data.

For many years, the Australian Bureau of Statistics (ABS) has published national estimates of alcohol *per capita* consumption based on import clearance, excise and domestic alcohol sales data. The latest estimates for Australians over the age of 15 years (15+) can be seen in Figure 1which demonstrates that alcohol consumption has been reducing in Australia since 2008.

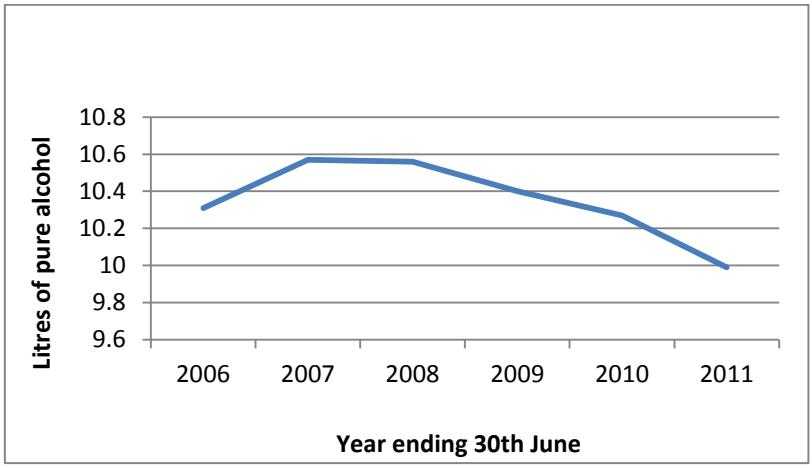

Figure 1 National *per capita* consumption of pure alcohol per person aged 15 years and over (Australian Bureau of Statistics 2012).

Until 1996, the ABS estimates were complemented by state and territory alcohol sales data collected by liquor licensing authorities (Hall, Chikritzhs et al. 2008). In 1996, however, the High Court of Australia ruled that liquor licensing fees and levies were, in fact, excise duties and as such illegal under the terms of the Australian Constitution, because only the Commonwealth Government was empowered to impose excise duties. The ruling did not preclude the collection of wholesale alcohol purchase data by liquor licensing authorities but, for most jurisdictions, the incentive for continued collection was lost. Only the Northern Territory, Queensland and Western Australia, continued to collect this information which means that invaluable data for informing alcohol policy and liquor licensing action and evaluating licensing restrictions are no longer available (Chikritzhs 2009).

THE NASDP OBJECTIVES AND AIMS

The overall objective of the NASDP is to construct an ongoing, regularly updated, national database of standardised alcohol sales data which includes all Australian states/territories. This is progressed by jurisdictions supplying the project with electronic copies of their

alcohol sales records conforming to a minimum set of specifications. These data sets are then systematically prepared and analysed by the NASDP staff.

Other project aims include:

- monitoring alcohol consumption trends by regularly estimating *per capita* alcohol consumption for all participating states/territories;
- providing an annual report on consumption by region containing summaries of alcohol sales data and alcohol *per capita* consumption estimates for all participating states/territories and the Commonwealth; and
- providing standardised alcohol sales data sets for use by jurisdictions.

It is anticipated that the annual report will demonstrate the value of alcohol sales data for policy and services evaluation and encourage jurisdictions not currently collecting these data to closely consider the merits of doing so. An important aspect of the project is its capacity to work directly with relevant personnel in specific jurisdictions to assist in the development of sales data collections.

IMPLEMENTATION AND ESTABLISHMENT OF THE NASDP

The NASDP works closely with an Advisory Committee (AC) consisting of senior representatives of Liquor Licensing (LL), Health and Police in every Australian jurisdiction and the Australian Government Department of Health and Ageing. The purpose of the AC is to:

- provide guidance and advice on proposed processes and the use of sales data;
- communicate representatives' interests and requirements regarding sales data;
- provide comment and suggestions on draft annual reports; and
- support the aims and ongoing functions of the project.

Meetings are held via group teleconference twice a year and provide an opportunity for AC representatives to discuss any data collection issues that may arise and to provide feedback on draft reports. The first teleconference for the NASDP Stage 3 was held on July 13, 2012.

General points raised in the meeting included an update on the Intergovernmental Committee on Drugs (IGCD) Standing Committee on Alcohol discussion regarding use of ESP in future NASDP reports. This issue is explained and discussed further below.

RESULTS IN THE NASDP STAGE 1 AND STAGE 2

The following is a summary of findings in the first two completed stages of the NASDP. In each stage de-identified alcohol sales data were supplied to the NASDP by the Northern Territory, Queensland and Western Australia. In Stage 1, the Northern Territory and Western Australia provided data for the three years of 2005/06, 2006/07 and 2007/08 while Queensland provided data for 2007/08. In Stage 2, all three jurisdictions provided data for 2008/09.

The Northern Territory required that the NASDP only report *per capita* consumption for the Territory as a whole, using population data which included the numbers of tourists[3] during the relevant period. Alcohol volumes sold were to be reported for Urban Centres[4] defined by the Northern Territory. In Queensland and Western Australia, alcohol volumes sold and *per capita* consumption are reported for the state as a whole and for Statistical Subdivisions (SSDs).

Estimated alcohol consumption in the NASDP Stage 1

Estimated alcohol *per capita* consumption (pcc) in the Northern Territory for the years 2005/06, 2006/07 and 2007/08 was between 14.5 and 15.0 litres of pure alcohol per individual aged 15+.

The estimated alcohol *per capita* consumption for Queensland as a whole in 2007/08 was 11.07 litres of pure alcohol per individual aged 15+. There were, however, regions of higher alcohol consumption particularly in the Brisbane area, the Gold and Sunshine Coasts, and the North West. These areas may have been subject to significant tourist influx.

In Western Australia estimated alcohol *per capita* consumption was 10.79 litres of pure alcohol per individual aged 15+ in 2005/06, decreased slightly in 2006/07 and then increased to 12.23 in 2007/08. Alcohol consumption generally increased towards the west and north of the state. The central metropolitan area had higher rates than surrounding regions. These areas may have been influenced by mobile employees and/or high tourist numbers.

[3] Numbers provided by the Northern Territory.

[4] Regional areas made up of amalgamated Statistical Local Areas (SLAs). See Figure 2.

Per capita consumption is calculated by dividing the total volume of pure alcohol sold by a population estimate. In Stage 1, the population estimate used to calculate *per capita* consumption was Estimated Residential Population (ERP) aged 15+. ERP is an ABS measure based on usual place of residence, and counts all people who usually live in Australia, with the exception of foreign diplomatic personnel and their families. The count includes residents who are overseas for less than 12 months, and excludes overseas visitors who are in Australia for less than 12 months. It counts Australians as if in their usual place of residence regardless of where they happen to be on Census night.

Measures of residential population such as ERP can be poor guides to population in regions such as areas of high tourism or large entertainment districts, as they do not include non-residents who might be buying and consuming alcohol. A better measure would include all relevant people for a particular purpose such as the estimation of alcohol consumption—this has been referred to as a 'service population'. Service populations may include tourists, seasonal workers, fly-in-fly-out workers, students, members of the armed forces, and other itinerant visitors and workers.

The Stage 1 NASDP Final Report recommended that the NASDP develop service population estimates to use in *per capita* consumption calculations. Accordingly, in Stage 2 we estimated *per capita* consumption using three different denominators:

- Estimated Resident Population (ERP). This was identical to the computation undertaken for Queensland and Western Australia in Stage 1. It was not adjusted for tourists, seasonal workers and other visitors.
- Estimated Service Population (ESP) based on ERP, but accounting for absent residents, Australian visitors and international tourists.
- Estimated Enumerated Population (EEP). This is a count of all relevant persons present on Census night and has been estimated for inter-censal years. It was included as a control condition.

These population estimates were used in Queensland and Western Australia. As noted above, the Northern Territory requested that *per capita* consumption should only be calculated for the Territory as a whole, using estimates derived from ERP to which tourist numbers had been added.

Estimated alcohol consumption in the NASDP Stage 2

The estimated alcohol *per capita* consumption in the Northern Territory in 2008/09 was 14.05 litres of pure alcohol per individual aged 15+ including tourists. This was a reduction from each of the preceding three years. It was demonstrated in the report that the inclusion of tourists in the population estimate reduced *per capita* consumption by 13.7%.

The estimated alcohol *per capita* consumption for Queensland (by ERP) for 2008/09 was 10.69 litres of pure alcohol per individual aged 15+, which was higher than the national average but lower than in Queensland in 2007/08, and lower than in the Northern Territory and Western Australia in 2008/09. There were, again, regions of higher alcohol consumption particularly in the Brisbane area, the Gold and Sunshine Coasts, some northern coastal cities and the North West. For the state as a whole, there were negligible differences between consumption based on ERP (pcc/ERP) or ESP (pcc/ESP). In seven SSDs, however, there was a larger difference between pcc/ERP and pcc/ESP, where pcc/ESP was the lower estimate. It seems likely that in most if not all of these regions, the failure to account for tourists and other non-residents inflated consumption estimates based on ERP.

The estimated alcohol *per capita* consumption for Western Australia (by ERP) for 2008/09 was 11.21 litres of pure alcohol per individual aged 15+, which was lower than in 2007/08, the year with the highest consumption across the four years of study. *Per capita* consumption in 2008/09 was at its lowest across the four years in several SSDs. While state-based differences between consumption based on different population estimates were negligible, there were seven SSDs with large differences between pcc/ERP and pcc/ESP where pcc/ESP was the lower estimate. These regions tended to be remote SSDs with small populations and large population variation relating primarily to occupations such as mining. There were also seven SSDs, mainly in the South West, where pcc/ESP was higher although the differences were smaller.

To summarise, in Stage 2 of the NASDP, we estimated state and regional alcohol consumption based on ERP and also on a service population (ESP) which took into account absent residents, Australian visitors and international visitors. This was the first time that such an estimate had been developed for regional areas. At a state level, the differences found

in the NASDP between *per capita* consumption based on ERP and ESP[5] were minimal, but larger differences were found in some regional areas. These differences suggested that ESP was a useful estimate for calculating *per capita* consumption at a regional level, and was likely to be a more accurate estimate than *per capita* consumption based on ERP. We recommended its continued use in the NASDP, resources permitting.

As noted above, a brief paper and summary of these issues was given to the IGCD Standing Committee on Alcohol. The Committee supported the use of ESP as the primary denominator in the NASDP reports, provided that *per capita* consumption estimates based on ERP were retained in an appendix to allow broader comparison.

The NASDP Advisory Committee suggested that in the Stage 3 (current) report all previous data should be updated to reflect ESP/pcc. Tables and maps in this report are accordingly based on pcc/ESP, and pcc/ERPs have been appended.

Trends in alcohol consumption

In the NASDP Stage 2 report (Loxley, Chikritzhs et al. 2011) we noted that alcohol sales data could be used to identify and monitor emerging trends in alcohol consumption, and evaluate strategies to minimise the harmful outcomes of these. Some of these trends are amenable to investigation with the NASDP data, which monitor sales of different beverage categories over time so that volume changes in the sale of different beverages can be observed and analysed.

One alcohol consumption trend which has been causing concern in the last decade is the emergence of so-called ‘alcopops’ (ready-to-drink spirit- or wine-based products, also called RTDs) largely promoted to young people. In 2007, alcopops accounted for 20% of all retail liquor sales (Jones and Barrie 2011).

In 2008, the Commonwealth increased the excise on RTDs to reduce excessive consumption of alcohol by young people. Given the evidence that increasing the cost of alcohol reduces consumption, this was an appropriate strategy to reduce consumption and harm in a vulnerable population (Chikritzhs, Dietze et al. 2009). Evidence clearly shows that the tax reduced consumption of alcopops to such an extent that overall consumption of alcohol in

[5] EEP should be considered as a control group and as such has not been reported.

Australia decreased for the first time in 4 years (Chikritzhs, Dietze et al. 2009; Hall and Chikritzhs 2010). There is, however, some concern and emerging evidence that there might have been an increase in the consumption of cider, perhaps as one response to the alcopops tax (Koremans 2011).

Further research shows that consumption of most types of alcoholic beverage either remained stable or increased between the years 2004 to 2009. In particular, consumption of wine-based RTDs and cider increased in every year across that period. Consumption of spirit-based RTDs increased annually until 2007 then decreased in 2008 and further in 2009, following the introduction of the alcopops tax (Doran and Digiusto 2011). The authors noted that while increased consumption of beverages other than spirit-based RTDs could be interpreted as substitutions for spirit-based RTDs, it could also be seen as a continuation of long-term trends.

The 2011 NASDP data showed that in both the Northern Territory and Queensland beer and cider sales had increased, and wine and spirit sales had decreased over the period 2007/08 to 2008/09. Spirits were further categorised as 'standard' (or regular) and 'pre-mixed' (or RTD). In both jurisdictions, sales of standard spirits rose (between 11 and 15%) while sales of RTDs decreased by 30 – 35%. This seemed to endorse the finding that the alcopops tax had reduced the sale of RTDs, which was only partly compensated for by increases in sales of regular spirits. The rise in the consumption of cider in these two jurisdictions may also have been related to shifts away from RTD consumption but may, as suggested above, been a continuation of long-term increases in cider consumption.

In Western Australia, the trends were in the opposite direction with beer sales decreasing and wine and spirits sales increasing. Unfortunately the Western Australia data did not allow us to differentiate between regular and pre-mixed spirits or observe cider sales.

METHODS

DATA TRANSFER ISSUES

A number of general conditions underlie data transfer arrangements in the NASDP.

- Individual state and territory governments are responsible for and retain ownership over the collection of electronic alcohol sales data within their own jurisdiction.
- The NASDP staff consult individually with responsible departments on minimum data set specifications, data transfer arrangements, confidentiality requirements and data quality checks.
- The DAO and the NDRI liaise with participating jurisdictions to ensure confidentiality requirements are satisfied. All the NASDP staff are required to sign a data confidentiality agreement.
- All jurisdictions contributing alcohol sales data are consulted in relation to appropriate functional levels of reporting. Alcohol sales are not reported by liquor licence, and minimum sample rules (i.e. by geographic area) have been established to ensure the privacy of individual retailers is protected.

OVERVIEW OF METHODS

All analytical work is supervised by senior researchers at the NDRI and electronic data are housed on secure servers at the NDRI.

Upon data transfer from jurisdictional collection agencies (e.g. liquor licensing authorities), alcohol sales data are cleaned, standardised and analysed.

Regional alcohol *per capita* consumption estimates are made using various population estimates.

Standardised data sets containing jurisdictional alcohol sales data are made available to nominated jurisdictional representatives.

Alcohol sales data cannot be transferred to third parties without the written consent of the relevant jurisdiction(s).

In 2012, the Northern Territory, Queensland and Western Australia made de-identified alcohol sales data relating to the financial year 2009/10 available to the NASDP Stage 3. The

current report presents all data available to the NASDP, including that previously presented, for comparison. Some previously presented data have been revised as described below.

PER CAPITA CONSUMPTION CALCULATION METHOD

Per capita consumption is calculated by relating pure alcohol content by volume (PACV) consumed, to the population aged 15+ as described in the following equation (Farah, Unwin et al. 2007):

$$Per \quad capita \quad consumption = \frac{litres \quad of \quad absolute \quad alcohol}{population \quad 15+}$$

POPULATION ESTIMATES

Background

The objective in measuring *per capita* alcohol consumption is to estimate the average amount of alcohol consumed by individuals in a particular population at a particular time as accurately as possible. For that reason the denominator should exclude children and others who are not consuming purchased alcohol at that time, but should include adult residents and visitors who are buying and consuming alcohol in that place at that time.

Measures of residential population such as ERP, can be poor guides to population in areas that are important in alcohol policy such as areas of high tourism or large entertainment districts. As noted above, in some high tourism areas, for example, excluding tourists from the population denominator can be demonstrated to have inflated estimated *per capita* consumption. In Stages 1 and 2, the NASDP calculated the Northern Territory *per capita* alcohol consumption with population figures that included tourists [6]. In appended comparisons using ERP without tourists, we found that the inclusion of tourists had reduced the alcohol *per capita* consumption between 11% - 14% (Loxley, Chikritzhs et al. 2010; Loxley, Chikritzhs et al. 2011).

The term ‘service population’ is used to denote a population that has been adjusted to include all relevant people for a particular purpose. An Estimated Service Population (ESP) was developed for the NASDP Stage 2.

[6] Supplied by the Northern Territory Department of Justice

In Stage 3, we have further developed ESP for all Queensland and Western Australia data, in order to present pcc/ESP for all available years as suggested by the NASDP Advisory Committee. This has necessitated revising ERP from which ESP is extrapolated. In Stage 2, ABS ERP figures were used and extrapolated to calculate ESP for a single year. In Stage 3 ERP was revised to provide comparability across the years 2006 to 2010. ABS ERPs are strictly not comparable because no allowance is made by the ABS for boundary changes between years, although these are noted in accompanying ABS documentation (Australian Bureau of Statistics 2009). The revised pcc/ESPs are minimally different from those presented in Stage 2, as can be seen in tables in the main body of the report. The slight differences to ERP and hence pcc/ERP are reflected in tables presented in Appendix II.

Derivation of population estimates

- The task in the NASDP Stage 3 was to calculate Estimated Service Populations (ESP) for 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10 for Western Australia using Statistical Subdivision (SSD) boundaries established by the ABS. A similar task was undertaken for Queensland for the years 2007/08, 2008/09 and 2009/10. That meant that ESP had been calculated for every year and jurisdiction for which we had NASDP data.
- ESP was calculated for the total population and the drinking age population (assumed conservatively to be 15 years and older).
- Pursuant to the previous methodology, to which we have tried to maintain consistency, the basic method was to calculate a "net visitors" (NV) value for each SSD for each year and simply add this to the ABS estimated resident population for the same period. The result reflects an Estimated Service Population which includes the resident population adjusted for the number of persons away from their residence or those visiting the SSD from other SSDs in Western Australia or Australia or from overseas.
- Net visitors is based on the census data and Estimated Resident Population (ERP) data from the 2006 and 2011 censuses and is calculated by simply subtracting ERP from the census-based Estimated Enumerated Population (EEP) count. The result is then used to calculate ESP for each specific SSD and year.
- Because EEP is only available for census years, it was necessary to estimate it for inter-censal years. This was done as follows:

- 2005/06 use census data directly
- 2006/07 use average of net visitors from 2006 and 2011
- 2007/08 as above
- 2008/09 as above
- 2009/10 as above

- At the time of this work the ABS had yet to release age-based ERP for the 2011 census so it was necessary to estimate ERP for ages 15 and above. This was done using an approach which applied the proportion of the ERP aged 15+ in 2010 to the ERP total in 2011.
- Because of the changes to SSD boundaries over time and the difficulties in comparing these regions over time, particularly for Queensland, it was decided to calculate ESP based on the 2005/06 SSD boundaries for all years of interest. To accomplish this, a specific data extraction was obtained from the ABS for 2006 through 2011 ERP and census EEP data recalculated on 2005/06 SSD boundaries.
- Once ERP data were obtained for each year and SSD and the estimated net visitors were calculated for the same, it was simply a matter of adding the net visitor estimate for each year and SSD to the ERP for the ERP data for the same.
- So, ESP for 2005/06, essentially, was calculated as follows:
  - ESP = ERP + Net Visitors
  - Where Net Visitors = EEP - ERP
  - i.e. for 2005/06, ESP = EEP
- ESP for 2006/07 through 2009/10 was calculated as follows:
  - ESP = ERP + NV
  - Where NV = (Net Visitors 2006 + Net Visitors 2011) / 2
- The results demonstrate that the great majority of SSDs showed a small difference between ESP and ERP. For discussion purposes, in Queensland, in 2009/10, the majority of SSDs showed up to around 5% difference between ERP and ESP. In Western Australia, the variability was greater with the majority of SSDs having up to 10% difference between ERP and ESP.

- Again, for discussion purposes, the results for 2009/10 showed that the most dramatic differences between ERP and ESP for SSDs in Queensland were in Inner Brisbane (10%), Central West (13%), Mackay (10%) and North West (11%). In Western Australia, there were very large differences for a number of SSDs where there was a small base resident population (ERP): Pallinup (11%), Lefroy (36%), Ord (30%), Gascoyne (55%) and Carnegie (69%). However, also in Western Australia, regional SSDs with larger base populations also showed large differences between ERP and ESP: De Grey (35%), Fortescue (41%) and Fitzroy (29%).
- These differences are likely to be explainable by the expected higher ESP (as opposed to a generally lower expected ERP) particularly related to mining in Western Australia but also tourism and seasonal work in Queensland.

ASGC REGIONAL UNITS

- The Australian Standard Geographical Classification (ASGC) is used by the ABS for the collection and dissemination of geographically classified statistics. It provides seven hierarchies of geographical areas which allow coding of data into pre-established categories. In the Main Structure, jurisdictions are divided into Statistical Divisions (SDs) which are made up of Statistical Subdivisions (SSDs), which are in turn made up of Census Collection Districts (CCDs) aggregated into Statistical Local Areas (SLAs).
- The NASDP data for Queensland and Western Australia are analysed at the level of SSDs. Different regional areas are used for the Northern Territory as detailed below. Regional units are presented in this report as maps and tables.

OVERVIEW OF *PER CAPITA* CONSUMPTION CALCULATION METHOD

- Alcohol sales data were prepared as below.
- Wine producer sales, such as those at cellar doors not included in the above, were added to the data set where volumes, postcodes and details of the nature of the beverages sold were available.
- In Queensland and Western Australia, alcohol volume data were aggregated into SSDs using postcodes contained within the data sets.

- In the Northern Territory, alcohol volume data were aggregated into Urban Centres pre-determined by the Northern Territory Department of Justice and the Remainder of the Northern Territory.
- Volume data were partialled out to regional areas, and alcohol conversion factors (see below) were applied to volumes of different beverages to create total PACV.
- Year appropriate population estimates (see below) were adjusted for the 15+ population, and *per capita* consumption calculated according to the above equation.
- For Queensland and Western Australia, alcohol volumes and *per capita* consumption were not reported for SSDs with fewer than six clearly identifiable licensed premises.

PREPARATION OF ALCOHOL SALES DATA

General considerations for data cleaning and preparation included:

- Anomalies in the data were identified and either corrected or removed.
- Apparent outliers in the data were queried with the relevant authority and appropriate action taken.
- In some data sets, postcodes were used as the basic geographical identifier. In these cases, a small number of records which did not contain a purchaser postcode were removed.
- Volumes of alcohol sold (litres) were the base unit of *per capita* consumption calculation. A small number of records which did not contain volume data were removed.
- Records were removed if they related to supply to other wholesalers or wine producers as these would otherwise be duplicated in wholesaler to retailer records.

The Northern Territory

The Northern Territory utilises a quarterly return.

At the end of every quarter of each year all licensed Northern Territory wholesalers are emailed, reminding them of their obligations under Section 114 of the Liquor Act which states they have 28 days from the end of the quarter to lodge with the Wholesale Quarterly Return of Liquor Sales, showing details of all purchases and sales of liquor made in the quarter.

Alcohol sales data were made available to the NASDP by the Northern Territory Department of Justice for 2009/10, conveyed in an Excel spreadsheet. The Department of Justice supplied

Reporting Area for retailers, which allowed sales information to be aggregated into the six Urban Centres and the Remainder of the Northern Territory which is the Department's usual mode of presenting geographical information on alcohol sales. Estimated Residential Population aged 15+ numbers for the years 2000/01 to 2009/10, were supplied, as well as Department of Tourism estimates of the number of interstate and overseas visitors aged 15+ to the Northern Territory in the same years.

The Department of Justice has requested that the NASDP report *per capita* consumption for the Northern Territory using ERP plus tourism figures for the jurisdiction as a whole, but not for regional units where tourist estimations were not as reliable. It has been agreed that volumes of alcohol sold would be reported for Urban Centres and the remainder of the Northern Territory, and that *per capita* consumption for the Northern Territory as whole would be calculated primarily with the tourism estimate[7].

Queensland

Queensland utilises two annual returns:

- Return of Liquor Sales under the Liquor Act 1992. This return should be completed by every holder of a producer/wholesaler licence.
- Annual return under the Wine Industry Act 1994. This return should be completed by every holder of a wine producer or wine merchant licence.

Alcohol sales data were made available to the NASDP by the Queensland Office of Liquor and Gaming Regulation (OLGR) for the year 2009/10. Data were conveyed in Excel spreadsheets and the purchaser postcode was the primary geographical information.

The records were aggregated by wholesaler, and licence numbers of purchasers examined to determine whether supply had been made to other wholesalers, wine producers and wine merchants. As noted above, these purchases were removed from the data set to avoid double counting.

[7] Estimates of Northern Territory *per capita* consumption without the influence of tourism can be found in Appendix III.

Approximately 17% of the volume, and 18% of the value of alcohol purchased from wholesalers, was bought by other wholesalers, and less than 0.1% of volume and value related to supply to wine producers / merchants[8].

Wine Industry returns constituted a second source of Queensland data. Postcodes of the wine producer / merchants and details of beverages sold (table or fortified wine, cider, brandy or mead) were available, so these data could be added to the total volumes sold to retail licensees by wholesalers.

Postcodes were aggregated into Statistical Local Areas (SLAs) using the 2010 Postcode to Statistical Local Area (SLA) Correspondence, prepared by the ABS Regional Population Unit in Adelaide. Further aggregation to Statistical Subdivisions (SSDs) using the same Correspondence was undertaken to provide regional units of an appropriate size for mapping.

Minor revisions were made to ESP and pcc/ESP for the years presented in Stage 2 as described above.

Western Australia

The Government of Western Australia utilises two annual returns:

- Summary of Transaction Under a Wholesale Licence, Liquor Control Act, 1988. This return should be completed by every holder of a Wholesaler's Licence.
- Summary of Transaction Under a Producer's Licence, Liquor Control Act, 1988. This return should be completed by every holder of a Producer's Licence.

De-identified alcohol sales data for 2009/10 were made available to the NASDP through the Western Australia Drug and Alcohol Office. These were conveyed in Excel spreadsheets. Postcode was the primary geographical information.

The records were aggregated, and examined to determine whether they were wholesalers and/or producers. Such records were removed from the data set to avoid double counting, thus leaving only sales made to retail licensees for further analysis. Approximately 29% of the volume, and 20% of the value of alcohol purchased from wholesalers, was bought by

[8] The Queensland Act defines these as follows: a Wine Producer Licence, wherein the fruit used to produce the wine is grown by the licensee on the premises used to make wine, or; a Wine Merchant Licence, wherein the licensee purchases fruit grown in Queensland and commissions the production of wine by the holder of a Wine Producer licence, or, blends wines produced in the state to create a unique wine.

other wholesalers, and less than 0.3% of volume and 0.2% of value related to supply to wine producers / merchants.

Postcodes were aggregated into Statistical Local Areas (SLAs) using the 2010 Postcode to Statistical Local Area (SLA) Correspondence, prepared by the ABS Regional Population Unit in Adelaide. Further aggregation to Statistical Subdivisions (SSDs) using the same Correspondence was undertaken to provide regional units of an appropriate size for mapping

Minor revisions were made to ESP and pcc/ESP for the years presented in Stage 2 as described above. Minor revisions were also made to ERP and pcc/ERP for the years presented in Stage 2. This occurred because the ABS presents ERP figures in several versions as they are updated. Preliminary estimates are normally available twelve months after the reference date, revised estimates the following year and rebased and final estimates after the following census (Australian Bureau of Statistics 2011). These revisions can be seen in the tables presented in Appendix II.

ALCOHOL CONVERSION FACTORS

Alcohol conversion factors are required to convert volumes of different alcoholic beverages (which may contain many other substances in addition to alcohol such as water and sugar) to volumes of absolute or 'pure' alcohol content (or PACV - pure alcohol content by volume). The NASDP has used national alcohol conversion factors in order to derive standardised rates which are used to compare *per capita* consumption across different regions and jurisdictions.

As an example, the NASDP PACV for mid-strength beer is 0.348. This means that the average mid-strength beer contains 3.48% pure alcohol. In this example, the volume of mid-strength beer sold by retailers was multiplied by 0.348 to obtain the volume of pure alcohol.

The NASDP relies on the ABS as a major source of information for its alcohol conversion factors. For the most part, the NASDP has used the ABS 2010 alcohol conversion factors for beer, table wine, fortified and sparkling wine, as shown in Table 1 (Australian Bureau of Statistics 2010). This publication observed that there had been an increase alcohol content of wine over the past decade. This fact was taken into consideration for the first time by the ABS' own national estimates of apparent *per capita* consumption. The new alcohol conversion estimates were also used to estimate new trends in Australian *per capita* consumption (Chikritzhs, Allsop et al. 2010) demonstrating that, contrary to previous official

estimates that *per capita* consumption had remained stable for over a decade, actual alcohol consumption in Australia was at one of its highest points since 1991/92.

Information informing alcohol conversion factors for spirits and RTDs are derived from a review performed for the Department of Health and Ageing on standard drink estimations by Catalano & Chikritzhs (2008). (The ABS collects pure alcohol volumes data for spirits and RTDs and does not collect data on cider, therefore it does not publish pure alcohol contents for these beverages in its reports.) The NDRI review is based on market brand shares for each major beverage type (beer, wine and spirits) identified using Euromonitors data. Average alcohol contents of the most popular brands were identified using on-line liquor guides and reference books. When alcohol contents could not be identified from these sources, visits were made to local liquor stores. Preliminary conversion factors were estimated for the following groups of beverages:

- **Beer**: low (2.5-2.9%) mid (3.0-3.5%) and full strength (>3.5%)[9]
- **Bottled wine**: red, white, sparkling and fortified
- **Cask wine**: red and white
- **Spirits**: whisky, bourbon, brandy, dark rum and white rum, vodka, gin
- **RTDs**: mid strength (3.5% alcohol content); full strength (3.5% to less than 6%) and super strength (6% to 10%)[10]
- **Cider**: in keeping with previous consensus (Catalano, Chikritzhs et al. 2001) an alcohol content of 5%.

Where applied, the specific PACV derived from the NDRI review has been identified in Table 1. Specific considerations given to each jurisdiction are described below, with final jurisdiction-specific conversion factors also summarised in Table 1.

The Northern Territory

The Northern Territory alcohol sales data contained the following categories:

- full (strength) beer, mid (strength) beer, low (strength) beer;

[9] 'Light' beer was not included

[10] Any product with greater alcohol content than 10% was considered full-strength spirit and not included.

- cask wine, bottled wine, fortified wine;
- pre-mixed spirits, standard spirits; and
- cider.

The PACV estimated for different categories of beer by the ABS in 2010 has been applied to Northern Territory beers. The definition of full-strength, mid-strength and low-strength used in the Northern Territory 'Wholesaler Return of Liquor Sales' approximated those used by the ABS for the same categories. The Northern Territory defines full-strength beer as 3.51% or greater, mid-strength beer as 3.01% to 3.50% and low-strength beer as 1.15% to 3.00%.

The Northern Territory sales data did not differentiate between red, white and sparkling table wines. The NDRI review estimates an overall pure alcohol content for table wine of 12.3% and this figure was applied to the Northern Territory wine data (Table 1). In other evaluations it has been assumed that cask wine has the same alcohol content as bottled wine (Gray, Chikritzhs et al. 1999) and this assumption has also been applied to Northern Territory cask wine. The ABS estimate of the pure alcohol content of fortified wine has been used.

The pure alcohol contents for spirits and cider estimated by the NDRI review have been applied to the Northern Territory data.

Queensland

Queensland alcohol sales data contained the following alcohol beverage categories:

- heavy beer, medium beer, light beer;
- bottled table wine, bottled fortified wine, bulk table wine, bulk fortified wine;
- regular spirits, pre-mixed spirits; and
- alcoholic sodas and cider.

The PACV estimated for different categories of beer by the ABS in 2010 has been applied to Queensland beers (see Table 1). The definition of 'heavy', 'medium' and 'light' beer used in the Queensland 'Return of Liquor Sales' approximated those used by the ABS for full strength, mid strength and low strength beers. Queensland defines heavy beer as 4% or greater, medium beer as 3% to less than 4% and light beer as less than 3%.

As in the Northern Territory, the Queensland sales data did not differentiate between red, white and sparkling wines, thus the NDRI overall conversion figure of 12.3% was applied. The ABS conversion factor for fortified wine has been applied.

There is also no differentiation in the Queensland data for cask wine. There is, however, a category referred to as 'bulk wine', which is a large quantity of table or fortified wine acquired or supplied in a container of more than 20 litres. This analysis has used the same alcohol content for Queensland bulk table and fortified wines as for bottled table and fortified wines respectively.

The PACV of spirits and RTDs and cider estimated in the NDRI review have been applied. The alcohol content of alcoholic sodas was established by (Catalano, Chikritzhs et al. 2001).

Some of the Queensland wine producers' data referred to 'mead'. There is a consensus in online data sources that this refers to brewed honey-based beverages with an average alcohol content of around 12.5%[11]. This figure has been applied to mead in the Queensland data.

Western Australia

The Western Australian alcohol sales data contained the following beverage categories:

- high (alcohol) beer, low (alcohol) beer;
- high (alcohol) wine, low (alcohol) wine; and
- spirits.

The PACV estimated for full and mid-strength beer by the ABS in 2010 has been applied to Western Australia 'high' and 'low' beers, low beer having previously been defined in Western Australia as having an alcohol content of 0.035 (Catalano *et al.*, 2001).

The Western Australian data, like the Northern Territory and Queensland data, did not differentiate between different kinds of table wine so an overall average alcohol content of 12.3% was assumed. Low alcohol wine in the Western Australian data has been converted with a factor of 3.5% as it was by Catalano *et al.* (2001).

[11] http://www.bartholomewsmeadery.com.au/

Western Australian alcohol sales data do not distinguish straight spirits (e.g. bottled vodka) from pre-mixed spirits (e.g. 'vodka cruisers'), as they only record volumes for all spirit-based products combined. Thus, the alcohol content of 'spirits' in Western Australia depends upon the proportion of RTD or pre-mixed spirits in the total volume sold. Information sourced from the Distilled Industry Council of Australia (DSICA) has identified that the proportion of the total spirits market made up of pre-mixed products has been steadily rising since 2001 (Distilled industry Council of Australia 2006). Using this information, the NDRI has calculated that the average alcohol content of spirits in Western Australia was about 0.108 in 2005/06 and 0.106 in 2006/07. Information about the market share of pre-mixed spirits in subsequent years is not available. The NASDP, therefore, has used the alcohol conversion factor of 0.108 in 2005/06 and 0.106 in 2006/07 to 2009/10.

Summary of alcohol conversion factors

Table 1 Alcohol conversion factors by jurisdiction

Beverage	Source	Terms	PACV[1]
Beer	ABS, 2010	full beer	0.0476
		low beer	0.0269
	NT 05/06, 06/07, 07/08, 08/09	full beer	0.0476
		mid beer	0.0348
		low beer	0.0269
	Queensland 07/08, 08/09	heavy beer	0.0476
		medium beer	0.0348
		light beer	0.0269
	WA 05/06, 06/07, 07/08, 08/09	high beer	0.0476
		low beer	0.0348
Wine	NDRI Review	table wine	0.1230
	ABS, 2010	fortified wine	0.1790
	NT 05/06, 06/07, 07/08, 08/09	cask wine	0.1230
		bottled wine	0.1230
		fortified wine	0.1790
	Queensland 07/08, 08/09	bottled table wine	0.1230
		bulk table wine	0.1230
		bottled fortified wine	0.1790
		bulk fortified wine	0.1790
	WA 05/06, 06/07, 07/08, 08/09	high wine	0.1230
		low wine	0.0350
Spirits	NDRI review	spirits	0.4170
		Ready to Drink	0.0501
	NT 05/06, 06/07, 07/08, 08/09	pre-mixed spirits	0.0501
		standard spirits	0.4170
	Queensland 07/08, 08/09	regular spirits	0.4170
		pre-mixed spirits	0.0501
	WA 05/06	spirits	0.1080
	WA 06/07, 07/08, 08/09	spirits	0.1060
Other	NDRI review	cider	0.0500
	NT 05/06, 06/07, 07/08, 08/09	cider	0.0500
	Queensland 07/08, 08/09	alcoholic soda and cider	0.0500
	Queensland 07/08, 08/09	mead	0.1250

1. Pure alcohol content by volume

MAPPING THE NASDP DATA

Per capita consumption was calculated for SSDs in Queensland and Western Australia and by aggregating SLAs into Urban Centres and Remainder in the Northern Territory. Volumes of pure alcohol sold and alcohol consumption were mapped using the software ArcGIS 10.0. ArcGIS is A geographic information system which allows the user to input their own information about geographical features. The NASDP downloaded ABS shapefiles for Australian SLA and SSD's for the years ending 1 July 2010, and added *per capita* consumption for each Centre and SSD. The result is more visually informative than tables, and permits rapid comparison of regions.

RESULTS

THE NORTHERN TERRITORY

Per capita pure alcohol consumption was estimated for the whole of the Northern Territory as shown in the following table. Data presented previously have been updated with adjusted ERPs.

Table 2 Estimated *per capita* alcohol consumption, Northern Territory, 2005/06 to 2009/10

	Total pure alcohol (litres)	Adult ERP aged 15+ and tourism	NT *per capita* consumption	National *per capita* consumption [1]
2005/06	2,697,439	179,376	15.04	9.84
2006/07	2,699,393	187,194	14.42	10.40
2007/08	2,748,884	187,217	14.68	10.56
2008/09	2,719,986	193,562	14.05	10.40
2009/10	2,746,757	200,116	13.73	10.27

[1] National estimate revised for 2007/08 and 2008/09. Does not include alcoholic drinks other than been wine and spirits (Australian Bureau of Statistics 2012)

Volumes of pure alcohol sold were estimated for Urban Centres and Remainder of the Northern Territory. These estimates can be seen in Figure 2 with details in Table 3.

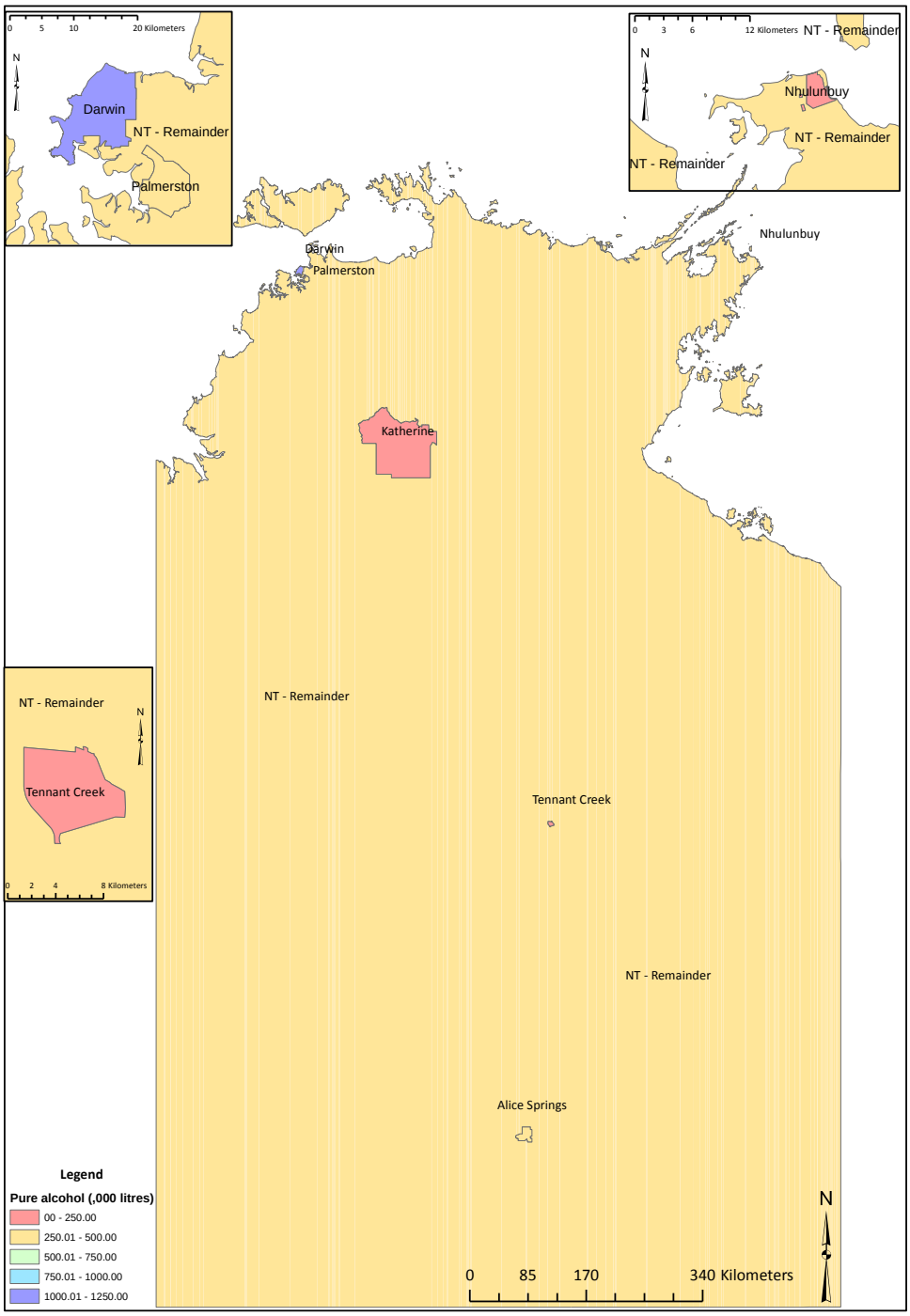

Figure 2 Volumes of pure alcohol sold in Urban Centres and the Remainder, Northern Territory, 2009/10

Table 3 Volumes (litres) of alcohol sold by beverage and pure alcohol in Urban Centres and the Remainder, Northern Territory, 2005/06 – 2009/10

Region	Year	All beer	All wine	All spirits	All cider	All alcohol	All pure alcohol
Alice Springs	2005/06	4,585,659	1,914,813	965,187	102,468	7,568,127	534,450
	2006/07	5,614,803	908,336	996,448	105,715	7,625,302	463,835
	2007/08	5,655,559	612,542	968,536	91,353	7,327,991	427,883
	2008/09	5,628,961	662,107	738,162	122,069	7,151,299	439,481
	2009/10	5,720,011	761,161	834,763	161,753	7,477,689	468,269
Darwin	2005/06	11,651,194	2,497,219	2,363,741	282,460	16,794,614	1,091,862
	2006/07	11,701,243	2,655,899	2,366,210	278,736	17,002,090	1,116,055
	2007/08	12,538,309	2,768,366	2,605,581	290,965	18,203,221	1,187,646
	2008/09	13,183,220	2,414,383	2,022,669	394,856	18,015,128	1,172,174
	2009/10	13,039,773	2,466,786	2,004,610	485,821	17,996,991	1,169,570
Katherine	2005/06	2,159,393	616,759	375,691	30,075	3,181,918	202,034
	2006/07	2,149,974	551,747	405,328	28,268	3,135,317	199,162
	2007/08	2,269,625	376,073	470,980	25,461	3,142,138	189,786
	2008/09	2,572,572	245,024	324,663	41,382	3,183,641	180,063
	2009/10	2,703,863	277,186	331,898	44,172	3,357,118	188,467
Nhulunbuy	2005/06	1,292,201	200,516	303,087	21,423	1,817,227	109,219
	2006/07	1,442,419	115,300	326,480	19,684	1,903,882	110,796
	2007/08	1,224,279	110,291	259,908	17,478	1,611,955	97,698
	2008/09	1,116,390	67,344	137,689	20,742	1,342,166	77,864
	2009/10	992,978	70,441	131,182	18,554	1,213,155	71,044
Palmerston	2005/06	3,133,527	471,526	778,152	86,100	4,469,305	264,522
	2006/07	3,291,274	579,163	796,490	88,486	4,755,413	285,880
	2007/08	3,556,880	628,167	935,323	84,833	5,205,203	315,004
	2008/09	4,048,572	529,019	778,976	113,571	5,470,137	325,538
	2009/10	4,060,241	553,434	875,751	125,948	5,615,374	333,345
Tennant Creek	2005/06	766,997	123,395	101,327	10,512	1,002,230	58,878
	2006/07	783,302	155,382	111,682	8,571	1,058,936	63,669
	2007/08	748,020	139,259	146,135	9,496	1,042,911	62,562
	2008/09	880,118	74,771	104,237	15,360	1,074,486	59,853
	2009/10	929,470	94,552	100,080	22,024	1,146,126	64,942
Remainder of the NT	2005/06	6,619,057	474,123	907,349	220,459	8,220,988	436,474
	2006/07	6,858,056	581,997	1,024,707	171,958	8,636,719	459,995
	2007/08	6,941,946	614,268	1,121,039	157,459	8,834,712	468,304
	2008/09	7,052,630	562,268	884,644	209,851	8,709,393	465,013
	2009/10	6,981,942	535,840	883,668	227,372	8,628,822	451,120
NT totals	**2005/06**	**30,208,028**	**6,298,351**	**5,794,534**	**753,496**	**43,054,409**	**2,697,439**
NT totals	**2006/07**	**31,841,070**	**5,547,824**	**6,027,345**	**701,419**	**44,117,659**	**2,699,393**

Region	Year	All beer	All wine	All spirits	All cider	All alcohol	All pure alcohol
NT totals	**2007/08**	**32,934,619**	**5,248,966**	**6,507,502**	**677,045**	**45,368,131**	**2,748,884**
NT totals	**2008/09**	**34,482,463**	**4,554,916**	**4,991,040**	**917,830**	**44,946,250**	**2,719,986**
NT totals	**2009/10**	**34,428,279**	**4,759,400**	**5,161,951**	**1,085,644**	**45,435,27**	**2,746,757**

QUEENSLAND

Per capita consumption (litres of absolute alcohol) based on ESP was estimated for the whole of Queensland as shown in the following table.

Table 4 Estimated *per capita* consumption (litres of absolute alcohol), Queensland 2007/08 to 2009/10

	Total pure alcohol (litres)	ESP aged 15+	QLD *per capita* consumption	National *per capita* consumption [1]
2007/08	37,955,769	3,347,396	11.34	10.56
2008/09	37,817,375	3,443,413	10.98	10.40
2009/10	38,760,678	3,513,996	11.03	10.27

[1] National estimate revised for 2007/08 and 2008/09. Does not include alcoholic drinks other than been wine and spirits (Australian Bureau of Statistics 2012)

Volumes of alcohol sold and *per capita* pure alcohol consumption using ESP were estimated for Statistical Subdivisions (SSDs) for 2009/10. These estimates can be seen in Figure 3 to Figure 8 with details in Table 5. *Per capita* pure alcohol consumption in maps has been estimated using ESP as the population base. Data presented previously have been updated as detailed above.

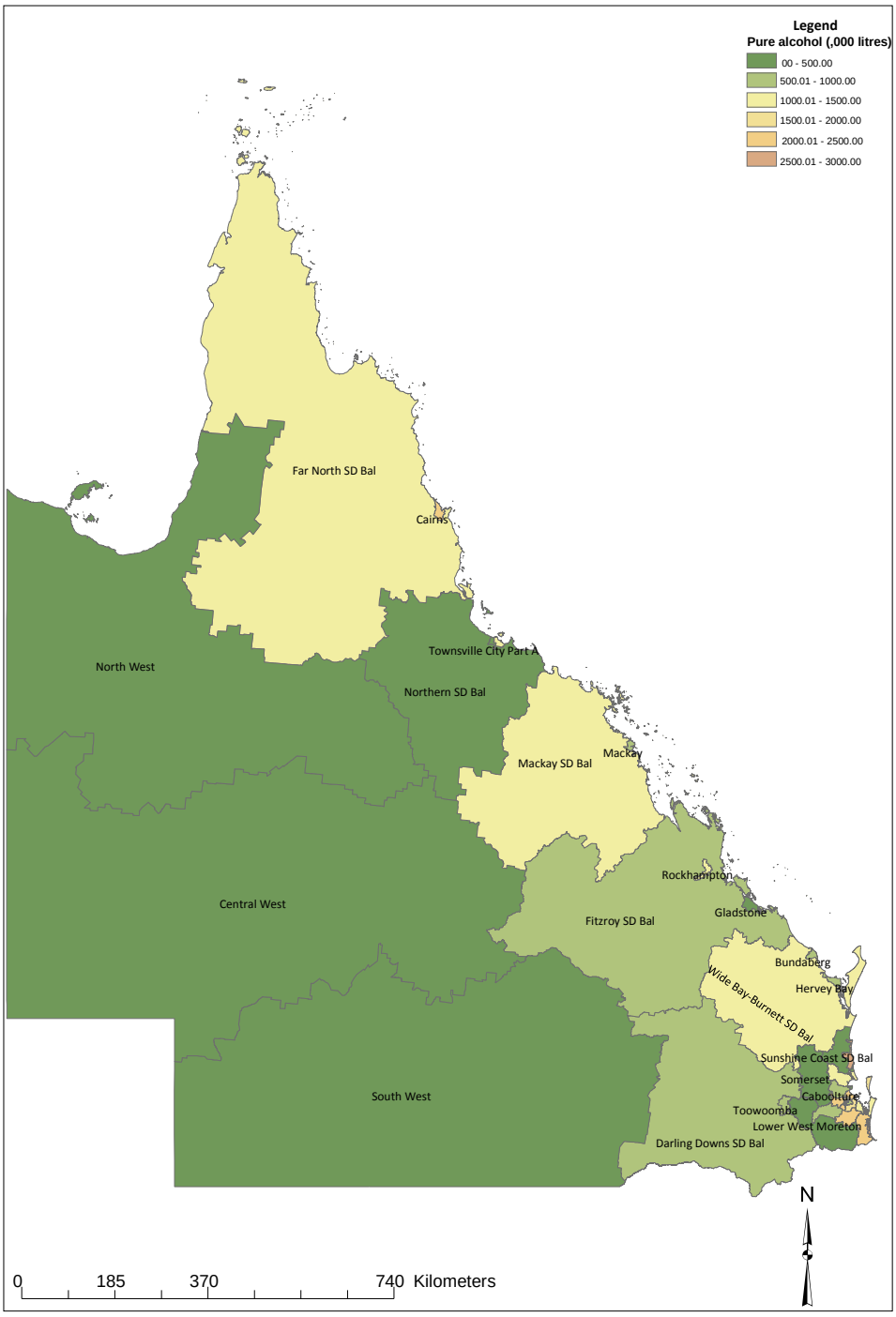

Figure 3 Volumes of pure alcohol sold, Statistical Subdivisions, Queensland, 2009/10

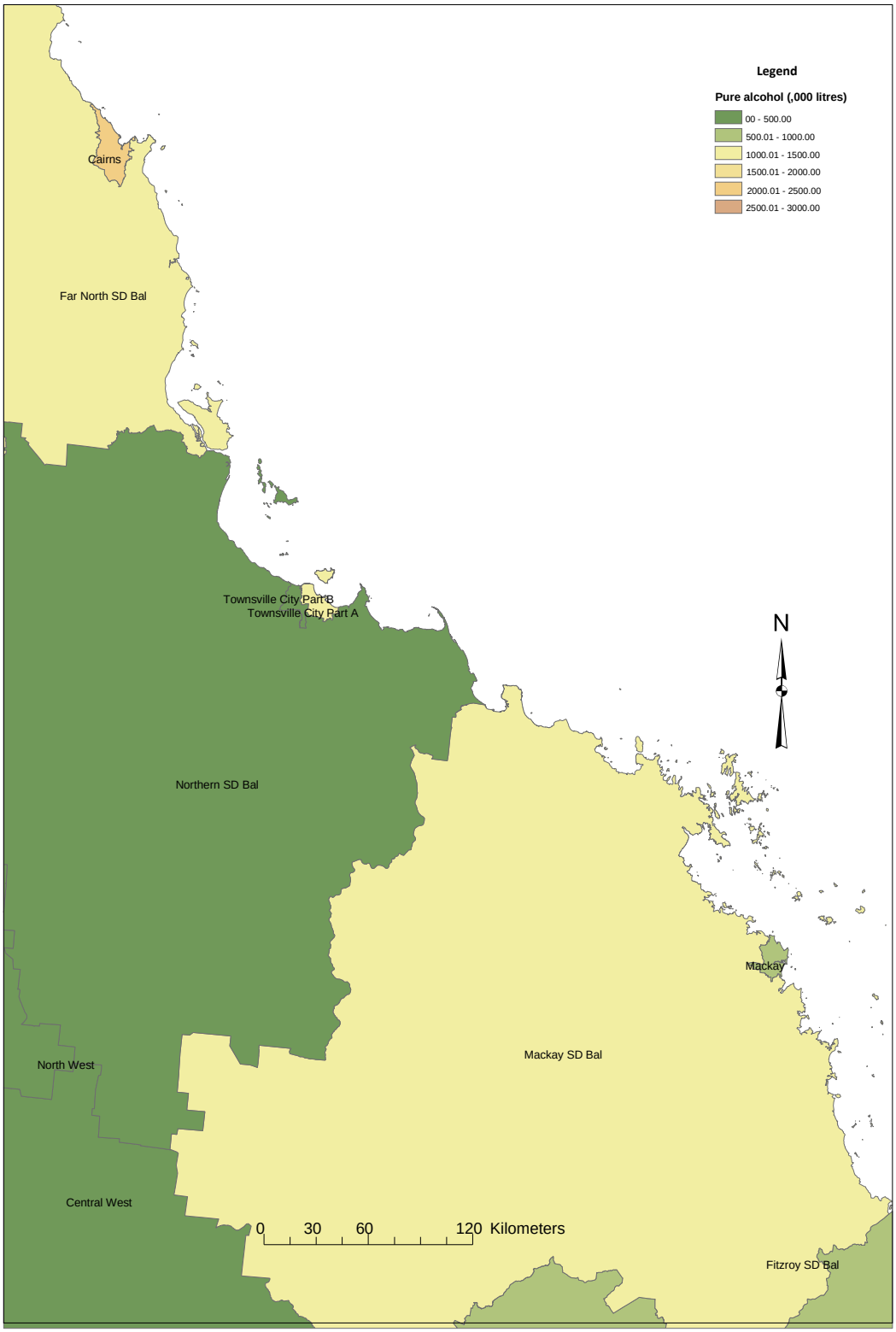

Figure 4 Volumes of pure alcohol sold, Statistical Subdivisions, areas of high tourism, Queensland, 2009/10

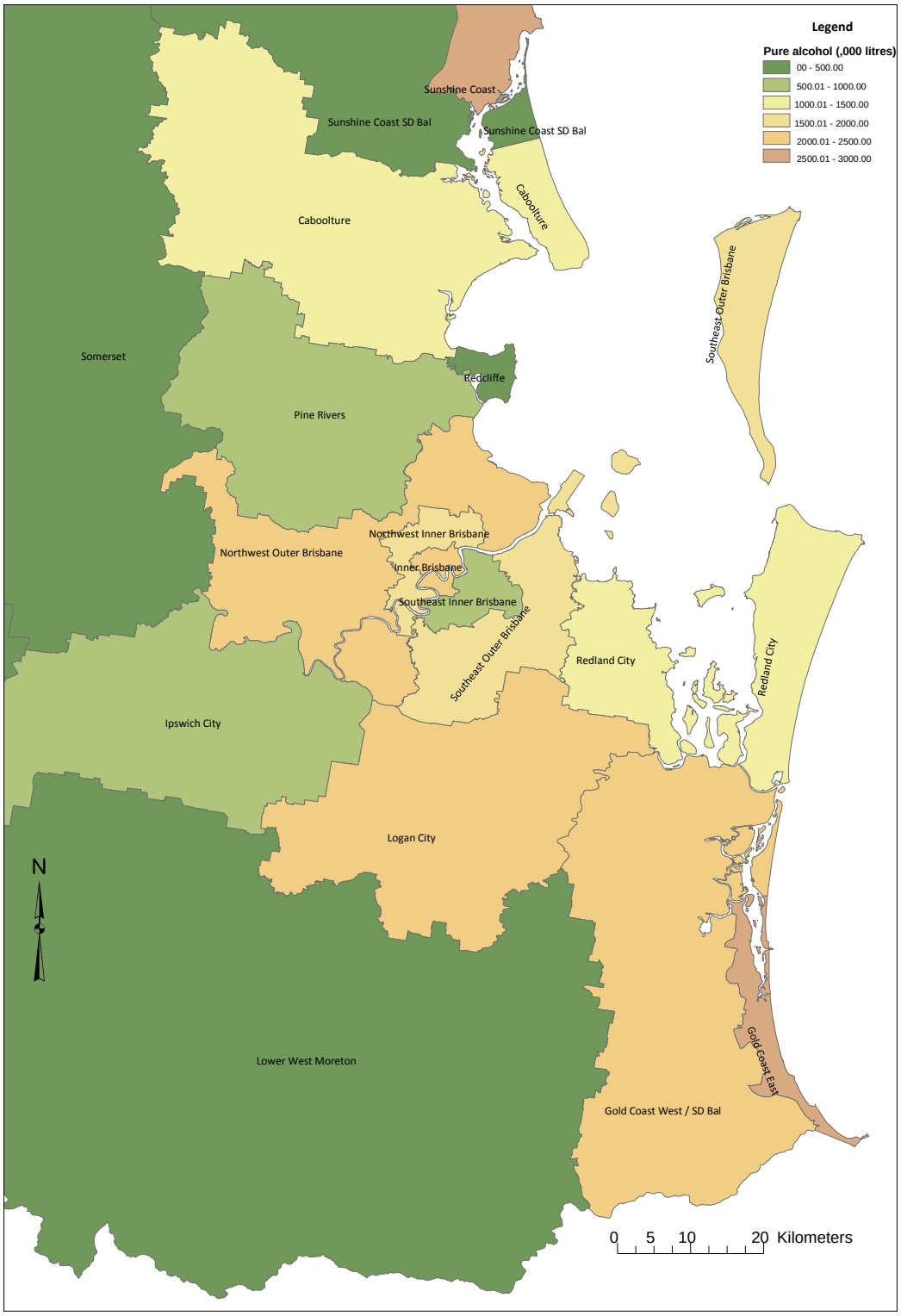

Figure 5 Volumes of pure alcohol sold, Statistical Subdivisions, Brisbane and environs, Queensland, 2009/10

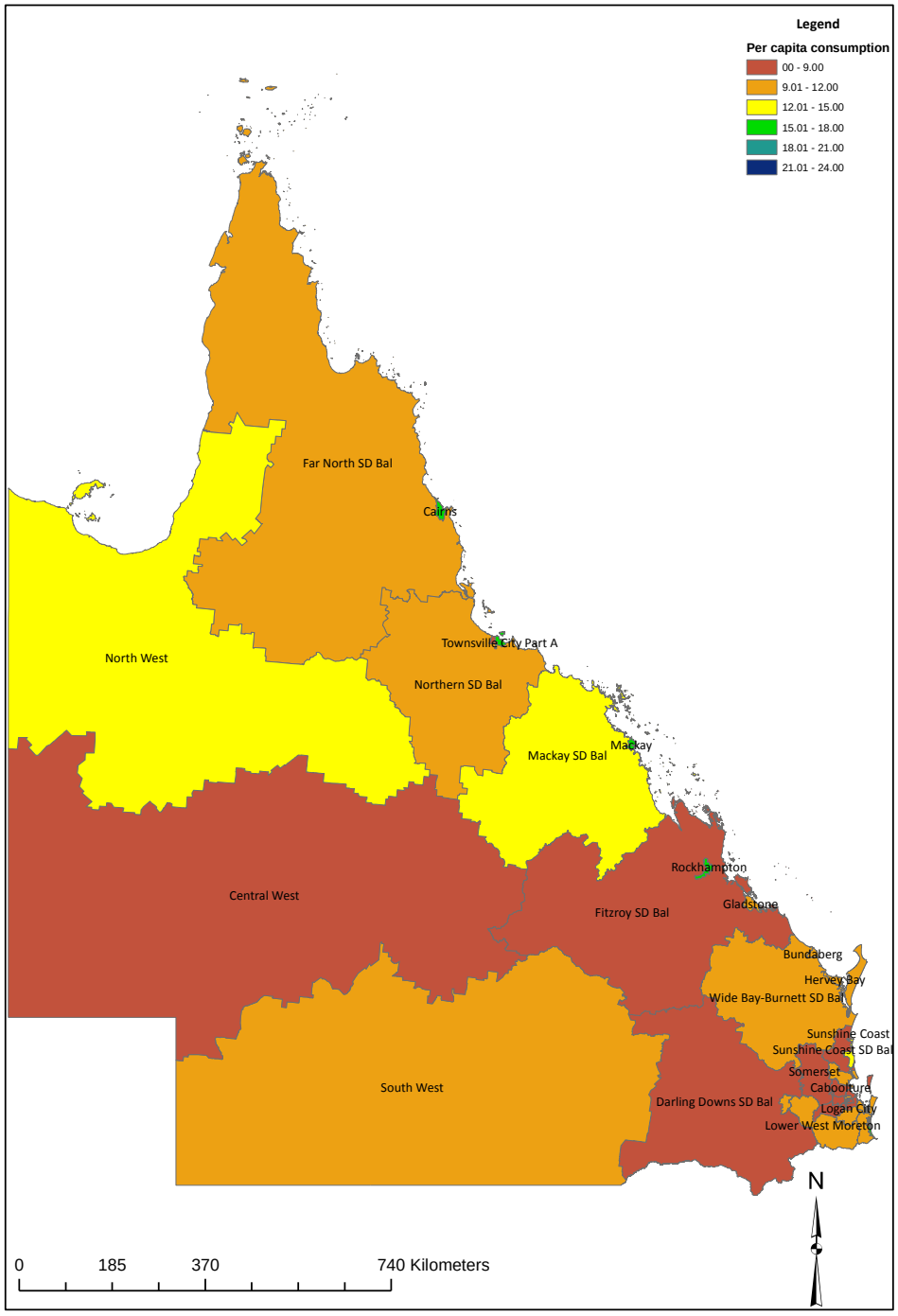

Figure 6 Estimated *per capita* consumption (litres of absolute alcohol) based on ESP, Statistical Subdivisions, Queensland, 2009/10

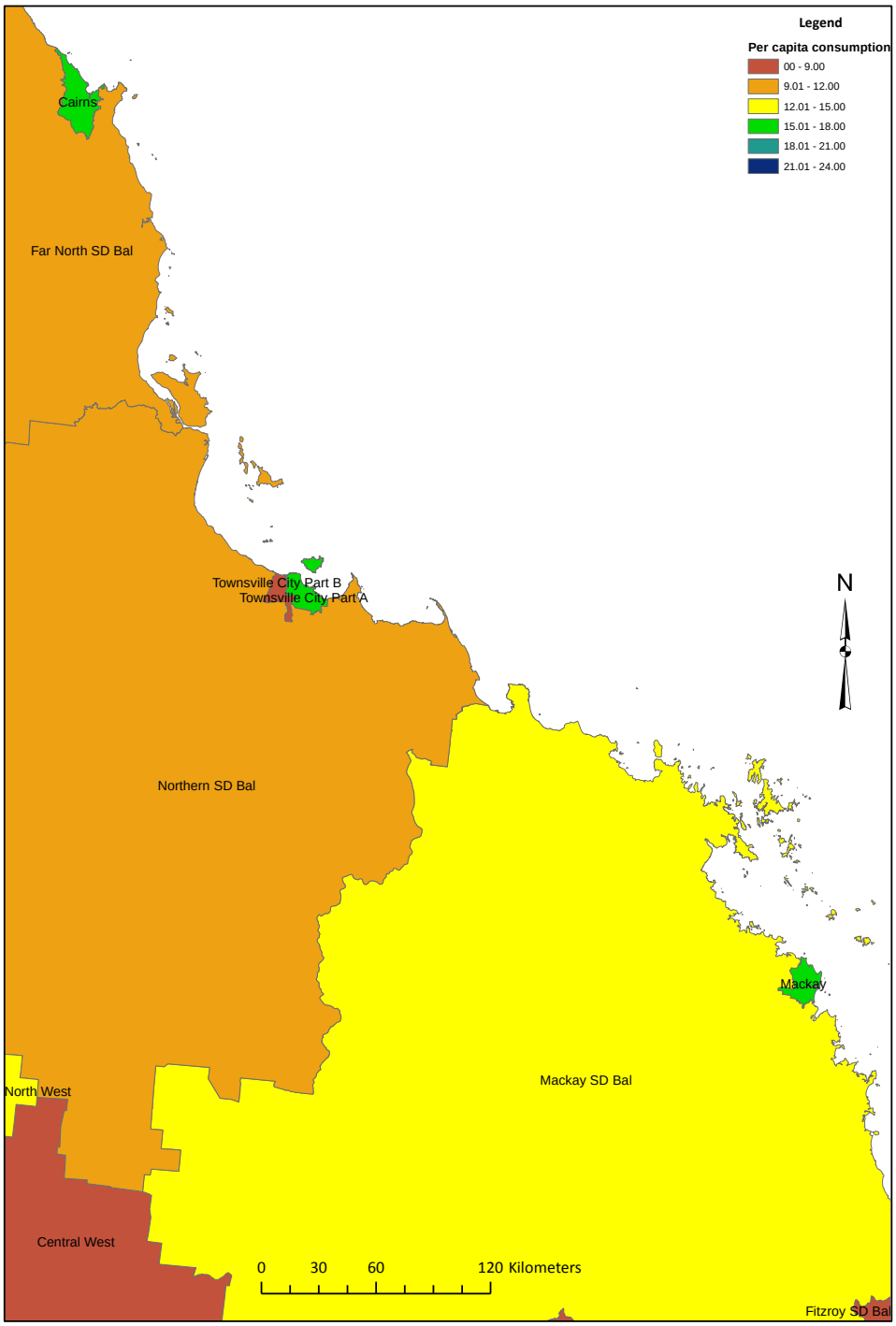

Figure 7 Estimated *per capita* consumption (litres of absolute alcohol) based on ESP, Statistical Subdivisions, areas of high tourism, Queensland, 2009/10

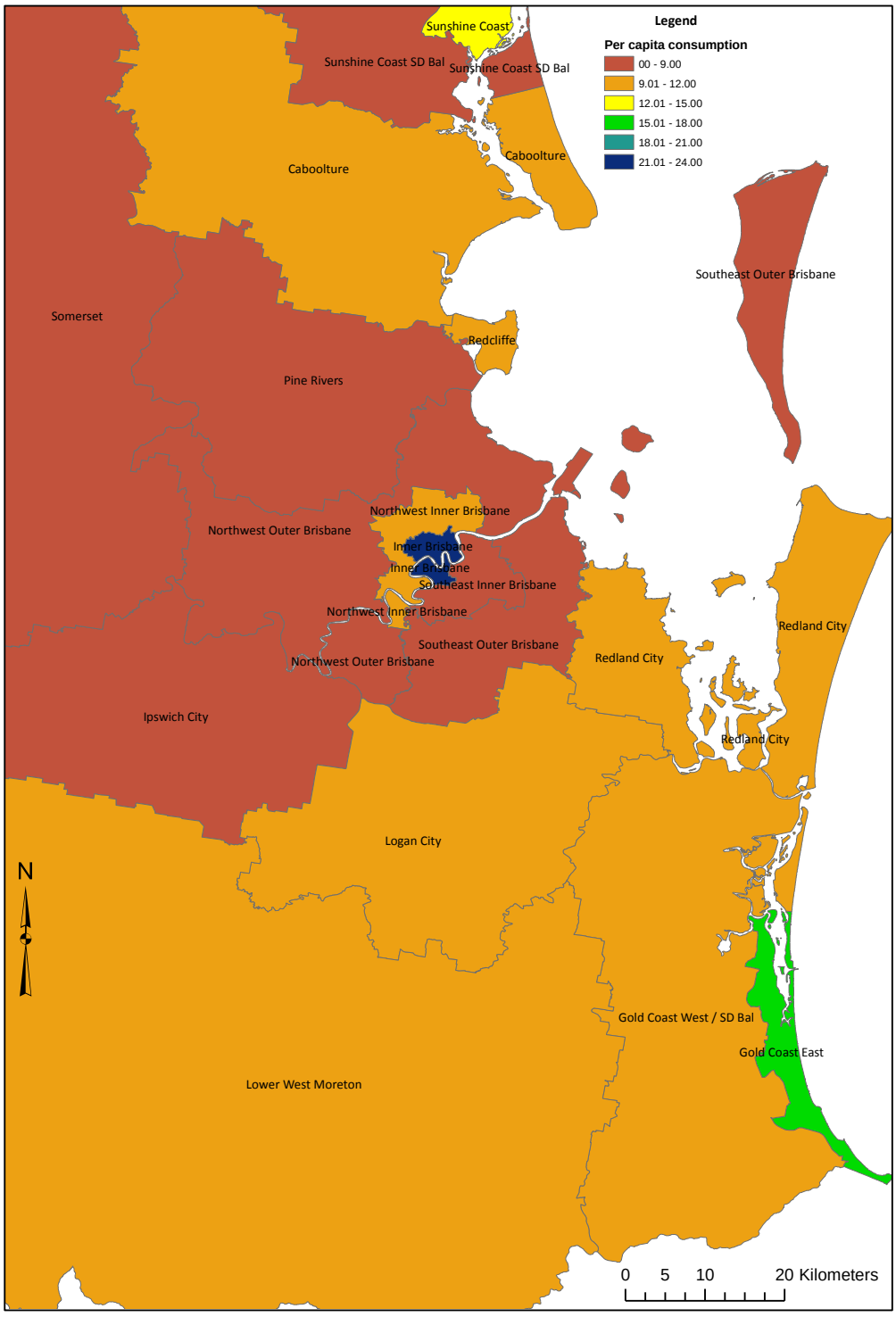

Figure 8 Estimated *per capita* consumption (litres of absolute alcohol) based on ESP, Statistical Subdivisions, Brisbane and environs, Queensland, 2009/10

Table 5 Volumes (litres) of alcohol sold by beverage, pure alcohol, and consumption by ESP in SSDs, Queensland 2007/08 to 2009/10[1]

SSD code	SSD name	Year	All beer	All wine	All spirits	All other[2]	All alcohol	All pure alcohol	pcc/ESP
30501	Inner Brisbane	2007/08	20,031,020	6,254,852	4,184,702	275,687	30,746,262	2,290,449	24.26
		2008/09	21,868,893	5,420,338	3,136,763	389,815	30,815,809	2,189,956	22.84
		2009/10	20,810,966	5,072,975	2,917,372	551,252	29,352,565	2,113,694	21.87
30503	Northwest Inner Brisbane	2007/08	11,468,553	4,391,818	2,668,763	117,946	18,647,079	1,388,824	9.03
		2008/09	12,569,936	4,640,351	2,241,293	181,591	19,633,170	1,475,838	9.45
		2009/10	14,090,083	5,232,806	2,149,503	256,912	21,729,304	1,636,725	10.34
30507	Northwest Outer Brisbane	2007/08	19,711,062	6,706,825	4,523,324	190,578	31,131,789	2,140,284	8.28
		2008/09	26,160,197	5,478,986	3,300,148	209,551	35,148,882	2,150,884	8.14
		2009/10	21,205,572	5,760,909	4,168,368	330,808	31,465,658	2,149,493	7.99
30509	Southeast Inner Brisbane	2007/08	8,483,958	2,770,272	1,582,019	89,198	12,925,447	907,922	7.09
		2008/09	8,349,857	2,283,575	1,211,096	101,988	11,946,516	822,900	6.31
		2009/10	9,580,767	2,639,521	1,299,571	160,206	13,680,065	945,726	7.17
30511	Southeast Outer Brisbane	2007/08	12,108,612	5,856,534	3,368,305	146,451	21,479,902	1,655,400	8.56
		2008/09	15,834,063	4,202,976	2,558,023	151,172	22,746,233	1,513,496	7.61
		2009/10	15,889,052	3,809,842	2,672,305	200,987	22,572,186	1,502,973	7.45
30520	Caboolture	2007/08	11,092,220	2,577,338	3,460,788	136,645	17,266,991	1,084,755	9.90
		2008/09	16,927,467	2,488,516	2,786,151	158,965	22,361,099	1,233,937	10.83
		2009/10	12,692,531	3,092,555	2,785,233	235,731	18,806,050	1,226,786	10.41

SSD code	SSD name	Year	All beer	All wine	All spirits	All other[2]	All alcohol	All pure alcohol	pcc/ESP
30525	Ipswich City	2007/08	10,374,585	2,077,565	3,829,911	129,237	16,411,297	1,024,720	8.97
		2008/09	11,040,495	1,853,000	2,464,368	143,147	15,501,010	943,556	7.86
		2009/10	10,765,367	2,092,171	2,601,854	174,345	15,633,738	999,812	8.05
30530	Logan City	2007/08	17,704,305	4,300,939	6,697,034	206,638	28,908,916	1,882,451	8.88
		2008/09	19,450,775	3,616,880	4,797,139	216,410	28,081,204	1,796,702	8.22
		2009/10	22,225,718	5,007,216	4,774,237	279,805	32,286,976	2,100,507	9.41
30540	Pine Rivers	2007/08	8,668,196	3,071,068	2,484,311	105,396	14,328,971	990,877	8.63
		2008/09	10,559,806	2,446,004	2,080,366	119,571	15,205,748	975,444	8.14
		2009/10	9,559,248	2,716,516	1,982,462	166,927	14,425,153	995,750	8.03
30545	Redcliffe	2007/08	3,758,515	1,158,132	1,162,838	55,342	6,134,827	425,363	9.71
		2008/09	3,756,729	1,042,261	792,965	57,846	5,649,801	383,560	8.55
		2009/10	3,607,237	1,260,494	812,042	81,160	5,760,932	417,944	9.14
30550	Redland City	2007/08	9,168,065	3,194,018	2,862,317	123,912	15,348,313	1,086,720	10.46
		2008/09	11,764,092	2,885,453	2,006,757	131,058	16,787,360	1,100,694	10.31
		2009/10	11,176,455	2,957,704	1,885,582	186,066	16,205,807	1,094,372	10.08
30710	Gold Coast East	2007/08	23,566,544	9,061,169	6,180,895	269,206	39,077,814	2,904,879	16.49
		2008/09	24,651,929	7,770,039	4,675,222	298,219	37,395,410	2,711,945	15.09
		2009/10	28,271,145	8,049,676	4,514,078	366,083	41,200,981	2,937,896	16.07
30715	Gold Coast West	2007/08	20,421,723	7,860,125	5,702,341	269,656	34,253,845	2,473,181	11.97
		2008/09	20,312,941	6,162,922	4,208,068	284,231	30,968,162	2,186,896	10.18

SSD code	SSD name	Year	All beer	All wine	All spirits	All other[2]	All alcohol	All pure alcohol	pcc/ESP
30720	Gold Coast SD Bal	2007/08	CONFIDENTIALISED						
		2008/09							
30715/30720	Gold Coast West/SD Bal	2009/10	24,039,540	6,816,131	4,229,040	366,495	35,451,206	2,460,448	10.51
30905	Sunshine Coast	2007/08	22,363,481	10,382,673	5,741,719	271,260	38,759,134	2,881,894	15.18
		2008/09	25,947,017	8,551,822	4,601,426	330,282	39,430,548	2,760,356	14.11
		2009/10	26,951,874	8,579,206	4,121,149	474,884	40,127,114	2,813,833	14.05
30910	Sunshine Coast SD Bal	2007/08	4,359,523	1,362,496	1,359,799	81,678	7,163,497	476,084	8.60
		2008/09	5,493,701	1,137,010	896,186	85,793	7,612,690	466,084	8.08
		2009/10	4,120,522	1,072,178	870,015	93,763	6,156,478	403,686	6.82
31205	Upper West Moreton Somerset	2007/08	1,476,137	229,452	401,105	15,568	2,122,261	119,364	7.91
		2008/09	1,692,809	183,721	239,837	19,282	2,135,649	114,698	7.24
		2009/10	1,325,597	200,979	269,603	17,446	1,813,625	105,497	6.38
31210	Lower West Moreton	2007/08	4,358,329	915,616	1,225,613	48,785	6,548,342	397,181	9.75
		2008/09	5,181,457	754,562	814,780	51,236	6,802,034	389,328	9.12
		2009/10	4,628,693	990,629	909,865	62,041	6,591,228	411,382	9.35
31505	Bundaberg	2007/08	5,172,629	1,268,950	1,500,257	54,541	7,996,377	497,618	9.88
		2008/09	7,931,326	1,289,720	1,200,535	65,275	10,486,857	603,713	11.69
		2009/10	5,588,559	1,681,225	1,267,952	86,871	8,624,606	600,450	11.40
31507	Hervey Bay	2007/08	CONFIDENTIALISED						
		2008/09	6,323,043	1,279,219	883,452	85,321	8,571,035	536,387	11.37
		2009/10	5,527,415	1,465,167	885,254	132,305	8,010,141	535,067	10.98

SSD code	SSD name	Year	All beer	All wine	All spirits	All other[2]	All alcohol	All pure alcohol	pcc/ESP
31510	Wide Bay-Burnett SD Bal	2007/08	14,863,653	2,913,918	3,656,510	156,839	21,590,919	1,283,418	10.54
		2008/09	20,462,780	2,316,934	2,391,479	162,318	25,333,511	1,352,012	10.77
		2009/10	14,955,379	2,886,628	2,528,011	191,133	20,561,151	1,267,228	9.90
32001	Toowoomba	2007/08	8,398,949	2,561,390	2,690,512	76,340	13,727,191	944,630	10.48
		2008/09	9,639,930	2,050,376	2,016,707	91,213	13,798,226	916,672	9.91
		2009/10	10,496,249	2,097,809	2,149,095	94,945	14,838,097	957,058	10.11
32005	Darling Downs SD Bal	2007/08	9,776,719	1,591,944	2,269,747	71,525	13,709,935	791,045	9.89
		2008/09	14,814,379	1,201,365	1,495,940	67,995	17,579,678	879,408	10.75
		2009/10	8,957,068	1,473,056	1,581,495	74,102	12,085,721	722,005	8.68
32505	South West	2007/08	4,260,380	269,058	701,408	9,533	5,240,379	257,687	12.29
		2008/09	4,444,870	270,096	497,407	22,645	5,235,019	258,576	12.29
		2009/10	3,693,467	353,302	557,592	14,236	4,618,596	250,037	11.81
33005	Rockhampton	2007/08	11,302,218	1,408,513	2,841,558	81,041	15,633,330	881,987	15.64
		2008/09	13,425,994	1,466,398	2,294,747	108,985	17,296,125	961,900	16.77
		2009/10	12,754,084	1,720,123	2,339,575	121,568	16,935,351	1,004,391	17.32
33010	Gladstone	2007/08	4,779,588	597,240	1,229,470	56,500	6,662,798	376,995	10.61
		2008/09	8,319,796	592,751	935,478	63,276	9,911,301	508,443	13.82
		2009/10	5,122,223	674,152	950,079	64,586	6,811,041	406,518	10.89
33015	Fitzroy SD Bal	2007/08	8,390,937	1,274,119	2,255,305	88,767	12,009,128	699,269	10.37
		2008/09	10,351,511	1,027,871	1,551,739	91,633	13,022,753	709,252	10.25
		2009/10	7,680,137	1,035,725	1,507,202	119,093	10,342,158	612,398	8.73

SSD code	SSD name	Year	All beer	All wine	All spirits	All other[2]	All alcohol	All pure alcohol	pcc/ESP
33505	Central West	2007/08	1,740,883	143,527	290,016	7,096	2,181,522	112,198	10.71
		2008/09	1,584,712	112,369	154,290	6,435	1,857,806	88,153	8.38
		2009/10	1,302,120	137,677	168,585	7,765	1,616,146	88,694	8.38
34005	Mackay	2007/08	11,248,840	1,676,191	2,734,248	117,466	15,776,745	913,507	15.54
		2008/09	9,306,092	1,273,394	2,344,887	130,348	13,054,721	818,081	13.47
		2009/10	13,437,951	1,192,201	2,392,627	156,743	17,179,522	953,765	15.32
34010	Mackay SD Bal	2007/08	13,100,251	1,829,374	3,102,168	163,996	18,195,790	1,074,703	13.74
		2008/09	16,887,400	1,672,313	2,226,969	162,049	20,948,731	1,167,858	14.58
		2009/10	13,092,808	1,850,996	2,757,511	225,161	17,926,476	1,114,816	13.71
34505	Townsville City Part A	2007/08	15,165,861	3,018,275	3,395,824	199,896	21,779,856	1,331,680	16.40
		2008/09	25,305,733	2,504,331	2,895,162	250,713	30,955,939	1,567,855	18.85
		2009/10	17,991,589	2,468,677	2,888,590	302,595	23,651,451	1,421,986	16.78
34510	Townsville City Part B	2007/08	2,639,622	338,713	761,376	33,474	3,773,186	207,167	5.07
		2008/09	3,191,428	449,346	817,140	39,741	4,497,654	262,965	6.08
		2009/10	4,513,568	479,836	919,439	78,138	5,990,980	331,164	7.39
34515	Northern SD Bal	2007/08	6,255,679	749,521	1,237,735	54,190	8,297,125	444,091	9.92
		2008/09	6,452,059	613,298	767,868	38,097	7,871,323	403,883	8.87
		2009/10	5,437,128	791,515	1,054,568	60,679	7,343,891	421,856	9.20
35005	Cairns	2007/08	18,319,120	4,196,580	4,287,710	355,827	27,159,238	1,731,593	14.91
		2008/09	23,986,864	4,495,517	3,425,454	371,713	32,279,548	1,994,343	16.65
		2009/10	26,255,562	4,611,789	3,620,166	580,443	35,067,960	2,136,730	17.43

SSD code	SSD name	Year	All beer	All wine	All spirits	All other[2]	All alcohol	All pure alcohol	pcc/ESP
35010	Far North SD Bal	2007/08	13,753,546	2,816,187	3,073,542	201,364	19,844,639	1,188,965	12.27
		2008/09	14,081,326	2,521,194	2,166,264	160,941	18,929,725	1,106,733	11.19
		2009/10	13,680,977	2,849,867	2,477,797	176,713	19,185,354	1,174,709	11.73
35505	North West	2007/08	5,822,305	616,507	1,640,791	42,978	8,122,582	439,398	14.58
		2008/09	5,793,598	597,725	1,091,363	44,183	7,526,868	420,306	14.03
		2009/10	6,092,176	662,912	1,076,068	49,118	7,880,273	445,283	14.83
Total	**Queensland**	**2007/08**	**370,470,237**	**101,367,242**	**96,478,749**	**4,396,134**	**572,712,362**	**37,955,769**	**11.34**
Total	**Queensland**	**2008/09**	**444,286,004**	**86,776,624**	**72,053,441**	**4,899,241**	**608,015,309**	**37,817,375**	**10.98**
Total	**Queensland**	**2009/10**	**417,518,828**	**93,784,168**	**74,083,886**	**6,541,102**	**591,927,984**	**38,760,678**	**11.03**

1. Details for SSDs with fewer than 6 clearly identified licensed premises have been excluded including Gold Coast SD Bal (30720) in 2007/08 and 2009/09 and Hervey Bay (31507) in 2007/08. Gold Coast SD Bal and Gold Coast West have been amalgamated in 2009/10 to accommodate boundary changes.
2. Alcoholic soda, cider and mead.
3. Totals include all SSDs and may not equal the sum of individual SSDs shown.

WESTERN AUSTRALIA

Per capita consumption (litres of absolute alcohol) based on ESP was estimated for the whole of Western Australia as shown in the following table.

Table 6 Estimated *per capita* pure alcohol consumption (litres of absolute alcohol), Western Australia, 2005/06 to 2009/10

Year	Total pure alcohol (litres)	ESP aged 15+	WA *per capita* consumption/ESP	National *per capita* consumption[1]
2005/06	17,797,940	1,584,784	11.23	9.84
2006/07	18,006,305	1,621,830	11.10	10.40
2007/08	21,312,499	1,675,644	12.72	10.56
2008/09	20,245,103	1,732,319	11.69	10.40
2009/10	21,959,374	1,774,718	12.37	10.27

1National estimate. Does not include alcohol drinks other than beer, wine and spirits (Australian Bureau of Statistics 2010)

Volumes of alcohol sold and *per capita* pure alcohol consumption were estimated for Statistical Subdivisions (SSDs) for 2008/09. These estimates can be seen in Figure 9 to Figure 12 with details in Table 7. *Per capita* pure alcohol consumption in maps has been estimated using ESP as the population base. Data presented previously have been updated as detailed above

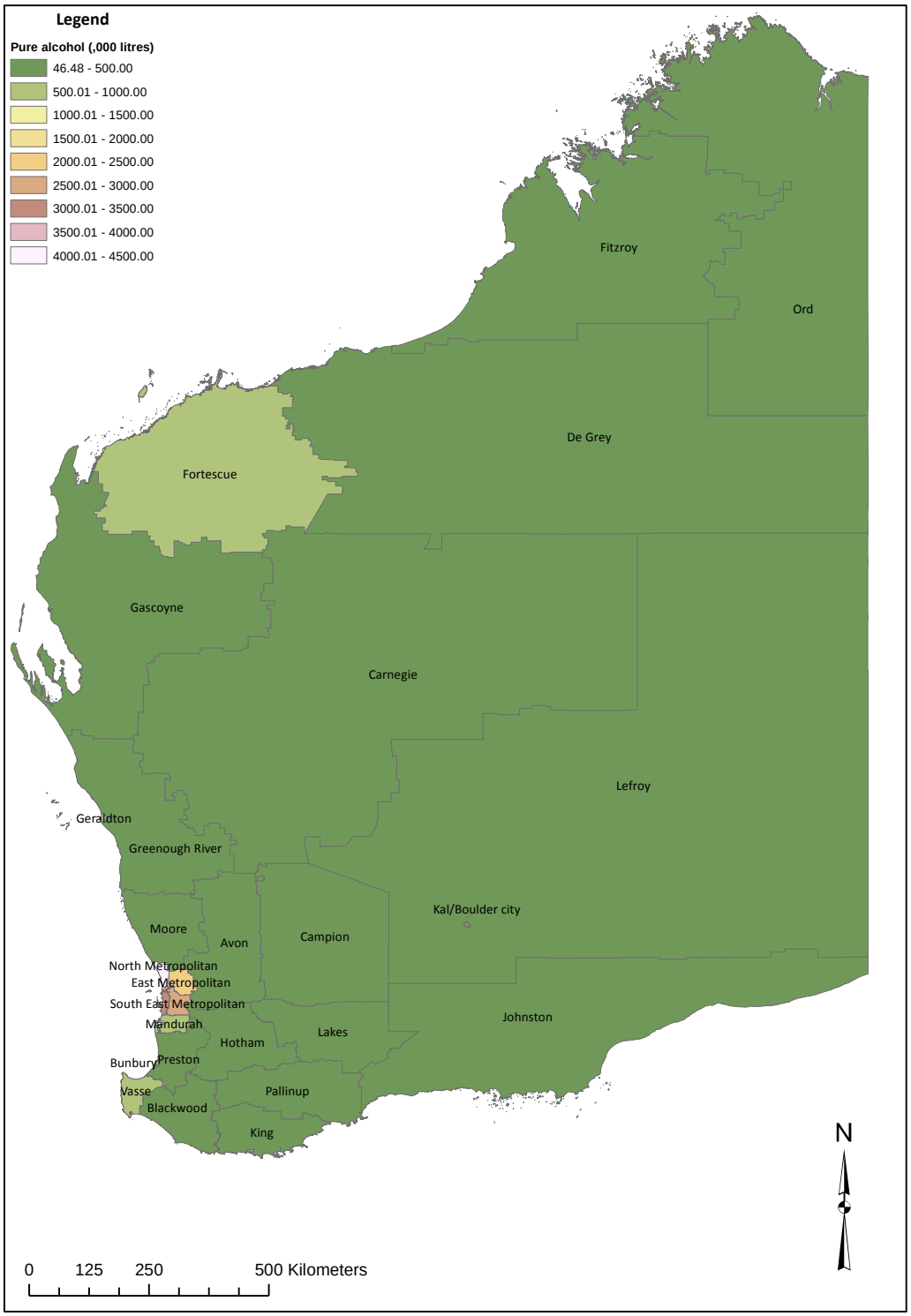

Figure 9 Volumes of pure alcohol sold, Statistical Subdivisions, Western Australia, 2009/10

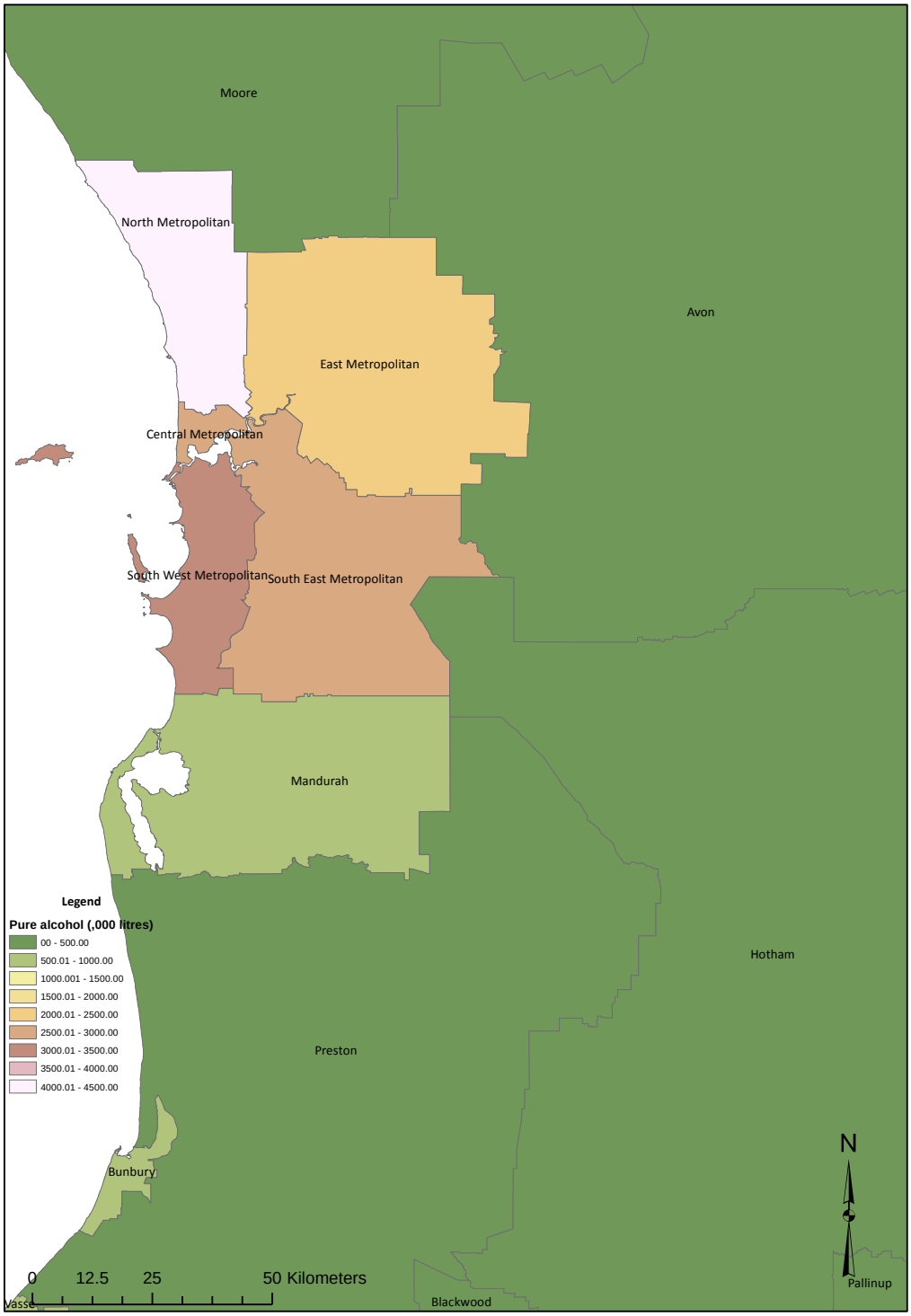

Figure 10 Volumes of pure alcohol sold, Statistical Subdivisions, Perth and environs, Western Australia, 2009/10

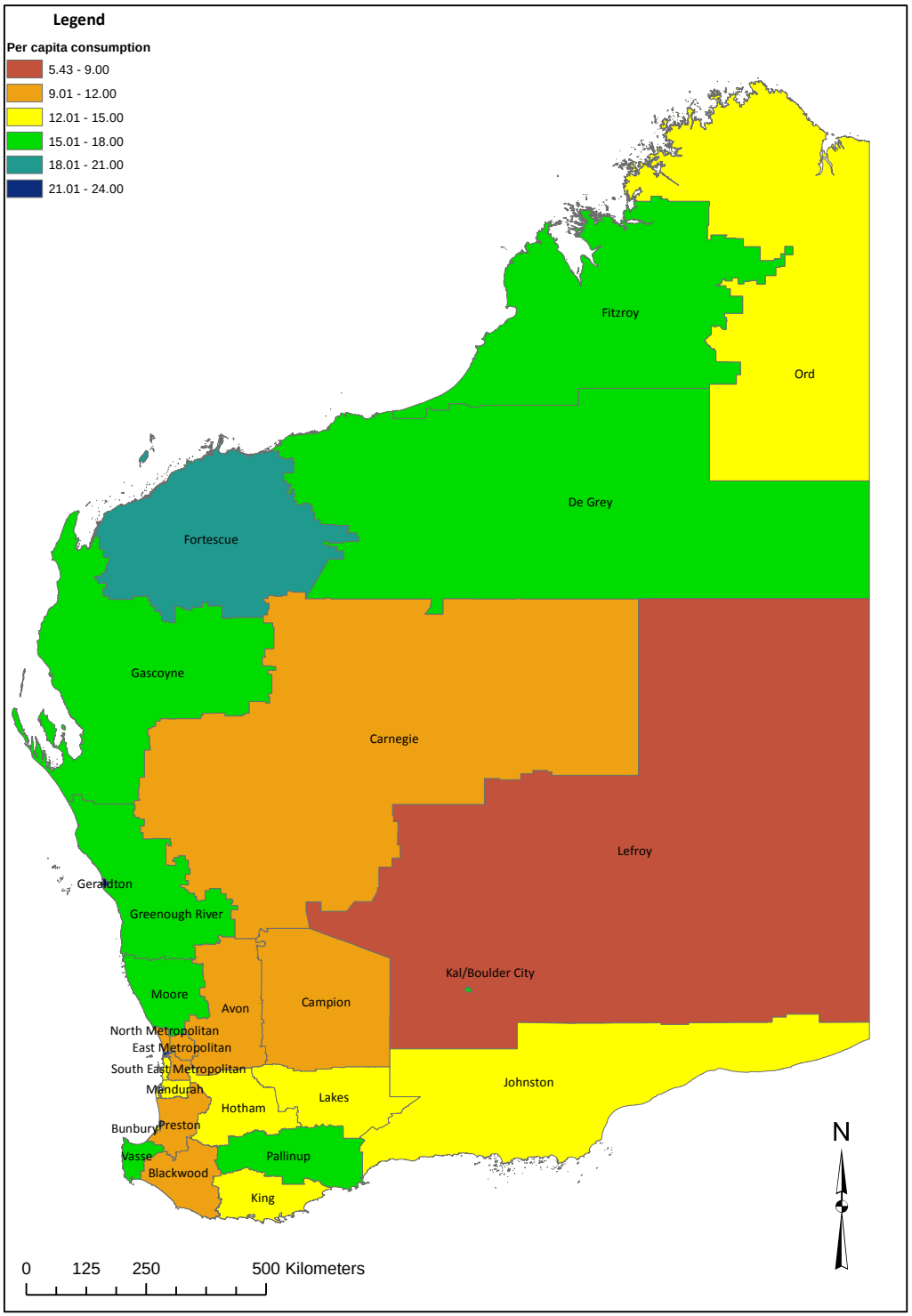

Figure 11 Estimated *per capita* consumption (litres of absolute alcohol) based on ESP, Statistical Subdivisions, Western Australia, 2009/10

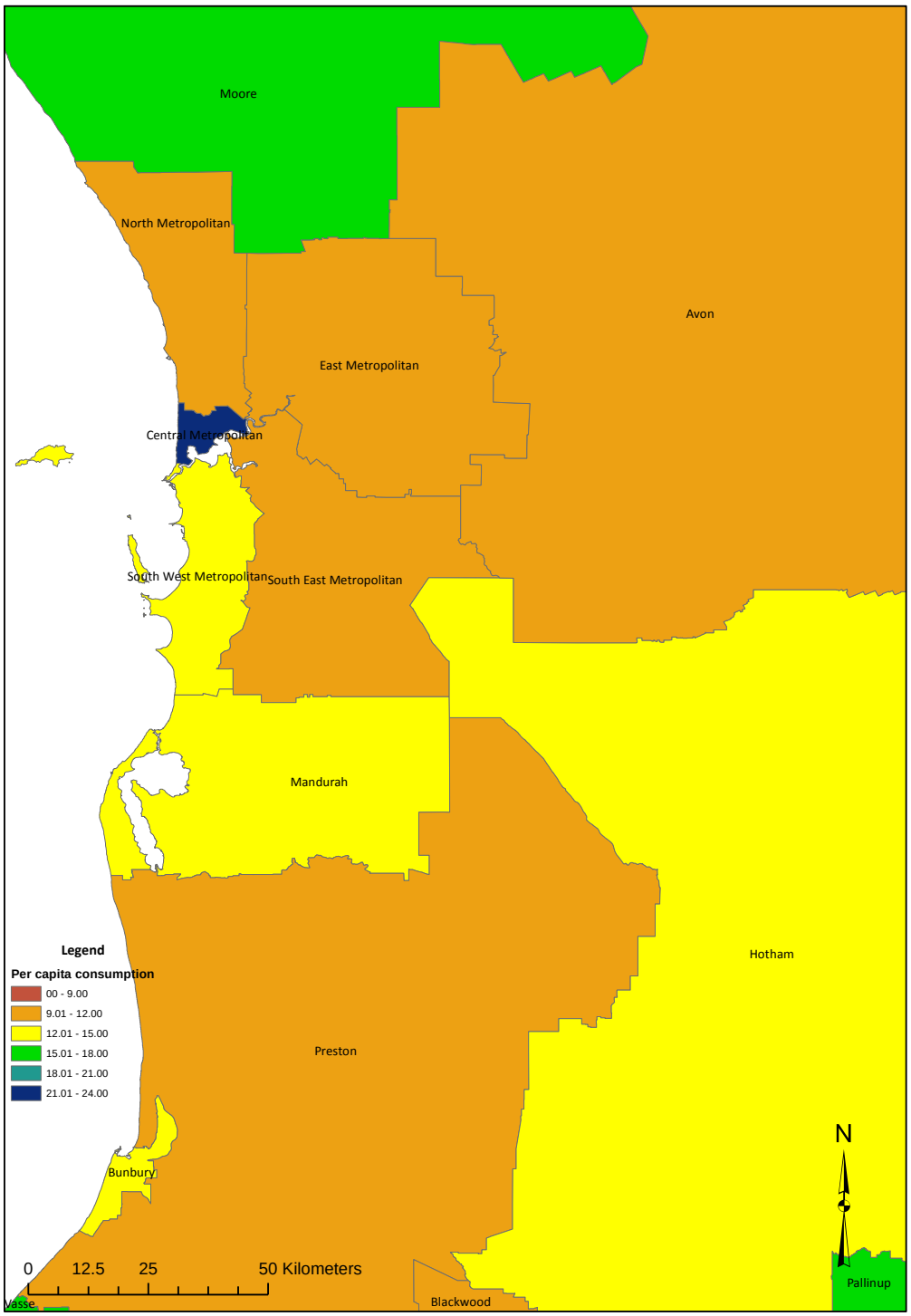

Figure 12 Estimated *per capita* consumption (litres of absolute alcohol) based on ESP, Statistical Subdivisions, Perth and environs, Western Australia, 2009/10

Table 7 Volumes (litres) of alcohol sold by beverage, pure alcohol and consumption in SSDs, Western Australia, 2005/06 to 2009/10

SSD code	SSD name	Year	All beer	All wine	All spirits	All alcohol	All pure alcohol	pcc/ESP
50505	Central Metropolitan	2005/06	17,248,607	7,258,490	2,035,995	26,543,092	1,894,608	16.61
		2006/07	18,265,400	6,070,811	3,178,137	27,514,348	1,897,047	16.75
		2007/08	28,932,979	4,687,754	2,368,757	35,989,490	2,134,699	18.37
		2008/09	18,150,270	6,416,269	2,349,059	26,915,599	1,870,402	15.59
		2009/10	25,932,975	8,318,219	3,855,636	38,106,830	2,598,033	21.33
50510	East Metropolitan	2005/06	18,692,695	4,243,287	3,647,112	26,583,094	1,758,871	9.10
		2006/07	19,905,179	4,047,972	3,432,631	27,385,782	1,730,017	8.83
		2007/08	30,977,368	4,615,083	4,054,507	39,646,958	2,380,088	11.79
		2008/09	20,724,211	5,512,715	3,935,032	30,171,958	2,019,055	9.69
		2009/10	22,191,020	6,017,558	3,515,228	31,723,805	2,095,112	9.82
50515	North Metropolitan	2005/06	29,365,073	7,994,220	4,961,644	42,320,937	2,856,734	8.27
		2006/07	30,752,196	8,928,726	5,386,876	45,067,798	3,026,932	8.60
		2007/08	60,269,880	7,787,075	4,653,816	72,710,771	4,201,931	11.53
		2008/09	37,032,674	12,551,909	6,799,177	56,383,759	3,937,121	10.44
		2009/10	39,258,724	12,551,431	7,167,265	58,977,420	4,084,360	10.56
50520	South West Metropolitan	2005/06	23,889,339	7,280,395	4,543,175	35,712,909	2,468,477	10.19
		2006/07	26,378,785	7,068,077	5,138,986	38,585,848	2,568,979	10.47
		2007/08	40,947,881	8,515,527	4,346,084	53,809,492	3,354,285	13.22
		2008/09	28,756,693	9,180,629	5,872,010	43,809,332	3,045,848	11.57
		2009/10	30,947,594	10,017,220	5,995,152	46,959,965	3,258,725	12.01

SSD code	SSD name	Year	All beer	All wine	All spirits	All alcohol	All pure alcohol	pcc/ESP
50525	South East Metropolitan	2005/06	25,285,454	7,121,300	4,888,628	37,295,382	2,545,291	9.58
		2006/07	26,628,132	7,547,412	5,700,917	39,876,461	2,697,521	9.98
		2007/08	31,831,646	4,916,426	5,256,687	42,004,759	2,575,784	9.20
		2008/09	28,584,766	7,782,109	5,445,905	41,812,779	2,819,128	9.71
		2009/10	30,122,604	8,046,547	5,092,610	43,261,761	2,871,242	9.64
51001	Mandurah	2005/06	7,403,499	1,598,272	1,241,463	10,243,234	658,586	12.58
		2006/07	7,472,082	1,625,707	1,364,667	10,462,456	660,975	12.30
		2007/08	10,180,296	1,648,656	1,421,490	13,250,442	796,299	13.90
		2008/09	9,015,162	2,269,713	1,582,181	12,867,056	837,867	13.79
		2009/10	8,757,102	2,497,440	1,391,673	12,646,215	838,957	13.28
51003	Bunbury	2005/06	6,230,267	990,367	1,279,093	8,499,727	540,164	12.84
		2006/07	6,199,175	1,255,455	1,681,833	9,136,463	600,674	13.94
		2007/08	7,568,656	1,223,668	1,205,603	9,997,927	610,293	13.45
		2008/09	6,614,537	1,313,645	1,219,473	9,147,655	584,042	12.27
		2009/10	7,241,419	1,534,140	1,373,461	10,149,021	657,154	13.30
51010	Preston	2005/06	4,288,249	481,717	782,515	5,552,481	336,787	13.74
		2006/07	3,394,334	417,386	487,377	4,299,097	248,589	9.54
		2007/08	4,843,193	409,127	495,062	5,747,382	313,838	11.69
		2008/09	3,826,009	505,572	752,240	5,083,821	310,244	11.27
		2009/10	3,948,639	508,728	600,301	5,057,667	300,838	10.67

SSD code	SSD name	Year	All beer	All wine	All spirits	All alcohol	All pure alcohol	pcc/ESP
51015	Vasse	2005/06	4,286,815	1,469,871	925,286	6,681,972	476,061	17.04
		2006/07	4,609,592	1,204,809	1,038,667	6,853,068	463,585	16.34
		2007/08	5,468,754	824,968	556,188	6,849,910	407,722	13.74
		2008/09	5,176,074	1,390,120	843,114	7,409,308	497,317	16.03
		2009/10	4,759,258	1,634,738	974,463	7,368,459	521,702	16.18
51020	Blackwood	2005/06	1,213,283	231,718	302,382	1,747,383	115,771	9.42
		2006/07	1,218,419	224,291	239,624	1,682,334	105,647	8.66
		2007/08	1,172,152	132,114	81,587	1,385,853	75,544	6.03
		2008/09	1,667,206	351,706	278,614	2,297,526	146,393	11.44
		2009/10	1,688,533	342,070	274,763	2,305,366	146,028	11.27
51505	Pallinup	2005/06	1,549,939	169,624	296,778	2,016,341	123,418	15.44
		2006/07	1,253,409	148,293	270,096	1,671,798	101,571	13.30
		2007/08	1,581,389	145,028	207,471	1,933,888	109,005	14.12
		2008/09	1,339,734	154,029	206,791	1,700,553	100,784	12.71
		2009/10	1,817,855	165,065	317,357	2,300,277	135,329	17.04
51510	King	2005/06	3,409,659	1,138,254	930,163	5,478,076	394,550	12.26
		2006/07	3,501,588	1,009,226	987,792	5,498,606	381,011	11.79
		2007/08	5,305,570	885,786	765,778	6,957,134	426,919	12.79
		2008/09	3,967,696	1,043,498	765,391	5,776,584	385,670	11.23
		2009/10	4,468,700	1,238,968	952,517	6,660,184	452,838	12.96

SSD code	SSD name	Year	All beer	All wine	All spirits	All alcohol	All pure alcohol	pcc/ESP
52005	Hotham	2005/06	1,865,509	141,939	223,318	2,230,766	127,260	12.53
		2006/07	3,162,542	253,145	295,480	3,711,167	204,354	20.25
		2007/08	1,438,353	647,762	271,385	2,357,500	171,072	16.75
		2008/09	2,357,104	212,255	238,004	2,807,363	158,818	15.33
		2009/10	1,816,511	245,081	239,967	2,301,559	136,882	13.20
52010	Lakes	2005/06	1,227,244	68,923	198,092	1,494,259	86,521	25.36
		2006/07	768,439	51,626	105,158	925,223	50,884	15.12
		2007/08	1,330,301	49,514	94,891	1,474,706	75,465	22.41
		2008/09	585,849	51,250	160,016	797,115	49,515	14.49
		2009/10	689,036	51,574	84,144	824,754	46,479	13.67
52505	Moore	2005/06	1,903,034	213,163	391,801	2,507,998	153,934	13.90
		2006/07	1,863,514	332,467	339,238	2,535,219	155,914	14.03
		2007/08	1,825,863	116,814	222,467	2,165,144	116,127	10.14
		2008/09	2,068,567	350,771	358,480	2,777,817	171,318	14.40
		2009/10	2,244,093	398,784	373,514	3,016,392	186,517	15.29
52510	Avon	2005/06	3,478,411	530,264	669,059	4,677,734	293,611	14.39
		2006/07	2,766,474	446,972	567,541	3,780,987	231,796	11.42
		2007/08	3,322,239	293,414	309,085	3,924,738	211,009	10.14
		2008/09	2,730,065	463,487	417,785	3,611,337	219,242	10.28
		2009/10	2,944,851	488,487	465,993	3,899,330	237,308	10.92

SSD code	SSD name	Year	All beer	All wine	All spirits	All alcohol	All pure alcohol	pcc/ESP
52515	Campion	2005/06	2,121,959	171,462	323,709	2,617,130	151,969	19.30
		2006/07	1,286,476	164,111	212,274	1,662,861	96,788	12.11
		2007/08	2,236,742	113,975	153,428	2,504,145	127,827	15.97
		2008/09	1,108,822	131,652	138,534	1,379,009	79,415	9.91
		2009/10	1,147,088	127,074	149,140	1,423,301	81,818	10.15
53001	Kalgoorlie /Boulder City Part A	2005/06	5,283,787	654,274	646,879	6,584,940	386,608	17.55
		2006/07	5,478,822	651,341	970,955	7,101,118	415,038	18.50
		2007/08	7,003,119	706,377	1,219,569	8,929,065	519,521	22.52
		2008/09	5,665,201	816,165	1,021,058	7,502,423	453,949	19.29
		2009/10	5,273,317	813,916	764,443	6,851,676	411,522	17.31
53005	Lefroy	2005/06	1,343,079	37,099	69,835	1,450,013	75,418	9.29
		2006/07	571,906	85,588	137,320	794,814	50,195	5.29
		2007/08	626,624	10,452	14,214	651,290	30,854	3.21
		2008/09	801,700	85,902	169,005	1,056,607	64,041	6.66
		2009/10	626,231	15,901	217,723	859,854	53,042	5.43
53010	Johnston	2005/06	2,381,306	378,440	495,627	3,255,373	207,386	15.29
		2006/07	2,564,401	404,704	507,046	3,476,151	213,623	15.75
		2007/08	2,776,545	382,061	485,153	3,643,759	218,655	15.58
		2008/09	2,390,902	420,676	418,850	3,230,428	200,897	14.31
		2009/10	2,379,921	420,602	329,541	3,130,064	191,676	13.66

SSD code	SSD name	Year	All beer	All wine	All spirits	All alcohol	All pure alcohol	pcc/ESP
53503	Geraldton	2005/06	4,617,263	1,086,851	864,328	6,568,442	433,696	18.22
		2006/07	4,420,101	819,332	914,844	6,154,277	384,754	16.01
		2007/08	7,339,747	1,023,493	802,068	9,165,308	531,486	21.38
		2008/09	4,965,502	954,794	780,974	6,701,270	416,357	16.30
		2009/10	6,625,611	1,154,269	1,479,862	9,259,743	584,982	22.45
53505	Gascoyne	2005/06	2,509,911	428,969	489,716	3,428,596	217,794	16.78
		2006/07	2,514,026	439,439	431,294	3,384,759	206,525	16.23
		2007/08	3,004,602	266,005	254,444	3,525,051	188,999	14.69
		2008/09	2,413,646	501,072	349,442	3,264,160	203,245	15.57
		2009/10	2,807,287	568,763	416,366	3,792,416	237,189	17.98
53510	Carnegie	2005/06	1,397,438	123,963	221,776	1,743,177	102,979	22.55
		2006/07	895,929	102,775	151,488	1,150,192	68,063	13.15
		2007/08	1,365,392	49,914	133,289	1,548,595	80,128	15.52
		2008/09	742,217	56,851	108,939	908,007	51,628	9.90
		2009/10	707,574	45,020	92,855	845,449	46,903	9.02
53515	Greenough River	2005/06	2,975,188	365,517	479,245	3,819,951	231,087	19.44
		2006/07	2,099,985	304,800	364,796	2,769,580	165,172	13.00
		2007/08	3,192,533	218,305	215,176	3,626,015	188,474	14.63
		2008/09	2,189,443	329,155	264,788	2,783,387	163,550	12.53
		2009/10	2,215,179	627,041	318,786	3,161,006	206,791	15.77

SSD code	SSD name	Year	All beer	All wine	All spirits	All alcohol	All pure alcohol	pcc/ESP
54005	De Grey	2005/06	4,316,558	351,769	885,187	5,553,514	335,010	17.14
		2006/07	4,335,420	333,957	828,163	5,497,540	315,905	13.17
		2007/08	5,759,766	351,009	909,296	7,020,071	391,159	15.94
		2008/09	5,008,800	381,559	796,558	6,186,917	352,190	13.91
		2009/10	5,760,784	424,846	1,016,045	7,201,676	414,019	15.99
54010	Fortescue	2005/06	1,677,077	594,135	950,394	3,221,606	246,458	11.47
		2006/07	4,970,823	591,263	1,123,433	6,685,519	408,080	13.92
		2007/08	6,815,362	521,791	1,013,243	8,350,396	471,877	15.96
		2008/09	6,251,309	694,781	1,175,913	8,122,003	488,649	16.35
		2009/10	6,922,036	768,478	1,416,210	9,106,724	553,385	18.34
54505	Ord	2005/06	2,435,159	210,364	242,366	2,887,889	161,642	14.92
		2006/07	2,365,639	278,213	250,055	2,893,907	163,884	14.33
		2007/08	2,420,616	279,928	256,277	2,956,821	167,330	14.24
		2008/09	2,642,344	232,364	257,329	3,132,038	172,026	14.44
		2009/10	2,663,267	233,719	155,749	3,052,735	159,651	13.28
54510	Fitzroy	2005/06	5,288,575	704,337	872,040	6,864,952	417,250	18.31
		2006/07	5,144,392	676,047	821,119	6,641,558	392,782	16.40
		2007/08	6,741,933	653,520	606,178	8,001,631	436,109	17.78
		2008/09	5,425,776	966,075	850,692	7,242,543	446,391	17.87
		2009/10	6,030,754	880,746	730,454	7,641,954	450,889	17.64

SSD code	SSD name	Year	All beer	All wine	All spirits	All alcohol	All pure alcohol	pcc/ESP
Totals		**2005/06**	**187,684,377**	**46,038,984**	**33,857,607**	**267,580,968**	**17,797,940**	**11.23**
Totals		**2006/07**	**194,787,180**	**45,483,945**	**36,927,807**	**277,198,931**	**18,006,305**	**11.10**
Totals		**2007/08**	**286,279,501**	**41,475,546**	**32,373,194**	**360,128,241**	**21,312,499**	**12.72**
Totals		**2008/09**	**212,202,279**	**55,120,724**	**37,555,353**	**304,878,355**	**20,245,103**	**11.69**
Totals		**2009/10**	**231,987,963**	**60,136,426**	**39,761,216**	**331,885,604**	**21,959,374**	**12.37**

CHANGES IN BEVERAGE SPECIFIC CONSUMPTION OVER TIME

In light of the interest in the consumption of alcopops and the introduction of the alcopops tax in 2008, graphs are presented to depict beverage choice across the five years of NASDP data. These are presented in two sets: a) beverage consumption in the three major categories: beer wine and spirits and b) beverage consumption in terms of regular or premixed spirits, and cider.

The first set of graphs (Figure 13 to 14) show that beverage consumption patterns were similar in the Northern Territory and Queensland during the three years for which data were available for both jurisdictions. In both, total beer sales peaked in 2008/09 and then fell slightly to the current year. Sales of wine and spirits, on the other hand, reached their lowest points in both jurisdictions in 2008/09 and increased slightly in 2009/10.

Figure 15 demonstrates that the pattern in Western Australia was different. Total beer sales increased markedly in 2007/08 and then decreased in the following year, although increasing again in the current year. Wine and spirits sales were at their lowest point in 2007/08 and have increased in each of the last 2 years.

The patterns of sales of premixed spirits, regular spirits and cider can be seen in the second set of graphs. Data on these sales are not available for Western Australia but are shown for the Northern Territory and Queensland in Figure 16 and Figure 17. These show that, again, the Northern Territory and Queensland had similar patterns, with sales of premixed spirits decreasing markedly in 2008/09 before a slight recovery, although not to previous levels, in the current year. Sales of regular spirits and cider[12] increased slightly, or were stable across the period.

[12] In Queensland cider sales were included in a group which included alcoholic sodas, Cider alone could not be distinguished.

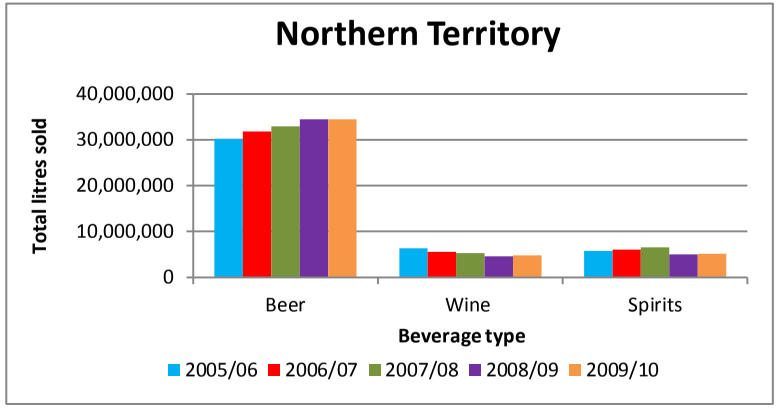

Figure 13 Total volumes of beer wine and spirits sold in the Northern Territory between 2005/06 and 2009/10

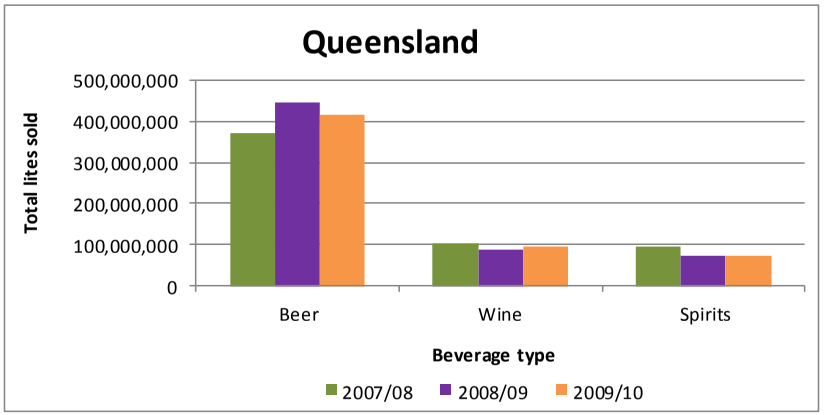

Figure 14 Total volumes of beer wine and spirits sold in Queensland between 2007/08 and 2009/10

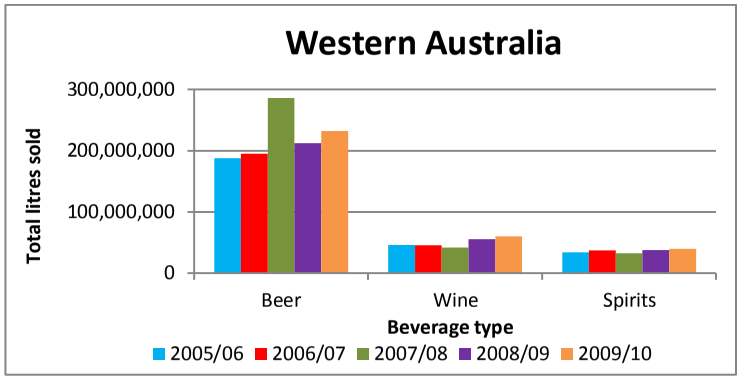

Figure 15 Total volumes of beer wine and spirits sold in Western Australia between 2005/06 and 2009/10

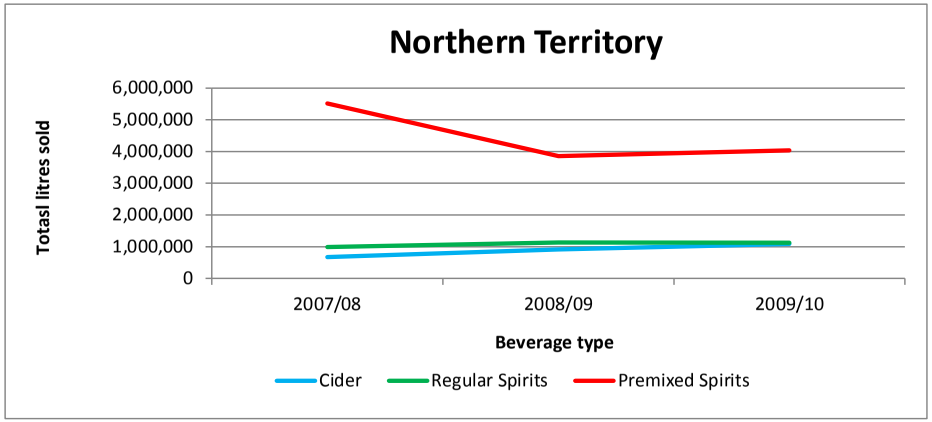

Figure 16 Total volume of cider, regular spirits and premixed spirits sold in the Northern Territory between 2007/08 and 2009/10

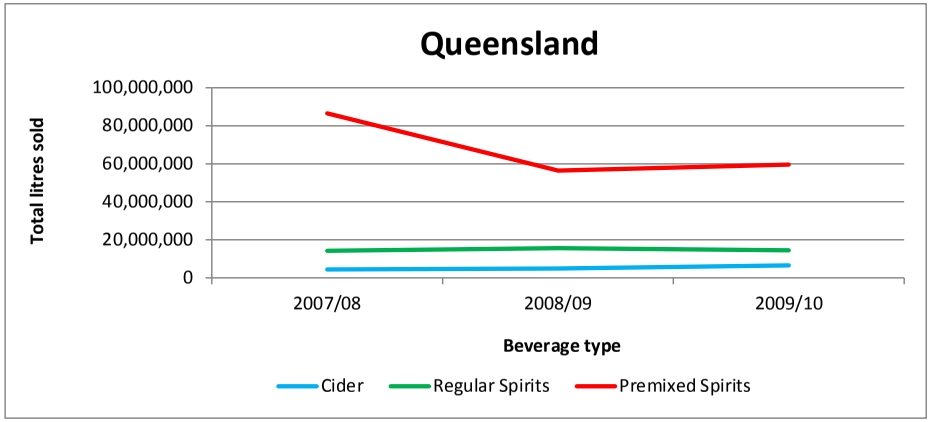

Figure 17 Total volume of cider, regular spirits and premixed spirits sold in Queensland between 2007/08 and 2009/10

DISCUSSION

SUMMARY OF REGIONAL DATA

The Northern Territory

- The estimated alcohol *per capita* consumption in the Northern Territory in 2009/10 was 13.73 litres of pure alcohol per individual aged 15+, using population figures which included tourists.
- Overall, more pure alcohol was sold in 2009/10 than in the preceding years other than 2007/08. This appears to be associated with increased population, as *per capita* consumption across the period reduced. Pure alcohol sales fell by 34% over the 5 year period in Nhulunbuy.
- Between 2008/09 and 2009/10 sales of most beverage types across the Northern Territory were relatively stable. Cider sales were the exception with an increase of 15% from the previous year. Spirit sales rose slightly in 2009/10, against a background of an 11% decrease over the 5 year period. Further analysis revealed that sales of standard spirits decreased by approximately 1%, and sales of pre-mixed spirits (RTDs) increased by approximately 4% between 2008/09 and 2009/10.

Queensland

- The overall estimated alcohol *per capita* consumption for Queensland for 2009/10 (by ESP) was 11.03 litres of pure alcohol per individual aged 15+. Queensland pcc/ESP was relatively stable with 11.34 in 2008/09 and 10.98 in 2007/08. Using comparable estimates, Queensland's alcohol consumption in 2009/10 was lower than that of Western Australia.
- High alcohol consumption (pcc/ESP >15 litres of pure alcohol) was found in Inner Brisbane, Gold Coast East and several coastal cities: Rockhampton, Mackay, Townsville City A, and Cairns. Low alcohol consumption (pcc/ESP < 8 litres of pure alcohol) was found in some parts of Brisbane and the Sunshine Coast, Somerset, and Townsville City B. These findings are similar to those in 2008/09 where it was posited that the inner Brisbane area had particularly high alcohol consumption because of a combination of relatively low resident population, its status as an entertainment area and alcohol sales to

city workers, and that the coastal cities with high alcohol consumption had relatively high levels of tourism.

- Across the state, sales of pure alcohol were increased in 2009/10 compared to the previous year, and the largest amounts of alcohol were generally sold on the eastern seaboard, particularly in the South East, although these did not necessarily translate into high *per capita* consumption because of large populations.
- Queensland beer sales decreased by approximately 6% from the previous year, while sales of wine, spirits and 'other' beverages (which include cider and alcoholic sodas) increased by 8%, 3% and 33% respectively. Further analysis revealed that sales of standard spirits decreased by approximately 7%, and sales of pre-mixed spirits (RTDs) increased by approximately 5% between 2008/09 and 2009/10.

Western Australia

- The overall estimated alcohol *per capita* consumption for Western Australia (by ESP) for 2009/10 was 12.37 litres of pure alcohol per individual aged 15+. Western Australia had its highest pcc/ESP in 2009/10 across the five year period other than in 2007/08 where pcc/ESP was 12.72.
- Compared to 2008/09, pcc/ESP decreased by at least 2 litres in Hotham and Kalgoorlie/Boulder City A, and increased by at least 2 litres in Central Metropolitan, Pallinup, Geraldton, Gascoyne, Greenough River, De Grey, and Fortescue.
- In 2009/10, pcc/ESP more than 3 litres above the state average was found in Central Metropolitan, Vasse, Pallinup, Kalgoorlie/Boulder City A, Geraldton, Gascoyne, De Grey, Fortescue and Fitzroy. Many of these are regions with highly mobile workforces and/or regions of high tourism. The same factors that appear to have influenced high alcohol consumption in Inner Brisbane—a combination of relatively low resident population, status as an entertainment area and alcohol sales to city workers—are likely to have influenced alcohol consumption in Western Australia's Central Metropolitan region.
- Between 2008/09 and 2009/10, Western Australian pure alcohol sales increased by 8.5%. Beer and wine sales increased by 8% and spirits sales increased by 5.5%. It should be noted that Western Australian data do not separate regular and pre-mixed spirits, and do not include sales of cider and other alcoholic beverages.

- Regionally, there was a trend for sales of at least two of the three major beverage categories to increase between 2008/09 and 2009/10.

CHANGES IN BEVERAGE SPECIFIC CONSUMPTION OVER TIME

Long-term trends in the market share of major beverage types can be most clearly seen against a background of overall alcohol consumption. In the Northern Territory the clear trend has been decreasing alcohol consumption over five years. In Queensland there appears to be a less marked decreasing trend, but with only three years of data to support it. In Western Australia consumption increased in 2007/08 and there has been no clear trend in the succeeding years.

Patterns in market share also fall into two distinct types. In the Northern Territory and Queensland, beer on the one hand, and wine and spirits on the other, moved in opposite directions reaching a peak or a nadir in 2008/09 from which there has been slight movement. The pattern in Western Australia was different showing increases in all three major beverage types in the last 2 to 3 years.

These patterns appear to reflect the changing circumstances of the jurisdictions. Western Australia has been in boom conditions for at least the last three years with an increasing and highly mobile occupational population (Australian Bureau of Statistics 2011). In the NASDP we have attempted to take that population growth into account with our use of ESP and back projection of pcc/ESP to all data years. It would not be too much of a stretch to suggest that Western Australia's rising alcohol consumption and patterns in beverage choice are related to economic growth conditions among certain sub-populations and its impact of increasing affordability of alcohol.

Alcohol consumption and beverage choice in the Northern Territory and Queensland on the other hand may reflect growing community concern with alcohol consumption and state and commonwealth government efforts over the last few years to address it (Queensland Government (Queensland Health) 2011; Department of Health NT Government n.d.). Overall alcohol consumption is decreasing and beverage choice is moving from beverages with higher alcohol content such as wine and spirits towards those such as beer which have lower alcohol content.

In 2011, we noted that the NASDP data from the Northern Territory and Queensland appeared to endorse the finding that the alcopops tax had had a beneficial effect on the consumption of RTDs, which was only partly compensated for by increases in sales of regular spirits and that there was, in these two jurisdictions, a concomitant rise in the sale of cider, which may also have been a response to the alcopops tax.

In 2012 we have found that in both jurisdictions there was an increase in sales of cider between 2007/08 and 2009/10, and sales of regular spirits increased in 2008/09, (possibly as a response to the alcopops tax), and then fell again slightly in the current year, although not to pre-tax levels. However, the major trend was the fall in sales of premixed spirits in 2008/09 which although increasing somewhat in the current year remain substantially lower than their pre-tax levels.

It would be premature to suggest that these data demonstrate a response to the alcopops tax which has been followed by some accommodation to it. Further years of data will be needed before stability emerges and trends can be more clearly shown. It is worth noting nevertheless that these results concur with data from two other independent sources including national estimates of per capita consumption based in excise tax/customs data (Australian Bureau of Statistics 2012) and estimates based on industry data (Chikritzhs, Dietze et al. 2009), both of which indicate substantial falls in pre-mixed consumption immediately following the introduction of the alcopops tax.

FUTURE DEVELOPMENTS IN THE NASDP

We anticipate that in the near future more jurisdictions will commence alcohol sales data collections and will make their data available to the NASDP. The following summarises information presented to the most recent AC teleconference.

- The ACT has introduced new liquor laws (Liquor Act and Liquor Regulation 2010) which require off licensees to provide to the ACT Chief Health Officer information about the volume in litres of various liquor sold by wholesale for the previous financial year.
- In Victoria, the Auditor-General's recommendation to pilot the collection and analysis of liquor sales data from wholesalers to retailers is currently being considered by the Department of Justice.

- In South Australia systems are being set up in preparation for the commencement of alcohol sales data collection.
- In Tasmania the Interagency Working Group On Drugs has requested a paper on the collection of alcohol sales data.

The NASDP team look forward to welcoming jurisdictions which have new sales data collection and we trust that this report and the reports that preceded it will demonstrate the policy and practice value of alcohol sales data analysis.

We also wish to thank the relevant agencies from the Northern Territory, Queensland and Western Australia.

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APPENDIX I PROGRESS REPORT TO FUNDERS MARCH 2012

BACKGROUND TO THE NATIONAL ALCOHOL SALES DATA PROJECT

In response to a 2007 Ministerial Council on Drug Strategy resolution highlighting the absence of systematic and standardised Australia-wide alcohol sales data collection, the Commonwealth Government, via the Intergovernmental Committee on Drug Strategy (IGCD), funded the Drug and Alcohol Office of WA (DAO) and the National Drug Research Institute (NDRI) at Curtin University to develop the National Alcohol Sales Data Project (NASDP).

The NASDP is now in its third year of funding[13] with contracts signed between the Australian Government Department of Health and Ageing (DoHA) and DAO; and between DAO and NDRI.

THE NASDP ADVISORY COMMITTEE (AC)

In the NASDP Stage 1, an Advisory Committee (AC) consisting of senior representatives of DoHA and Liquor Licensing, Health and Police in every Australian jurisdiction was established. The AC aims to:

- provide guidance and advice and oversee the use of sales data;
- communicate representatives' interests and requirements regarding sales data;
- provide comment and suggestions on report draft annual reports; and
- support the aims and ongoing functions of the project.

Meetings provide an opportunity for AC representatives to discuss any data collection issues that may arise and to provide feedback on draft reports. Meetings are held via group teleconference twice a year. All jurisdictions are represented, although not necessarily with representatives from all three areas.

The AC provided support and assistance in the NASDP Stage 2 ("the NASDP 2") with all jurisdictions providing representatives. It will be reconvened for the NASDP 3.

[13] Referred to hereafter as "the NASDP 3"

PROJECT ACTIVITY SINCE COMPLETION OF THE NASDP 2

The final NASDP 2 report was tabled at the February IGCD Standing Committee on Alcohol for discussion at the next meeting. One important issue canvassed by that report was the results of the calculation of *per capita* alcohol consumption using different population estimates. Three different population estimates were used in the NASDP 2: Estimated Resident Population (ERP), Estimated Enumerated Population (EEP) and Estimated Service Population (ESP). In general it was recommended to continue presenting *per capita* consumption calculated with both ERP and ESP.

These issues were also brought to the attention of Standing Committee members. Further to that, a brief summary has been prepared for circulation and discussion at the next meeting.

ASSOCIATIONS BETWEEN THE NASDP AND OTHER RESEARCH

The Queensland Research and Statistics Unit in the Department of Liquor, Gaming, Racing and Fair Trading have agreed to make alcohol sales data available to NDRI for a 2.5 year *Australian National Preventative Health Agency* (ANPHA)-funded project to examine the relationship between alcohol outlet density, alcohol sales and hospitalisations.

REVIEW OF ALCOHOL CONVERSION FACTORS IN THE NASDP 3

A comprehensive review of alcohol conversion factors was undertaken for the NASDP 2, following a review of the average alcohol content of wine by the Australian Bureau of Statistics which found it to have increased from 10.8% to 12.7%. In the NASDP 3 these conversion factors will be considered against the latest evidence and adjustments will be made where necessary.

DATA ANALYSIS IN THE NASDP 3

We are in the process of obtaining 2009 – 2010 alcohol sales data from Queensland, the Northern Territory and Western Australia.

FUTURE NASDP ACTIVITIES IN 2012

- The Advisory Committee will be reconvened and an interim teleconference will be held to discuss the NASDP 3 and, specifically, responses by the IGCD Standing Committee on Alcohol to the issue of population estimates for calculation of *per capita* alcohol consumption.

- Alcohol conversion factors used in the NASDP 2 will be reviewed and updated where necessary.
- *Per capita* consumption (pcc) analysis of data sets, with geophysical mapping of regional pcc, will be undertaken.
- The annual report on activities and data outcomes will be prepared, and a draft circulated to all NASDP participants for comment.
- A teleconference will be held with the AC to discuss the draft report and the NASDP 3 progress.
- The annual report will be completed and distributed.

APPENDIX II ESTIMATES OF QUEENSLAND AND WESTERN AUSTRALIAN *PER CAPITA* CONSUMPTION BY ERP

As reported above, in the main body of the current report we have presented pcc/ESP for Queensland and Western Australia for all available years. This has necessitated revising ERP from which ESP is calculated. In Stage 2 we used ABS ERP figures and extrapolated from them to calculate ESP for 2008/09. In Stage 3 ERP had to be revised to provide comparability from 2005/06 to 2009/10 because ABS ERPs are strictly not comparable across years. This is because no allowance is made by the ABS for boundary changes between years, although these are noted in accompanying ABS documentation (Australian Bureau of Statistics 2009). The revised pcc/ESPs are minimally different from those presented in Stage 2, as can be seen in tables in the main body of the report. The slight differences to ERP and hence pcc/ERP are reflected in the tables presented below.

In this Appendix we have presented ERP and pcc/ERP data in two tables for each of Queensland and Western Australia. In the first table pcc/ERP for the current year is presented twice: once with ABS ERP and once with NASDP calculated ERP. Pcc/ESP is also presented. This allows a direct comparison of ESP with both ERP calculations upon the 2010 boundaries.

In the second table for each state, have shown all pcc/ERP data presented in previous reports (all based on ABS ERP) extended to include the current year. This will permit direct comparability with previous data although readers are reminded that the ABS revise their ERP figures from year to year so that some further slight alteration from previous data may be apparent.

QUEENSLAND

Table 8 shows Queensland ERP and pcc/ERP calculated in two ways: by ABS ERP (ERP1) and NASDP-revised ERP (ERP2) together with pcc/ESP for the current year.

Table 8 Estimated *per capita* consumption (litres of absolute alcohol), Queensland 2009/10, by two different ERP, and ESP estimates.

SSD code	SSD name	ERP1*	ERP2**	pcc/ERP1	pcc/ERP2	pcc/ESP
30501	Inner Brisbane	87,709	87,588	24.10	24.13	21.87
30503	NW Inner Brisbane	163,602	163,424	10.00	10.02	10.34
30507	NW Outer Brisbane	281,246	280,951	7.64	7.65	7.99
30509	SE Inner Brisbane	137,790	137,646	6.86	6.87	7.17
30511	SE Outer Brisbane	209,259	209,035	7.18	7.19	7.45
30520	Caboolture	122,178	122,046	10.04	10.05	10.41
30525	Ipswich City	128,079	129,059	7.81	7.75	8.05
30530	Logan City	217,249	233,540	9.67	8.99	9.41
30540	Pine Rivers	129,685	129,547	7.68	7.69	8.03
30545	Redcliffe	47,370	47,310	8.82	8.83	9.14
30550	Redland City	114,541	114,408	9.55	9.57	10.08
30710	Gold Coast East	175,936	175,706	16.70	16.72	16.07
30715/3070	Gold Coast West/SD Bal***	258,226	252,117	9.53	9.76	10.51
30905	Sunshine Coast	205,399	205,145	13.70	13.72	14.05
30910	Sunshine Coast SD Bal	63,788	63,711	6.33	6.34	6.82
31205	Somerset	17,919	17,902	5.89	5.89	6.38
31210	Lower West Moreton	59,169	47,321	6.95	8.69	9.35
31505	Bundaberg	55,357	55,289	10.85	10.86	11.40
31507	Hervey Bay	49,567	49,506	10.79	10.81	10.98
31510	Wide Bay-Burnett SD Bal	130,084	134,885	9.74	9.39	9.90
32001	Toowoomba	103,770	103,666	9.22	9.23	10.11
32005	Darling Downs SD Bal	86,671	87,577	8.33	8.24	8.68
32505	South West	20,332	20,319	12.30	12.31	11.81
33005	Rockhampton	61,331	61,267	16.38	16.39	17.32
33010	Gladstone	39,087	39,042	10.40	10.41	10.89
33015	Fitzroy SD Bal	73,385	68,154	8.34	8.99	8.73
33505	Central West	9,955	9,170	8.91	9.67	8.38
34005	Mackay	67,793	67,719	14.07	14.08	15.32
34010	Mackay SD Bal	71,907	71,822	15.50	15.52	13.71
34505	Townsville City A	87,115	87,024	16.32	16.34	16.78
34510	Townsville City B	49,581	49,526	6.68	6.69	7.39
34515	Northern SD Bal	46,488	46,441	9.07	9.08	9.20
35005	Cairns	118,399	118,276	18.05	18.07	17.43
35010	Far North SD Bal	96,880	96,798	12.13	12.14	11.73
35505	North West	25,461	25,438	17.49	17.50	14.83
Queensland total		**3,612,308**	**3,608,375**	**10.73**	**10.74**	11.03

*ERP for persons aged 15+. ABS 2010
**ERP for persons aged 15+ . Calculated by the NASDP in the process of developing ESP.
*** Gold Coast SD Bal has been amalgamated with Gold Coast West because it is a very tiny SSD and its boundaries have changed considerably over time. It was confidentialised in Stage 2.

Table 8 shows that the two different ERPS made little difference to the estimation of *per capita* consumption in almost all SSDs. The biggest difference was in Lower West Moreton where there was a 20% higher estimation in consumption calculated with ERP2.

Table 9 shows all previously presented ERP data extended to include 2009/10.

Table 9 Volumes of alcohol, pure alcohol and estimated *per capita* consumption (litres of absolute alcohol) by ERP in SSDs, Queensland 2007/08 to 2009/10

SSD code	SSD name	Year	All alcohol	All pure alcohol	pcc/ERP
30501	Inner Brisbane	2007/08	30,746,262	2,290,449	26.93
		2008/09	30,815,809	2,189,956	25.23
		2009/10	29,352,565	2,113,694	24.10
30503	Northwest Inner Brisbane	2007/08	18,647,079	1,388,824	8.77
		2008/09	19,633,170	1,475,838	9.15
		2009/10	21,729,304	1,636,725	10.00
30507	Northwest Outer Brisbane	2007/08	31,131,789	2,140,284	7.94
		2008/09	35,148,882	2,150,884	7.78
		2009/10	31,465,658	2,149,493	7.64
30509	Southeast Inner Brisbane	2007/08	12,925,447	907,922	6.81
		2008/09	11,946,516	822,900	6.05
		2009/10	13,680,065	945,726	6.86
30511	Southeast Outer Brisbane	2007/08	21,479,902	1,655,400	8.28
		2008/09	22,746,233	1,513,496	7.35
		2009/10	22,572,186	1,502,973	7.18
30520	Caboolture	2007/08	17,266,991	1,084,755	9.56
		2008/09	22,361,099	1,233,937	10.44
		2009/10	18,806,050	1,226,786	10.04
30525	Ipswich City	2007/08	16,411,297	1,024,720	8.71
		2008/09	15,501,010	943,556	7.62
		2009/10	15,633,738	999,812	7.81
30530	Logan City	2007/08	28,908,916	1,882,451	9.10
		2008/09	28,081,204	1,796,702	8.44
		2009/10	32,286,976	2,100,507	9.67
30540	Pine Rivers	2007/08	14,328,971	990,877	8.26
		2008/09	15,205,748	975,444	7.78
		2009/10	14,425,153	995,750	7.68

SSD code	SSD name	Year	All alcohol	All pure alcohol	pcc/ERP
30545	Redcliffe	2007/08	6,134,827	425,363	9.40
		2008/09	5,649,801	383,560	8.26
		2009/10	5,760,932	417,944	8.82
30550	Redland City	2007/08	15,348,313	1,086,720	9.94
		2008/09	16,787,360	1,100,694	9.78
		2009/10	16,205,807	1,094,372	9.55
30710	Gold Coast East	2007/08	39,077,814	2,904,879	17.24
		2008/09	37,395,410	2,711,945	15.72
		2009/10	41,200,981	2,937,896	16.70
30715	Gold Coast West	2007/08	34,253,845	2,473,181	10.46
		2008/09	30,968,162	2,186,896	8.86
30720	Gold Coast SD Bal	2007/08	CONFIDENTIALISED		
		2008/09	CONFIDENTIALISED		
30715/30720	Gold Coast West/SD Bal	2009/10	35,451,206	2,460,448	9.53
30905	Sunshine Coast	2007/08	38,759,134	2,881,894	14.85
		2008/09	39,430,548	2,760,356	13.77
		2009/10	40,127,114	2,813,833	13.70
30910	Sunshine Coast SD Bal	2007/08	7,163,497	476,084	7.97
		2008/09	7,612,690	466,084	7.49
		2009/10	6,156,478	403,686	6.33
31205	Upper West Moreton	2007/08	2,122,261	119,364	7.28
	Somerset	2008/09	2,135,649	114,698	6.67
		2009/10	1,813,625	105,497	5.89
31210	Lower West Moreton	2007/08	6,548,342	397,181	7.19
		2008/09	6,802,034	389,328	6.76
		2009/10	6,591,228	411,382	6.95
31505	Bundaberg	2007/08	7,996,377	497,618	9.42
		2008/09	10,486,857	603,713	11.13
		2009/10	8,624,606	600,450	10.85
31507	Hervey Bay	2007/08	CONFIDENTIALISED		
		2008/09	8,571,035	536,387	11.18
		2009/10	8,010,141	535,067	10.79

SSD code	SSD name	Year	All alcohol	All pure alcohol	pcc/ERP
31510	Wide Bay-Burnett SD Bal	2007/08	21,590,919	1,283,418	10.39
		2008/09	25,333,511	1,352,012	10.60
		2009/10	20,561,151	1,267,228	9.74
32001	Toowoomba	2007/08	13,727,191	944,630	9.56
		2008/09	13,798,226	916,672	9.03
		2009/10	14,838,097	957,058	9.22
32005	Darling Downs SD Bal	2007/08	13,709,935	791,045	9.51
		2008/09	17,579,678	879,408	10.33
		2009/10	12,085,721	722,005	8.33
32505	South West	2007/08	5,240,379	257,687	12.85
		2008/09	5,235,019	258,576	12.81
		2009/10	4,618,597	250,037	12.30
33005	Rockhampton	2007/08	15,633,330	881,987	14.83
		2008/09	17,296,125	961,900	15.87
		2009/10	16,935,351	1,004,391	16.38
33010	Gladstone	2007/08	6,662,798	376,995	10.15
		2008/09	9,911,301	508,443	13.20
		2009/10	6,811,041	406,518	10.40
33015	Fitzroy SD Bal	2007/08	12,009,128	699,269	9.97
		2008/09	13,022,753	709,252	9.81
		2009/10	10,342,158	612,398	8.34
33505	Central West	2007/08	2,181,522	112,198	11.46
		2008/09	1,857,806	88,153	8.94
		2009/10	1,616,146	88,694	8.91
34005	Mackay	2007/08	15,776,745	913,507	14.26
		2008/09	13,054,721	818,081	12.37
		2009/10	17,179,522	953,765	14.07
34010	Mackay SD Bal	2007/08	18,195,790	1,074,703	15.69
		2008/09	20,948,731	1,167,858	16.55
		2009/10	17,926,476	1,114,816	15.50
34505	Townsville City Part A	2007/08	21,779,856	1,331,680	16.01
		2008/09	30,955,939	1,567,855	18.36
		2009/10	23,651,451	1,421,986	16.32
34510	Townsville City Part B	2007/08	3,773,186	207,167	4.56
		2008/09	4,497,654	262,965	5.49
		2009/10	5,990,980	331,164	6.68

SSD code	SSD name	Year	All alcohol	All pure alcohol	pcc/ERP
34515	Northern SD Bal	2007/08	8,297,125	444,091	9.82
		2008/09	7,871,323	403,883	8.77
		2009/10	7,343,891	421,856	9.07
35005	Cairns	2007/08	27,159,238	1,731,593	15.54
		2008/09	32,279,548	1,994,343	17.28
		2009/10	35,067,960	2,136,730	18.05
35010	Far North SD Bal	2007/08	19,844,639	1,188,965	12.75
		2008/09	18,929,725	1,106,733	11.59
		2009/10	19,185,354	1,174,709	12.13
35505	North West	2007/08	8,122,582	439,398	17.44
		2008/09	7,526,868	420,306	16.58
		2009/10	7,880,273	445,283	17.49
Total	**Queensland**	**2007/08**	**572,712,362**	**37,955,769**	**11.07**
Total	**Queensland**	**2008/09**	**608,015,309**	**37,817,375**	**10.69**
Total	**Queensland**	**2009/10**	**591,927,984**	**38,760,678**	**10.73**

WESTERN AUSTRALIA

Table 10 shows Western Australia ERP and pcc/ERP calculated in two ways: by ABS ERP (ERP1) and NASDP-revised ERP (ERP2) together with pcc/ESP for the current year.

Table 10 Estimated *per capita* consumption (litres of absolute alcohol), Western Australia 2009/10, by two different ERP, and ESP estimates.

SSD code	SSD name	ERP1*	ERP2**	pcc/ERP1	pcc/ERP2	pcc/ESP
50505	Central Metropolitan	124,920	124,233	20.80	20.91	21.33
50510	East Metropolitan	228,526	228,593	9.17	9.17	9.82
50515	North Metropolitan	415,444	416,287	9.83	9.81	10.56
50520	South West Metropolitan	291,800	292,127	11.17	11.16	12.01
50525	South East Metropolitan	315,909	315,738	9.09	9.09	9.64
51001	Mandurah	70,403	70,419	11.92	11.91	13.28
51003	Bunbury	54,206	54,220	12.12	12.12	13.30
51010	Preston	29,571	29,581	10.17	10.17	10.67
51015	Vasse	35,046	35,058	14.89	14.88	16.18
51020	Blackwood	14,109	14,116	10.35	10.34	11.27
51505	Pallinup	9,005	9,002	15.03	15.03	17.04
51510	King	38,530	38,540	11.75	11.75	12.96
52005	Hotham	11,378	11,394	12.03	12.01	13.20
52010	Lakes	3,636	3,637	12.78	12.78	13.67
52505	Moore	13,007	13,012	14.34	14.33	15.29
52510	Avon	23,899	23,906	9.93	9.93	10.92
52515	Campion	8,137	8,149	10.06	10.04	10.15
53001	Kalgoor./Bould. City Part A	24,574	24,587	16.75	16.74	17.31
53005	Lefroy	6,656	6,658	7.97	7.97	5.43
53010	Johnston	14,101	14,102	13.59	13.59	13.66
53503	Geraldton	28,476	28,484	20.54	20.54	22.45
53505	Gascoyne	7,875	7,883	30.12	30.09	17.98
53510	Carnegie	2,827	2,827	16.59	16.59	9.02
53515	Greenough River	11,964	11,963	17.28	17.29	15.77
54005	De Grey	17,394	17,399	23.80	23.80	15.99
54010	Fortescue	19,279	19,290	28.70	28.69	18.34
54505	Ord	8,420	8,582	18.96	18.60	13.28
54510	Fitzroy	18,600	18,448	24.24	24.44	17.64
Western Australia totals		**1,847,692**	**1,848,235**	**11.88**	**11.88**	**12.37**

*ERP for persons aged 15+. ABS 2010
**ERP for persons aged 15+ . Calculated by the NASDP in the process of developing ESP.

Table 10 shows that the two different ERPS made little difference to the estimation of *per capita* consumption in almost all SSDs, and that the estimates for the state were almost identical.

Table 11 shows all previously presented ERP data extended to include 2009/10.

Table 11 Volumes of alcohol, pure alcohol and estimated *per capita* consumption (litres of absolute alcohol) by ERP in SSDs, Western Australia, 2005/06 to 2009/10

SSD code	SSD name	Year	All alcohol	All pure alcohol	pcc/ERP
50505	Central Metropolitan	2005/06	26,543,092	1,894,608	16.72
		2006/07	27,514,348	1,897,047	16.35
		2007/08	35,989,490	2,134,699	17.95
		2008/09	26,915,599	1,870,402	15.19
		2009/10	38,106,830	2,598,033	20.80
50510	East Metropolitan	2005/06	26,583,094	1,758,871	8.53
		2006/07	27,385,782	1,730,017	8.22
		2007/08	39,646,958	2,380,088	10.99
		2008/09	30,171,958	2,019,055	9.02
		2009/10	31,723,805	2,095,112	9.17
50515	North Metropolitan	2005/06	42,320,937	2,856,734	7.73
		2006/07	45,067,798	3,026,932	7.98
		2007/08	72,710,771	4,201,931	10.73
		2008/09	56,383,759	3,937,121	9.70
		2009/10	58,977,420	4,084,360	9.83
50520	South West Metropolitan	2005/06	35,712,909	2,468,477	9.54
		2006/07	38,585,848	2,568,979	9.68
		2007/08	53,809,492	3,354,285	12.26
		2008/09	43,809,332	3,045,848	10.73
		2009/10	46,959,965	3,258,725	11.17
50525	South East Metropolitan	2005/06	37,295,382	2,545,291	9.04
		2006/07	39,876,461	2,697,521	9.39
		2007/08	42,004,759	2,575,784	8.68
		2008/09	41,812,779	2,819,128	9.14
		2009/10	43,261,761	2,871,242	9.09
51001	Mandurah	2005/06	10,243,234	658,586	11.40
		2006/07	10,462,456	660,975	10.88
		2007/08	13,250,442	796,299	12.38
		2008/09	12,867,056	837,867	12.32
		2009/10	12,646,215	838,957	11.92

SSD code	SSD name	Year	All alcohol	All pure alcohol	pcc/ERP
51003	Bunbury	2005/06	8,499,727	540,164	11.88
		2006/07	9,136,463	600,674	12.58
		2007/08	9,997,927	610,293	12.13
		2008/09	9,147,655	584,042	11.14
		2009/10	10,149,021	657,154	12.12
51010	Preston	2005/06	5,552,481	336,787	12.50
		2006/07	4,299,097	248,589	9.09
		2007/08	5,747,382	313,838	11.28
		2008/09	5,083,821	310,244	10.73
		2009/10	5,057,667	300,838	10.17
51015	Vasse	2005/06	6,681,972	476,061	16.09
		2006/07	6,853,068	463,585	14.92
		2007/08	6,849,910	407,722	12.59
		2008/09	7,409,308	497,317	14.69
		2009/10	7,368,459	521,702	14.89
51020	Blackwood	2005/06	1,747,383	115,771	8.89
		2006/07	1,682,334	105,647	7.93
		2007/08	1,385,853	75,544	5.54
		2008/09	2,297,526	146,393	10.49
		2009/10	2,305,366	146,028	10.35
51505	Pallinup	2005/06	2,016,341	123,418	13.99
		2006/07	1,671,798	101,571	11.72
		2007/08	1,933,888	109,005	12.46
		2008/09	1,700,553	100,784	11.21
		2009/10	2,300,277	135,329	15.03
51510	King	2005/06	5,478,076	394,550	11.32
		2006/07	5,498,606	381,011	10.64
		2007/08	6,957,134	426,919	11.58
		2008/09	5,776,584	385,670	10.16
		2009/10	6,660,184	452,838	11.75
52005	Hotham	2005/06	2,230,766	127,260	11.58
		2006/07	3,711,167	204,354	18.45
		2007/08	2,357,500	171,072	15.27
		2008/09	2,807,363	158,818	13.95
		2009/10	2,301,559	136,882	12.03

SSD code	SSD name	Year	All alcohol	All pure alcohol	pcc/ERP
52010	Lakes	2005/06	1,494,259	86,521	23.54
		2006/07	925,223	50,884	14.19
		2007/08	1,474,706	75,465	21.01
		2008/09	797,115	49,515	13.55
		2009/10	824,754	46,479	12.78
52505	Moore	2005/06	2,507,998	153,934	13.20
		2006/07	2,535,219	155,914	13.10
		2007/08	2,165,144	116,127	9.49
		2008/09	2,777,817	171,318	13.48
		2009/10	3,016,392	186,517	14.34
52510	Avon	2005/06	4,677,734	293,611	13.31
		2006/07	3,780,987	231,796	10.35
		2007/08	3,924,738	211,009	9.21
		2008/09	3,611,337	219,242	9.33
		2009/10	3,899,330	237,308	9.33
52515	Campion	2005/06	2,617,130	151,969	18.99
		2006/07	1,662,861	96,788	12.03
		2007/08	2,504,145	127,827	15.86
		2008/09	1,379,009	79,415	9.81
		2009/10	1,423,301	81,818	10.06
53001	Kalgoorlie/Boulder City Part A	2005/06	6,584,940	386,608	16.97
		2006/07	7,101,118	415,038	17.92
		2007/08	8,929,065	519,521	21.83
		2008/09	7,502,423	453,949	18.64
		2009/10	6,851,676	411,522	16.75
53005	Lefroy	2005/06	1,450,013	75,418	11.99
		2006/07	794,814	50,195	7.90
		2007/08	651,290	30,854	4.78
		2008/09	1,056,607	64,041	9.84
		2009/10	859,854	53,042	7.97
53010	Johnston	2005/06	3,255,373	207,386	15.87
		2006/07	3,476,151	213,623	15.72
		2007/08	3,643,759	218,655	15.56
		2008/09	3,230,428	200,897	14.24
		2009/10	3,130,064	191,676	13.59

SSD code	SSD name	Year	All alcohol	All pure alcohol	pcc/ERP
53503	Geraldton	2005/06	6,568,442	433,696	16.94
		2006/07	6,154,277	384,754	14.59
		2007/08	9,165,308	531,486	19.53
		2008/09	6,701,270	416,357	14.88
		2009/10	9,259,743	584,982	20.54
53505	Gascoyne	2005/06	3,428,596	217,794	29.34
		2006/07	3,384,759	206,525	27.95
		2007/08	3,525,051	188,999	25.10
		2008/09	3,264,160	203,245	26.25
		2009/10	3,792,416	237,189	30.12
53510	Carnegie	2005/06	1,743,177	102,979	38.43
		2006/07	1,150,192	68,063	24.37
		2007/08	1,548,595	80,128	28.83
		2008/09	908,007	51,628	18.16
		2009/10	845,449	46,903	16.59
53515	Greenough River	2005/06	3,819,951	231,087	20.01
		2006/07	2,769,580	165,172	14.34
		2007/08	3,626,015	188,474	16.14
		2008/09	2,783,387	163,550	13.73
		2009/10	3,161,006	206,791	17.28
54005	De Grey	2005/06	5,553,514	335,010	21.98
		2006/07	5,497,540	315,905	20.49
		2007/08	7,020,071	391,159	24.48
		2008/09	6,186,917	352,190	20.94
		2009/10	7,201,676	414,019	23.80
54010	Fortescue	2005/06	3,221,606	246,458	13.78
		2006/07	6,685,519	408,080	22.22
		2007/08	8,350,396	471,877	25.37
		2008/09	8,122,003	488,649	25.73
		2009/10	9,106,724	553,385	28.70
54505	Ord	2005/06	2,887,889	161,642	20.22
		2006/07	2,893,907	163,884	20.93
		2007/08	2,956,821	167,330	20.58
		2008/09	3,132,038	172,026	20.67
		2009/10	3,052,735	159,651	18.96

SSD code	SSD name	Year	All alcohol	All pure alcohol	pcc/ERP
54510	Fitzroy	2005/06	6,864,952	417,250	25.62
		2006/07	6,641,558	392,782	23.22
		2007/08	8,001,631	436,109	24.93
		2008/09	7,242,543	446,391	24.75
		2009/10	7,641,954	450,889	24.24
Total Western Australia		**2005/06**	**267,580,968**	**17,797,940**	**10.79**
Total Western Australia		**2006/07**	**277,198,931**	**18,006,305**	**10.66**
Total Western Australia		**2007/08**	**360,128,241**	**21,312,499**	**12.23**
Total Western Australia		**2008/09**	**304,878,355**	**20,245,103**	**11.21**
Total Western Australia		**2009/10**	**331,885,604**	**21,959,374**	**11.88**

APPENDIX III ESTIMATES OF NORTHERN TERRITORY *PER CAPITA* CONSUMPTION EXCLUDING CONSUMPTION BY TOURISTS

As we did in Stages 1 and 2, we have presented consumption estimates for the Northern Territory using ERP which is not adjusted for tourism, so that direct comparisons can be made with the similar Northern Territory estimates in previous years, and also with pcc/ERP estimates for Queensland and Western Australia (Appendix II).

Table 12 shows that the 2009/10 Northern Territory consumption figure which included tourists was 12.7% lower than the non-tourist figure. This is similar to the extent of differences found in preceding years.

Our work with ESP underlies our belief that that consumption estimates which allow for the influence of tourists are more likely to be accurate than those which do not, and we therefore recommend that readers use the Northern Territory consumption estimates given in the main text.

Table 12 Estimated *per capita* pure alcohol consumption, Northern Territory 2005/06 – 2000/10

	Total pure alcohol (litres)	ERP aged 15+	NT pcc1[1]	ERP aged 15+ and tourism	NT pcc[2]	National pcc[3]
2005/06	2,697,439	157,047	17.18	179,393	15.04	9.84
2006/07	2,699,393	161,149	16.75	187,309	14.41	10.40
2007/08	2,748,884	165,342	16.63	187,316	14.68	10.56
2008/09	2,719,986	170,263	15.98	193,562	14.05	10.40
2009/10	2,746,757	174,809	15.71	200,11	13.73	10.27

[1] Total pure alcohol divided by ERP aged 15+
[2] Total pure alcohol divided by ERP aged 15+ and estimated tourism.
[3] National estimate revised for 2006/07 and 2007/08. Does not include alcohol drinks other than beer, wine and spirits (Australian Bureau of Statistics 2012).