Department of Primary Industries

Central West Region Pilot Area
Horticulture & Viticulture Profile

FACTSHEET NO.7

This profile identifies important agricultural resources, critical features of the regions industries, their development potential and land use planning issues for horticulture and viticulture production across the central west study area as shown in Figure 1. Horticulture and viticulture include the production of fruits, grapes, nuts and vegetables.

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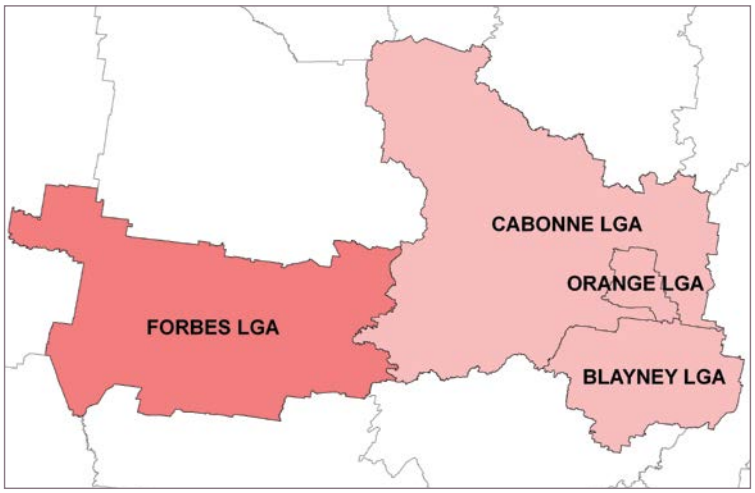

Figure 1- Central West Study Area covered by this profile

Introduction

The Department of Primary Industries is developing a consistent method for mapping important agricultural lands.

> **Maps of Important Agricultural Land highlight areas that are well suited to selected agricultural industries at a local and regional scale.**

The pilot mapping project aims to guide local councils with strategic land use planning; and support sustainable industry development.

A case study approach was adopted to identify the important agricultural lands for a range of industries within six local government areas (LGAs). They include: Orange, Cabonne, Blayney and Forbes in the central west; and Singleton and Muswellbrook in the Upper Hunter.

Those areas were chosen to cover a variety of agricultural landscapes and industries.

Included in this profile are maps that identify land important for horticulture and viticulture production in the Blayney, Cabonne and Orange LGAs as well as a horticulture map for the Forbes LGA. A map of viticulture production in that shire was not produced as it is not one of the critical industries.

Horticulture & Viticulture – Highlights

In the Orange, Cabonne and Blayney LGAs, land most suited to intensive horticulture is in the vicinity of Mt Canobolas where rainfall is moderately high, temperatures are cool and volcanic soils provide the soil fertility required for production. The exception is viticulture, which can be grown in a range of soil types and rainfall patterns. In the Forbes LGA conditions for horticulture and viticulture are met within a 5kms distance of the river, excluding those areas at risk of flooding.

Other areas that support grape production include the Belgravia area (near Molong), as well as the Eugowra - Canowindra area that also supports vegetable growing. The alluvial flats near Forbes also support citrus and pome fruit production; the latter declining in recent years. There are also other small scale operations that are scattered throughout the tablelands and include lavender, olives and hazelnut production. There are a number of areas that have the potential to support the horticulture and viticulture industry, indicating the high quality land resources found in this region. However this expansion is highly dependent on access to water.

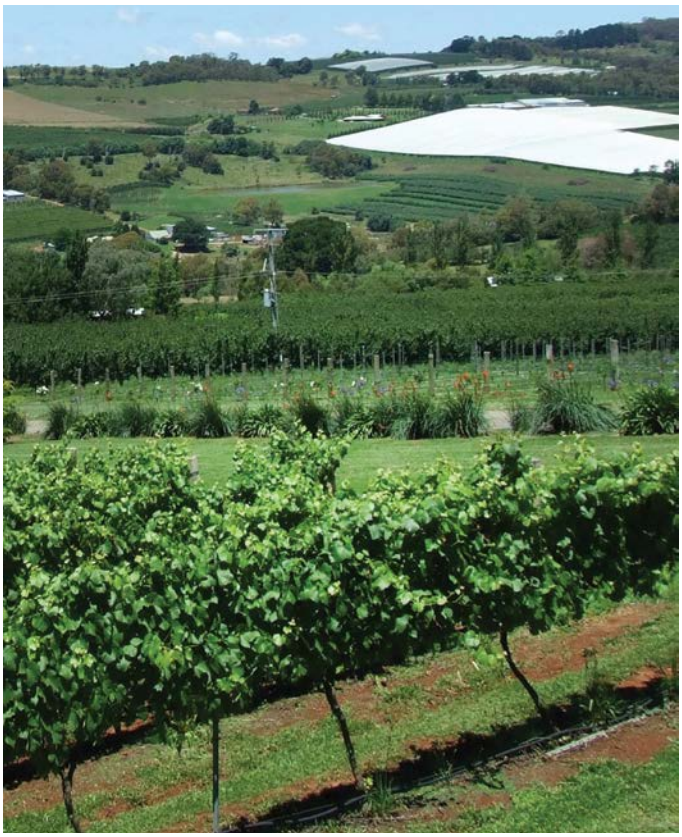

Figure 2- View of vineyards and fruit orchards in the background in Towac Valley South (Photo: Anne Mooney)

Economic Contribution

The study area is renown for its horticultural production, particularly fruit. ABS (2006) reported that 5.2% of the value of NSW fruit, nut and vegetable production is produced in the study area (Table 1).

Cabonne LGA has the highest value of fruit (non citrus) production in the study area representing 2.7% of the value of NSW production, with Orange LGA producing 2%. The highest value production fruit crops in Cabonne and Orange LGAs are cherries and apples. There is a range of other fruits grown in these areas including pears, strawberries, raspberries, plums, peaches, olives, apricots and nectarines. The area is highly suitable for fruit production because of the unique physical characteristics including the temperate climate, elevation, fertile soil, high rainfall and the availability of groundwater.

The study area also grows 2.1% of the value of NSW grapes for wine and table use, as shown in Table 2.

The horticultural & viticultural industries contribute to the economy through:

- the purchase of farm equipment and rural supplies such as seed, netting, fuel, machinery and fertiliser
- irrigation supplies and equipment
- the employment of seasonal labour for harvest, pruning and processing
- tourism for its promotions based on local food and wine events e.g. Orange wine week, Food Week, Orange Apple Festival.

There is also the potential for export, particularly for cherries that are in demand in a number of Asian countries.

Table 1-Central West Horticultural data (ABS 2006)*

Local Gov't Area	Est. value of Horticultural Production ($mill)	Est. value of Horticultural Production ($mill) as % NSW	No. of farms	Employ-ment#
Blayney	1.6m	0	10	40
Cabonne	52.7m	2.7	78	115
Forbes	10.3m	0.5	18	48
Orange	39.3m	2	78	201
Total	103.9m	5.2	184	404
NSW Total	1930m	100	5230	14289

The notes on ABS in this table are applicable to both tables in this factsheet.

* changes may have occurred since this data was collected

ABS data estimates the wholesale value of unprocessed agricultural products. These figures do not capture the flow on contribution of agriculture to other businesses in NSW. An estimate of the overall contribution of agriculture to the NSW economy, as presented in table 1, is obtained by multiplying the wholesale value of agriculture by the standard ABS multiplier for agriculture production which is 2.178.(I&I NSW, 2011)

An indication of the overall contribution of agricultural jobs to NSW employment was similarly obtained by multiplying employment in a particular industry sector by the standard ABS multiplier for agricultural employment of 1.828 (I&I NSW 2011).

ABS data combines employment for fruit and nuts.

Table 2-Central West Viticulture data (ABS 2006)*

Local Gov't Area	Est. value of Viticultural Production ($mill) #	Est. value of Viticultural Production ($mill) as % NSW	No. of farms	Employ-ment#
Blayney	2	0.4	6	0
Cabonne	5	0.9	26	221
Forbes	0	0	3	9
Orange	6	1	23	121
Total	13	2.1	191	351
NSW Total	609	100	5230	5198

The data recorded 404 and 351 people directly employed in the horticulture and viticulture industry respectively. This represents 3.9% of NSW employment in these industries (ABS, 2006).

Industry Challenges

For the horticultural industry, a key challenge is gaining consumer recognition of the produce in local and regional markets. There are also challenges with consumer trends, market demands, commodity price fluctuations and increasing input costs which impact on industry viability.

Other challenges include:

- climate change and water availability (and the impacts of mining on ground water supplies)
- conversion of specific industries to more intensive systems (to deal with the best practice industry standards ie pome fruit)
- the need for succession planning (and dealing with the expectation of being able to rezone)
- the negative visual impact of bird and hail netting
- biosecurity issues (e.g. Queensland fruit fly) and abandoned and neglected orchards and vineyards which threaten existing and new vineyard developments
- land fragmentation for lifestyle development leading to land use conflicts, such as spray drift

Figure 3- Cherry orchard at Borenore with Mt Canobolas in the distance (Photo: Anne Mooney)

Climate Change

Mt Canobolas and land in its immediate vicinity receives the highest rainfall and the lowest mean temperatures compared to the remainder of the study area. Climate change impacts on the horticulture and viticulture industry across the study area are therefore variable and will require farmers to make adjustments to meet those climate challenges.

Potential impacts on the horticultural industry includes:

- increased crop water needs
- reduced water availability from irrigation
- greater crop damage due to frosts and heat stress
- increased pest and disease activity
- increased damage from extreme weather events. (Landlearn NSW 2012)

Potential impacts on the horticultural industry includes:

- a reduction in the total number of grapes produced
- grape maturity occurring earlier in the season
- severe leaf and bunch stress (Landlearn NSW 2012)

Variable climate conditions in the future mean that the cropping calendar may change, particularly with earlier harvesting in the warmer climates in the western region of the study area. Other adaptations may include growing grape varieties that are better suited to a different climatic regime and new management practices for wine and table grapes, pome fruit and cherries.

Infrastructure requirements

The horticulture industry requires capital investment in machinery (for cultivating, pruning, harvesting, processing etc), netting and irrigation. It also requires good roads, bridges and infrastructure for access to local, regional, interstate and international markets.

Supporting Infrastructure includes over 30 cellar doors in the Orange area complimented by wine and fruit processing plants and direct market opportunities via restaurants and farmers markets. The NSW DPI Orange Agricultural Research Institute, NSW DPI Yanco Agricultural Institute and NSW DPI Bathurst Primary Industries Centre provide research facilities and extension resources for horticulture, viticulture and organic produce.

Development Prospects

The pilot area is a proven area for the production of quality fruit and provides the cooler climatic conditions to keep fruit for longer periods of time. With limited cool climate conditions throughout NSW, this region could play an important role in future fruit and viticulture production, particularly as conditions become drier and hotter with the changing climate.

Pome fruit and particularly cherries from the Orange region are very significant to NSW and Australian production. As well, the export potential for cherries is high due to demands from the growing Asian market. The cool climate of the region also provides ideal conditions for viticultural production that has state wine industry recognition. The Orange region, for instance, is recognised as a geographic wine region by the NSW Wine Industry Association.

Horticultural production in the Forbes LGA is less significant, although there is potential to expand the citrus industry further and develop the nut industry in the area. The deep bore water in the shire (30 -120 metres) gives consistent water quality compared to river water (no salts) and is very suitable for citrus needs. The Forbes LGA grows citrus for juicing purposes (220ha) that is sent to Queensland and Melbourne.

Important Horticultural and Viticultural Production Areas

Horticulture is a specialist operation with specific biophysical requirements that constrain existing and potential farm locations.

Important criteria for locating horticultural development include:

- medium to highly fertile soils, particularly of basalt or volcanic origin that have good water storage qualities. Attachment A lists geologic requirements

- adequate water from sub surface or river sources
- climate with cool temperatures for many of the horticultural crops
- slopes between 3-10%, and a land capability range of 2-4
- elevations from 550 to 1100 metres.

Those location requirements are unique to the area particularly in the Orange and Cabonne LGAs.

The location requirements for the Forbes LGA are based on the proximity to the Lachlan River for both surface and groundwater, but excluding flood prone lands. The distance to markets and processing plants is also a key location requirement in this LGA.

In relation to viticulture, there are two distinct elevations that determine the growth habits of vineyards:

- greater than or equal to 600 metres – cold season zone and
- less than 600 metres – temperate zone.

The viticultural industry covers a wide range of climate and soil types. The availability of a suitable and adequate water supply to support the industry is the main limiting factor to expansion.

The maps shown in Figures 4 and 5 illustrate areas of land that are particularly suitable for horticulture and viticulture production in the Orange, Cabonne, Blayney LGAs and horticulture in the Forbes LGA.

Land use Planning Implications

Horticulture has specific requirements which dictate where this industry can operate. Important factors include a good reliable source of water for productivity, cool conditions so that the fruit does not spoil quickly and moderate to high soil fertility. The volcanic soils on Mt Canobolas are ideal for production.

Planning can assist by ensuring that land with these specific features is retained for intensive plant agriculture. Preventing land fragmentation in and around areas highly suited to these intensive plant industries will avoid any potential land use conflicts.

Horticultural and viticultural industries create noise, dust and visual impacts (from netting) as well as chemical impacts from spray drift. To reduce their impacts on neighbours, residential development should be planned in areas that are not near to, or adjacent to, land suitable for intensive plant horticulture.

Acknowledgements

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Compiled by Mary Kovac and Wendy Goodburn and reviewed by the Resource Planning and Development Team in NSW DPI.

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References

ABS (Australian Bureau of Statistics) 2006, 7125.0- Agricultural Commodities: Small Area Data, Australia 2005-06. accessed from http://www.abs.gov.au/ausstats/abs@.nsf/Products/7125.0~2005-06+%28Reissue%29~Main+Features~New+South+Wales?OpenDocument

ABS (Australian Bureau of Statistics) 2010, Catalogue 3235.0 Population by Age and Sex, Regions of Australia, 2010, accessed from http://www.abs.gov.au/ausstats/abs@.nsf/Products/3235.0~2010~Main+Features~New+South+Wales?OpenDocument

I&I NSW (Industry & Investment NSW), 2011, Contribution of Primary Industries to NSW Economy, agricultural contribution and standard agricultural multipliers, accessed from

http://intranet.dpi.nsw.gov.au/library/statistics/industry/all-industries/key-data-2011.pdf

NSW DPI (Department of Primary Industries), 2011, Analysis of ABS 2006 Census data for agriculture, accessed from http://www.dpi.nsw.gov.au/environment/landuse-planning/agriculture/analysis-census-data

Additional Reading

Agricultural Land use planning guidelines; www.dpi.nsw.gov.au/environment/landuse-planning/agriculture

Gross margins (financials) information; http://www.dpi.nsw.gov.au/agriculture/farm-business/budgets

Hassell and Associates Pty Ltd, 2007. Minimum Lot Size Analysis for Blayney-Cabonne- Orange Rural and Industrial Land Use Strategy, Report to Councils.

Horticulture advisory information; http://www.dpi.nsw.gov.au/agriculture/horticulture

Landlearn NSW 2012 Impacts of Climate Change on Horticulture

http://www.landlearnnsw.org.au/sustainability/climate-change/agriculture/horticulture/impacts

NSW DPI 1998. Policy for sustainable agriculture in NSW, http://www.dpi.nsw.gov.au/environment/landuse-planning/agriculture/sustainable

NSW DPI 2011. Land Use Conflict Risk Assessment (LUCRA) Guide, http://www.dpi.nsw.gov.au/environment/landuse-planning/agriculture/lucra

NSW DPI 2011. Policy 0-104 Maintaining land for agricultural industries, http://www.dpi.nsw.gov.au/__data/assets/pdf_file/0008/396458/Policy-0-104-maintaining-land-agricultural-industries.pdf

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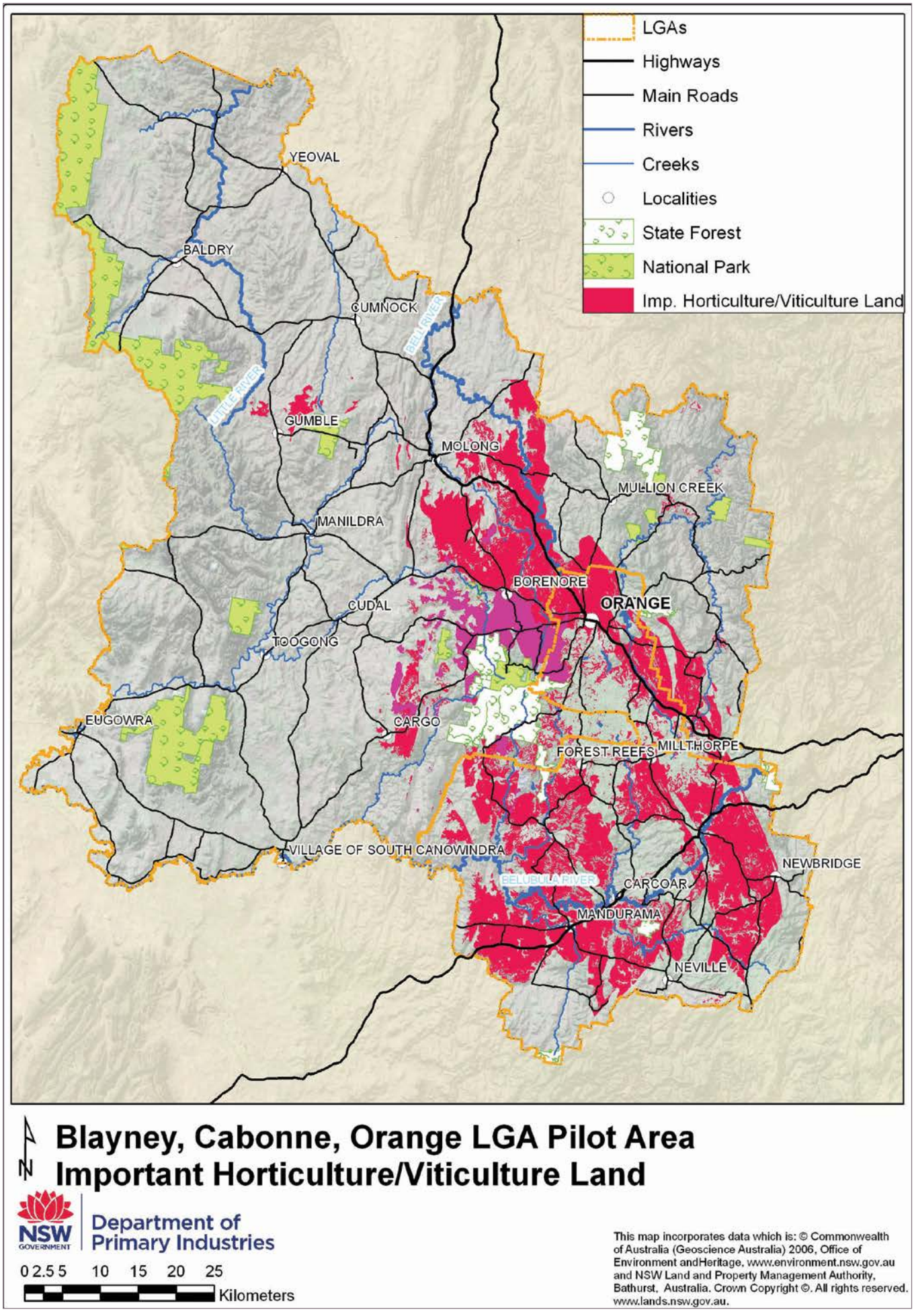

Figure 4: Land important for horticulture & viticulture in the Blayney, Cabonne and Orange LGAs

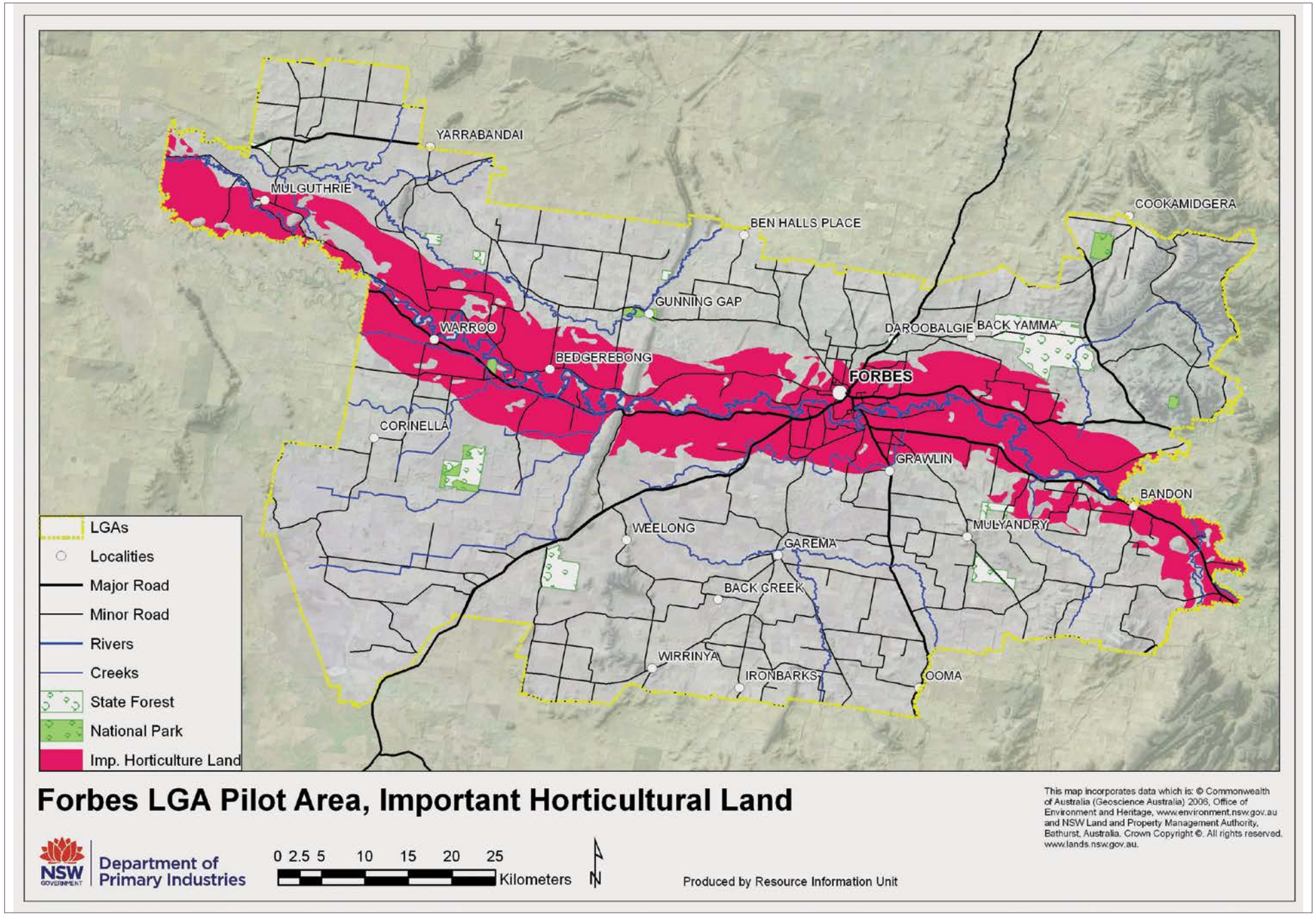

Figure 5: Land important for horticulture in the Forbes LGA