



NSW proposed Local Land Services Act

Potential Vegetation Clearing under the Equity Code – Analysis Paper

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Abbreviations

Abbreviation	Description
ALUM	Australian Land Use and Management mapping and classification
IBRA	Interim Biogeographic Regionalisation of Australia
LEP	Local Environment Plan
LGA	Local Government Area
LLS	Local Land Services
NPWS	National Parks and Wildlife Service
RAMSAR	Convention for the international treaty for the conservation and sustainable use of wetlands
SF	State Forest

1 Introduction

The NSW Government announced a new land management framework under the Local Land Services Act 2013 (LLS Act) that proposes ways NSW landholders can manage land with native vegetation and includes a number of codes of practice. This analysis paper was prepared to identify how much woody vegetation (trees, forests and woodlands) could potentially be cleared under one of these codes of practice of the proposed management framework - the "Equity Code".

This brief paper documents:

- definitions and data used for the analysis and references where they can be found
- methods used in the analysis
- results and summary of the analysis broken down by bioregions, Local Land Service (LLS) regions and Local Government areas (LGA); and
- profiles of the potential impacts for LLS regions as an appendix

2 Definitions

The key definitions guiding the analysis.

2.1 Equity code - Clearing by certification to expand an existing farming enterprise.

From NSW Government website - LLS codes of practice

<https://www.landmanagement.nsw.gov.au/simplifying-land-management/lls-codes-of-practice-overview/#equity-code>

Permitted Clearing	Clearing of unencumbered Category 2 mapped land wherever occurring
Application	<p>Cannot be applied if less than 10% of a property is mapped to Category 2.</p> <p>Cannot be applied if treatment would result in the percentage of the property mapped to Category 2 falling below 10%.</p> <p>Cannot be applied to properties that are less than 100ha.</p> <p>Cannot be applied to properties within 50km of the coast unless LLS is satisfied that the primary use of the land is agricultural activities.</p>

2.2 Category 2 lands

From NSW Government website – Map method statement

<https://www.landmanagement.nsw.gov.au/native-vegetation-regulatory-map/native-vegetation-regulatory-map-map-method-statement/>

Land classified as Category 2 is generally defined as regulated land which has not been cleared, or otherwise has an identified environmental value. Available mapping information to compile this category is:

- Australian Land Use and Management classification (ALUM) – major category 1 or 2 (these are substantially natural environments) - Australian Department of Agriculture and Water Resources
- RAMSAR wetlands – Australian Department of the Environment
- Vulnerable land, which is made up of riparian areas buffered on either side by 20m; and steep or highly erodible lands – NSW Office of Environment and Heritage

2.3 Excluded Lands

From NSW Government website – Map method statement

<https://www.landmanagement.nsw.gov.au/native-vegetation-regulatory-map/native-vegetation-regulatory-map-map-method-statement/>

The regulatory framework for native vegetation clearing in rural areas will not apply on excluded lands. Generally these are defined as urban areas and land use zones excluded from the provisions of the regulatory map and land regulated under other legislation, such as national parks and state forests. These lands can generally be defined by:

- Local Environment Plan (LEP) zones (codes RU5, R1-5, B1-8, IN1-4, SP2, E2-4 and W3) – Department of Planning and Environment
- National Parks and Wildlife Service (NPWS) Reserves - NSW Office of Environment and Heritage
- Wilderness Areas - NSW Office of Environment and Heritage
- State Forest (SF) Flora Reserves – Forestry Corporation of NSW
- Crown Reserves - NSW Land and Property Information
- State Forest or Timber Reserve - Forestry Corporation of NSW

3 Methods

A spatial analysis was carried out using a geographic information systems (ArcGIS) to combine, filter and union a number of spatial datasets. The analysis was conducted across the whole of NSW and all datasets were converted to a base resolution grid cell size of 25 meters (5m x 5m grid cell). Analysis results were mapped and resultant statistics were tabulated against LGAs.

The following is an outline of the process carried out to identify the area of native vegetation that could be potentially cleared under the Equity Code:

- Combine available datasets to develop interim Category 2 land mapping in accordance with the map method statement. Datasets combined were:
 - ALUM major category 1 and 2
 - RAMSAR wetlands
 - 20m buffered drainage
 - Steep and highly erodible lands
- Combine available datasets to develop interim Excluded land mapping in accordance with the map method statement. Datasets combined were:
 - Identified LEP Zones
 - NPWS Reserves
 - Wilderness areas
 - State Forests, Flora Reserves and Timber Reserves
 - Crown Reserves
- Identify properties meeting the application criteria for the Equity Code in accordance with the LLS codes of practice (including the leasehold crown lands located in the western division of NSW). See Figure 1. The following criteria were applied to each lot boundary (cadastral property boundary) across NSW to select lots eligible for the equity code:
 - Greater than 100ha in size
 - Greater than 50 km from the coast
 - Greater than 10% of the lot covered by identified category 2 mapping
- Resultant eligible lots were then intersected with the latest publically available state-wide woody vegetation extent mapping. Spatial analysis operations included combining the following datasets.
 - Category 2 eligible lots
 - NSW woody vegetation extent 2011
 - LGA boundaries
 - LLS boundaries
 - Interim Biogeographic Regionalisation of Australia (IBRA) boundaries
- Report on area of potential clearing of woody vegetation by LLS region / Local Government Area and by IBRA bioregion

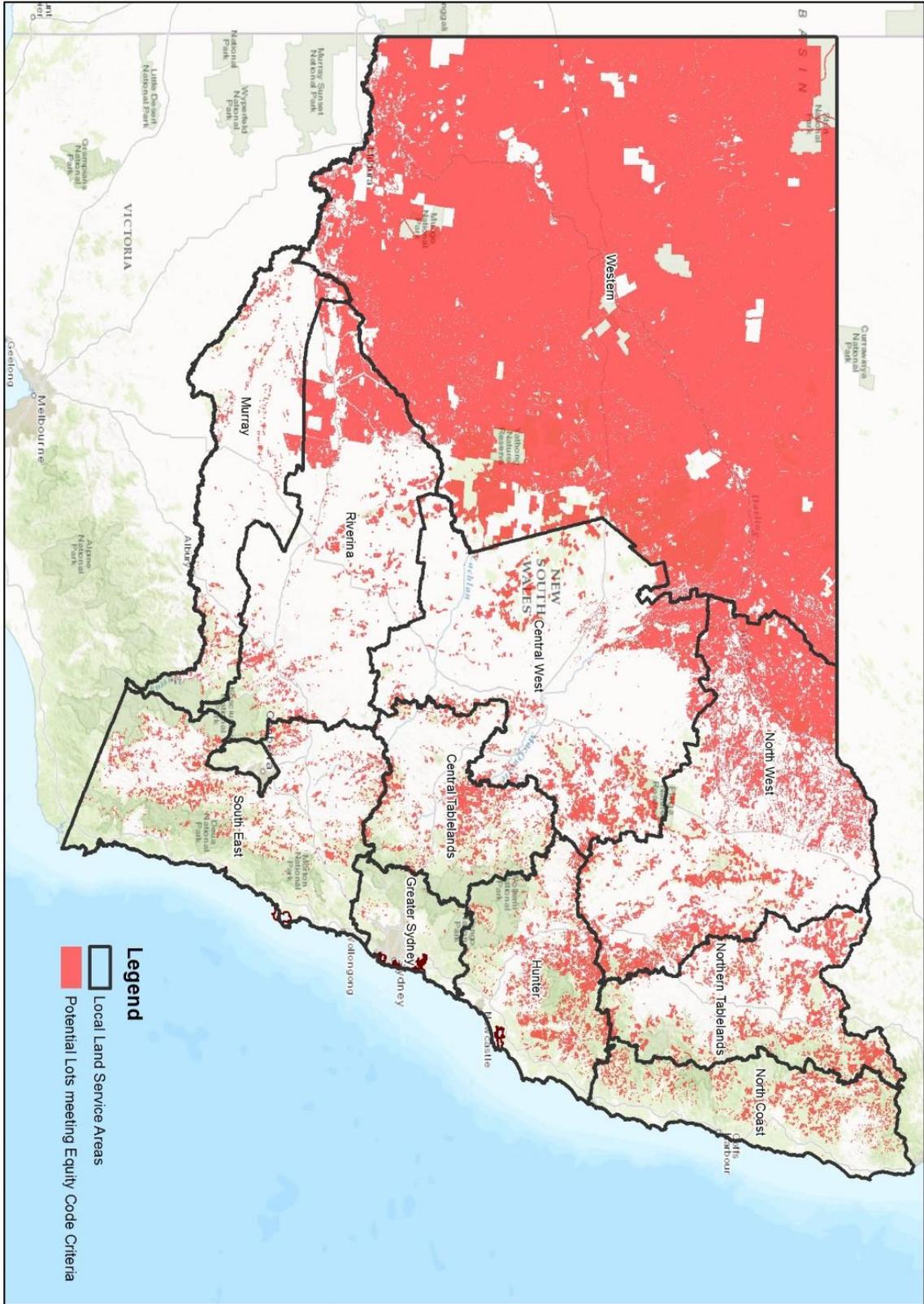


Figure 1: Distribution of lots (properties) which may meet the Equity Code criteria

4 Results

The state-wide area of woody vegetation that occurs within lots meeting the criteria as defined by the proposed Equity Code of the proposed land management framework is reported by LLS and LGA in Table 1 below. The distribution across NSW of total area by LGA of potential woody vegetation clearing is shown in Figure 2; and the distribution of the proportion (%) of the total mapped woody vegetation within each LGA potentially cleared under the Equity Code is shown in Figure 3.

A brief profile of the results by relevant LLS regions is provided in Appendix A.

Table 1: Potential area of woody vegetation cleared under the Equity Code by LGA within LLS regions

LLS Region	Local Government Area	Equity Code Woody Vegetation (ha)	Total Woody Vegetation (ha)	% of total Woody Vegetation
Central Tablelands	BATHURST REGIONAL	64,493	145,895	44
	BLAYNEY	647	16,381	4
	CABONNE	40,865	161,291	25
	COWRA	15,406	64,533	24
	LITHGOW	30,666	335,937	9
	MID-WESTERN REGIONAL	92,863	419,326	22
	OBERON	28,030	210,342	13
	ORANGE	197	4,583	4
	Total	273,167	1,358,287	20
Central West	BOGAN	174,667	215,887	81
	COONAMBLE	25,436	100,505	25
	DUBBO	24,451	117,464	21
	FORBES	10,390	53,947	19
	GILGANDRA	29,667	89,542	33
	LACHLAN	71,825	217,840	33
	NARROMINE	6,801	46,958	14
	PARKES	22,613	96,598	23
	WARREN	36,024	92,503	39
	WARRUMBUNGL	228,624	523,553	44
	WEDDIN	14,426	60,547	24
	WELLINGTON	22,145	83,533	27
Total	667,068	1,698,877	39	
Greater Sydney	BLUE MOUNTAINS	1,881	138,157	1
	HAWKESBURY	2,288	244,558	1
	WOLLONDILLY	2,979	204,964	1
	Total	7,148	587,678	1
Hunter	CESSNOCK	10,098	152,440	7
	DUNOGG	24,029	116,092	21
	GLOUCESTER	57,659	200,475	29
	GREAT LAKES	40,315	235,823	17
	GREATER TAREE	56,007	241,083	23
	LAKE MACQUARIE	105	45,247	0

LLS Region	Local Government Area	Equity Code Woody Vegetation (ha)	Total Woody Vegetation (ha)	% of total Woody Vegetation
	MAITLAND	726	5,168	14
	MUSWELLBROOK	6,804	204,717	3
	PORT STEPHENS	1,087	46,475	2
	SINGLETON	36,178	303,985	12
	UPPER HUNTER	131,368	320,986	41
	Total	364,375	1,872,491	19
Murray	ALBURY	14	8,048	0
	BERRIGAN	1,257	14,122	9
	CONARGO	7,504	33,249	23
	COROWA	492	16,236	3
	GREATER HUME	28,602	142,539	20
	JERILDERIE	1,697	8,943	19
	MURRAY	5,889	77,608	8
	TUMBARUMBA	14,406	291,414	5
	URANA	207	17,570	1
	WAKOOL	25,048	81,287	31
	Total	85,116	691,016	12
North Coast	BALLINA	1	14,719	0
	BELLINGEN	5,682	125,102	5
	BYRON	78	30,283	0
	CLARENCE VALLEY	152,092	786,766	19
	COFFS HARBOUR	2,096	84,698	2
	KEMPSEY	28,953	243,076	12
	KYOGLE	55,671	238,846	23
	LISMORE	4,955	47,911	10
	NAMBUCCA	8,568	112,128	8
	PORT MACQUARIE-HASTINGS	43,415	274,885	16
	RICHMOND VALLEY	50,807	191,801	26
	TWEED	6,965	74,079	9
Total	359,282	2,224,294	16	
North West	GUNNEDAH	18,265	70,258	26
	GWYDIR	91,237	235,620	39
	LIVERPOOL PLAINS	51,365	105,105	49
	MOREE PLAINS	75,369	151,812	50
	NARRABRI	97,316	488,729	20
	TAMWORTH REGIONAL	190,079	353,897	54
	WALGETT	256,175	312,304	82
Total	779,805	1,717,726	45	
Northern Tablelands	ARMIDALE DUMARESQ	33,918	219,097	15
	GLEN INNES SEVERN SHIRE	70,214	288,162	24
	GUYRA	54,225	185,479	29
	INVERELL	136,716	301,930	45
	TENTERFIELD	178,700	502,275	36
	URALLA	28,497	88,574	32

LLS Region	Local Government Area	Equity Code Woody Vegetation (ha)	Total Woody Vegetation (ha)	% of total Woody Vegetation
	WALCHA	54,127	351,745	15
	Total	556,397	1,937,262	29
Riverina	BLAND	26,620	92,031	29
	CARRATHOOL	168,561	298,083	57
	COOLAMON	2,018	14,327	14
	COOTAMUNDRA	725	15,224	5
	GRIFFITH	581	7,089	8
	GUNDAGAI	13,863	48,514	29
	HARDEN	1,787	10,980	16
	HAY	13,155	26,229	50
	JUNEE	1,942	12,470	16
	LEETON	1,598	15,533	10
	LOCKHART	945	10,748	9
	MURRUMBIDGEE	5,854	18,656	31
	NARRANDERA	14,802	43,690	34
	TEMORA	8,263	32,338	26
	TUMUT	20,781	307,426	7
	WAGGA WAGGA	15,139	63,373	24
	YOUNG	2,156	25,711	8
	Total	298,790	1,042,420	29
South East	BEGA VALLEY	9,315	502,351	2
	BOMBALA	25,422	203,353	13
	BOOROWA	11,525	35,214	33
	COOMA-MONARO	91,840	277,956	33
	EUROBODALLA	5,459	308,369	2
	GOULBURN MULWAREE	20,905	135,862	15
	PALERANG	47,052	276,652	17
	QUEANBEYAN CITY	20	5,906	0
	SHOALHAVEN	2,490	385,299	1
	SNOWY RIVER	36,061	302,162	12
	UPPER LACHLAN SHIRE	48,572	201,509	24
	WINGECARRIBEE	4,646	184,160	3
YASS VALLEY	28,295	106,942	26	
	Total	331,602	2,925,736	11
Western	BALRANALD	352,096	386,570	91
	BOURKE	741,681	785,865	94
	BREWARRINA	377,615	404,949	93
	BROKEN HILL	326	903	36
	CENTRAL DARLING	401,909	434,395	93
	COBAR	1,571,247	1,904,328	83
	UNINCORPORATED	453,299	529,104	86
	WENTWORTH	435,094	586,799	74
		Total	4,333,266	5,032,914
	Grand Total	8,056,015	21,088,701	38

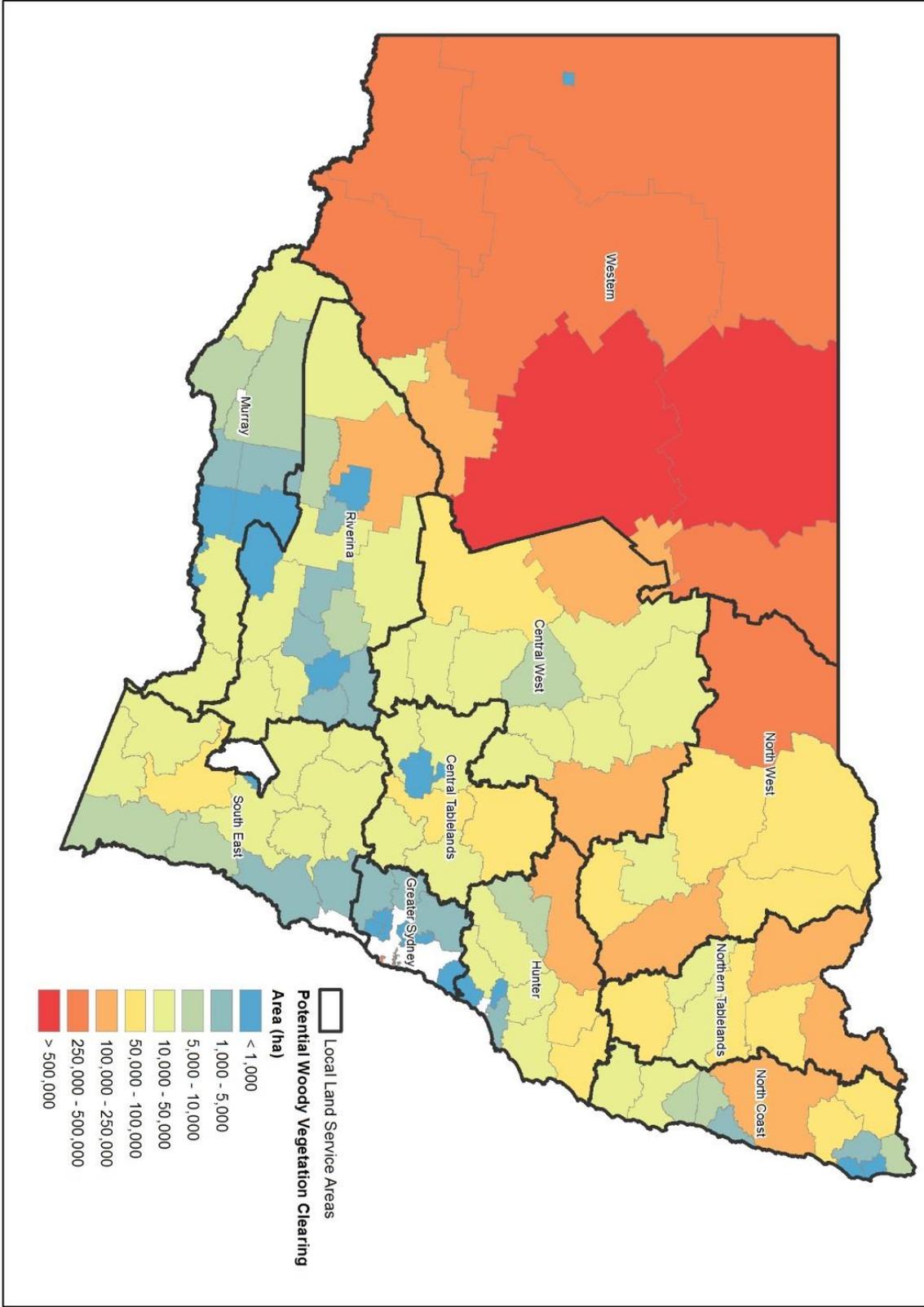


Figure 2: Distribution of area of potential woody vegetation clearing by LGA

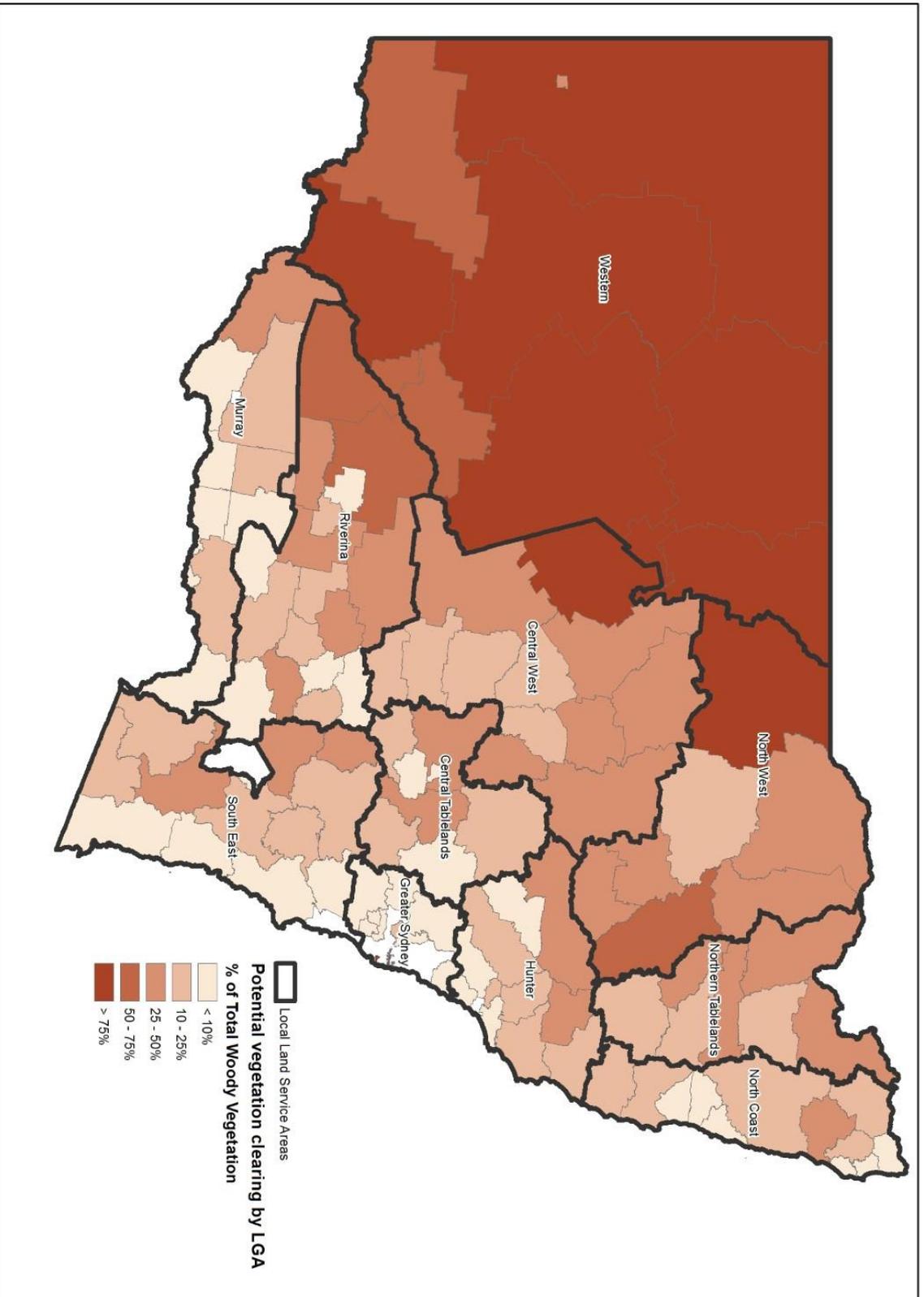


Figure 3: Percentage of potential clearing of total woody vegetation by LGA

Table 2 and Figures 4 and 5 show the total area of woody vegetation and proportion of total mapped woody vegetation potentially cleared by IBRA region.

Table 2: Potential area of woody vegetation cleared under the Equity Code by IBRA region

IBRA7 Regions	Equity Code Woody Vegetation (ha)	Total Woody Vegetation (ha)	% of total Woody Vegetation
Australian Alps	17,623	352,768	5
Brigalow Belt South	569,381	1,659,658	34
Broken Hill Complex	78,354	91,060	86
Channel Country	39,340	47,015	84
Cobar Peneplain	1,960,045	2,541,564	77
Darling Riverine Plains	487,014	736,380	66
Mulga Lands	745,288	774,495	96
Murray Darling Depression	1,658,465	2,074,960	80
Nandewar	313,422	669,922	47
New England Tablelands	389,442	1,249,045	31
NSW North Coast	558,619	2,864,273	20
NSW South Western Slopes	314,469	1,124,626	28
Riverina	124,074	416,079	30
Simpson Strzelecki Dunefields	5,323	10,554	50
South East Corner	28,764	993,756	3
South Eastern Highlands	447,128	2,267,938	20
South Eastern Queensland	222,993	1,011,061	22
Sydney Basin	96,271	2,203,547	4
Total	8,057,207	21,088,701	38

5 Limitations

The following limitations apply to the analysis:

- Woody vegetation coverage used was publically available 2011 state-wide woody vegetation dataset with a 25m resolution (5m x 5m grid cell size)
- Category 2 layer was prepared using existing publically available datasets only – key spatial information was derived from 2008 ALUM land use mapping
- The excluded lands layer was prepared using existing publically available data only
- All lots across NSW identified as potentially meeting the criteria as defined under the land management framework Equity Code of practice were considered as part of this assessment; including areas of crown leasehold making up the western division of NSW
- The total area of potential clearing does not consider or incorporate the clearing limits by property as per the Equity Code criteria *“if the treatment would result in the percentage of the property mapped to Category 2 falls below 10%”*

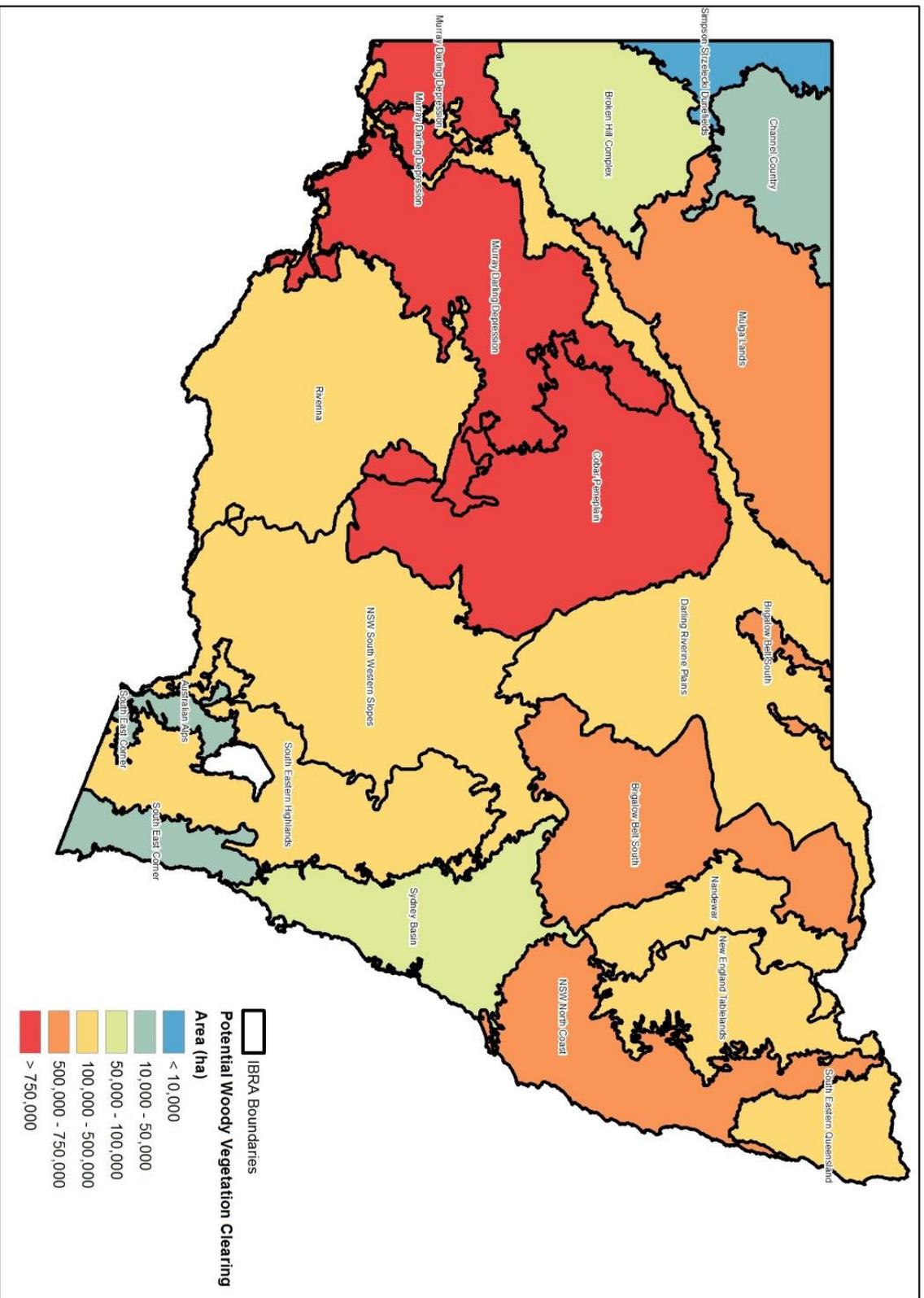


Figure 4: Distribution of potential woody vegetation clearing by IBRA region

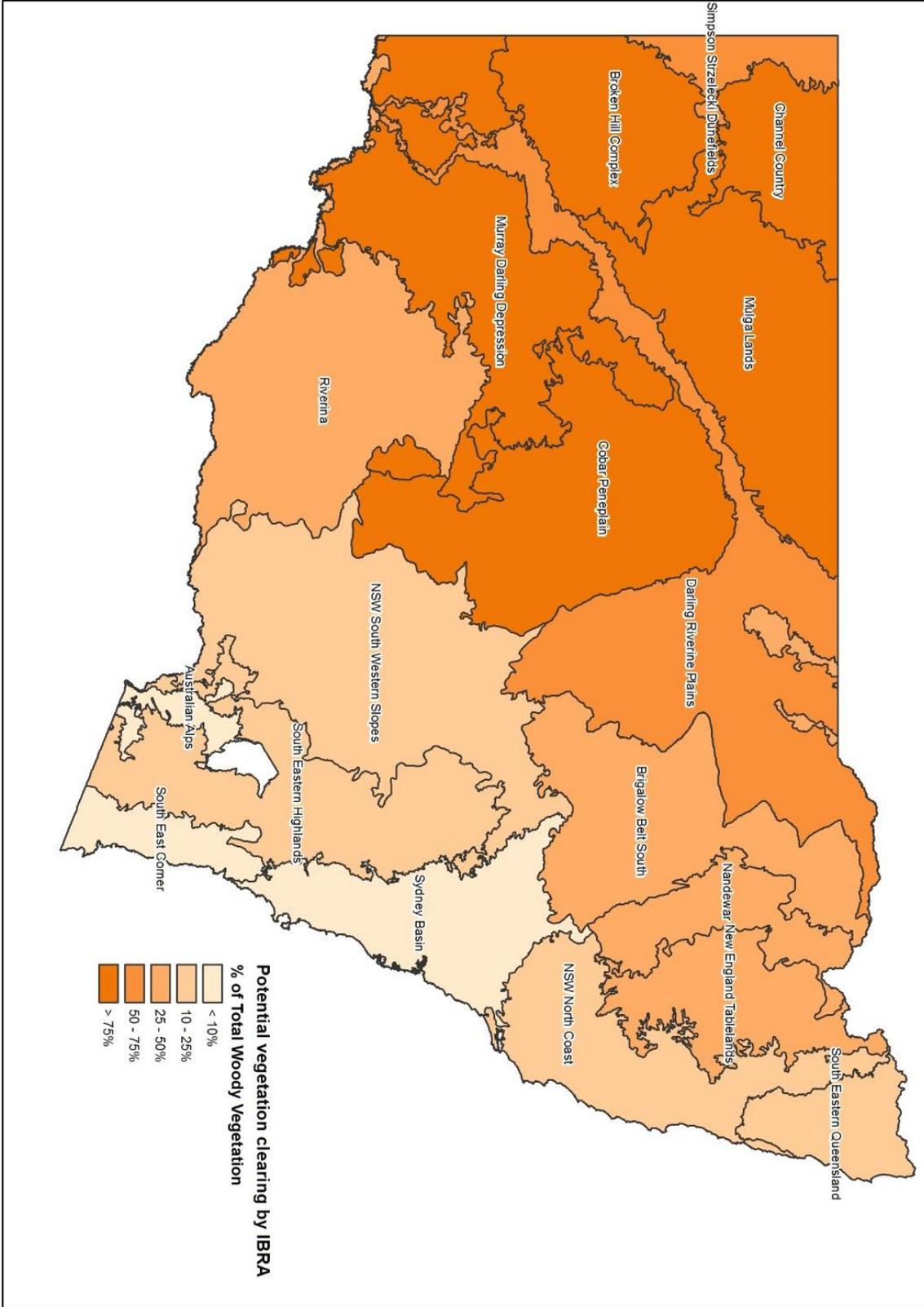


Figure 5: Percentage of potential clearing of total woody vegetation by IBRA region

6 Conclusions

Based on the analysis of publically available spatial information in accordance with the broad rulesets and criteria for the development of the Native Vegetation Regulatory Map and LLS Codes of Practice (OEH 2016), over 8 million hectares of extant woody vegetation would potentially be available for clearing under the Equity Code across NSW. This makes up approximately 38 percent of the existing woody vegetation mapped within the State. Over half of this amount is contained within the Western LLS, where the primary land use is mapped as grazing within native vegetation on crown leasehold land. About 84% of the total mapped woody vegetation in this LLS region could potentially be cleared under the Equity Code.

Other LLS areas that contain large areas of extant woody vegetation potentially available for clearing under the code include North West LLS (nearly 800,000 ha making up 45% of total mapped woody vegetation); Northern Tablelands LLS (over 500,000 ha making up about 29% of total mapped woody vegetation) and the Central West LLS (nearly 500,000 ha making up 39% of total mapped woody vegetation).

References

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OEH Digital Data – NSW Woody Vegetation Extent 2011. Online. [available]

<http://www.auscover.org.au/xwiki/bin/view/Product+pages/nsw+5m+woody+extent+and+fpc>

Appendix A Regions in Focus

LLS Region	Potential % of total existing Woody Vegetation able to be cleared under the proposed Equity Code
Western	86%
North West	45%
Central West	39%
Northern Tablelands	29%
Riverina	29%
Central Tablelands	20%
Hunter	19%
North Coast	16%
Murray	12%
South East	11%

Western LLS Region

The Western LLS region is the largest of the regions, making up about one third of the State. It contains approximately 4.3 million hectares of woody vegetation with potential to be cleared under the LLS Equity Code of Practice, which is over half of the total area within NSW and 86% of the total mapped woody vegetation in the region. Over 1.5 million hectares of this are contained within the Cobar LGA making up 83% of the total mapped woody vegetation in the LGA. The tenure of the whole region is crown leasehold land with the primary land use across the region mapped as grazing within native vegetation.

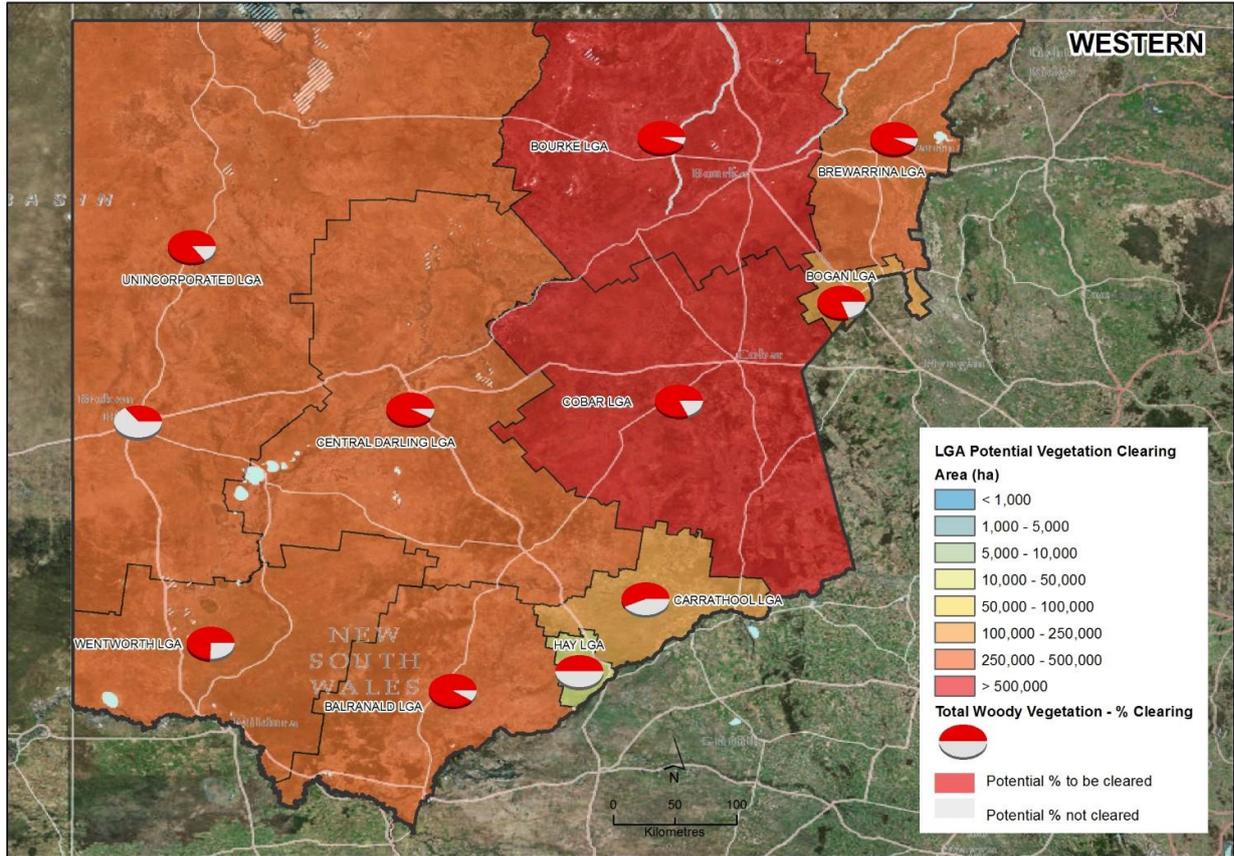


Figure 6: Western equity code potential woody vegetation clearing by LGA

Table 3: Area of potential Equity Code clearing of woody vegetation in Western by LGA

Local Government Area	Equity Code Woody Vegetation (ha)	Total Woody Vegetation (ha)	% of total Woody Vegetation
BALRANALD	352,096	386,570	91
BOURKE	741,681	785,865	94
BREWARRINA	377,615	404,949	93
BROKEN HILL	326	903	36
CENTRAL DARLING	401,909	434,395	93
COBAR	1,571,247	1,904,328	83
UNINCORPORATED	453,299	529,104	86
WENTWORTH	435,094	586,799	74
Grand Total	4,333,266	5,032,914	86

North West LLS Region

The North West LLS has nearly 800,000 hectares of woody vegetation with potential to be cleared under the LLS Equity Code of Practice which is 45% of the total mapped woody vegetation in the region. Local government areas with the highest amount of woody vegetation are Walgett and Tamworth Regional, which include approximately 256,000 (82% of the woody vegetation in the LGA) and 190,000 hectares (54% of the woody vegetation in the LGA) respectively. The primary land uses in this region are cropping through the central part of the region and grazing (mainly in native vegetation) to the west and the east of the region.

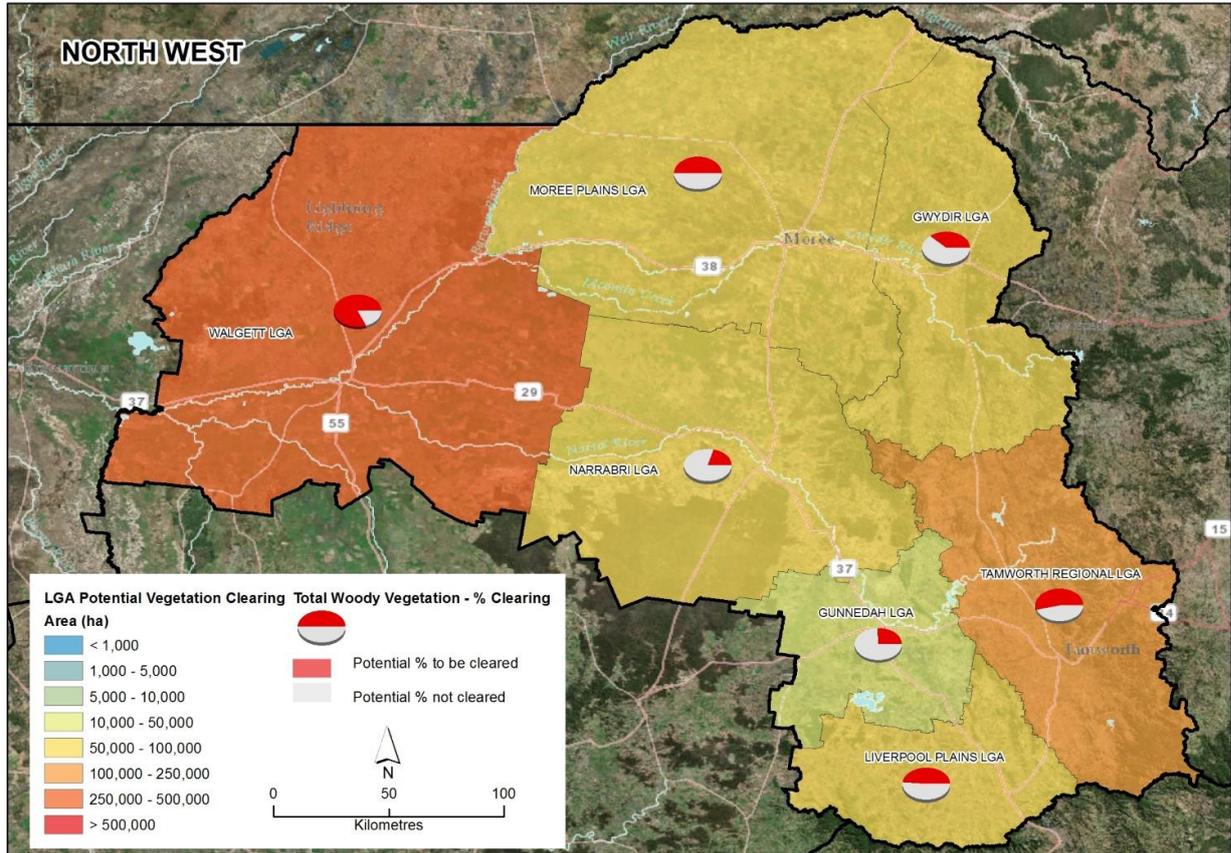


Figure 7: North West equity code potential woody vegetation clearing by LGA

Table 4: Area of potential Equity Code clearing of woody vegetation in North West by LGA

Local Government Area	Equity Code Woody Vegetation (ha)	Total Woody Vegetation (ha)	% of total Woody Vegetation
GUNNEDAH	18,265	70,258	26
GWYDIR	91,237	235,620	39
LIVERPOOL PLAINS	51,365	105,105	49
MOREE PLAINS	75,369	151,812	50
NARRABRI	97,316	488,729	20
TAMWORTH REGIONAL	190,079	353,897	54
WALGETT	256,175	312,304	82
Total	779,805	1,717,726	45

Central West LLS Region

The Central West LLS has over 660,000 hectares of woody vegetation with potential to be cleared under the LLS Equity Code of Practice which is 39% of the total mapped woody vegetation in the region. Local government areas with the highest amount of woody vegetation are Warrumbungle and Bogan, which include 228,000 (44% of the woody vegetation in the LGA) and 174,000 hectares (81% of the woody vegetation in the LGA) respectively. The primary land uses in this region are grazing (mainly in native vegetation) and cropping activities.

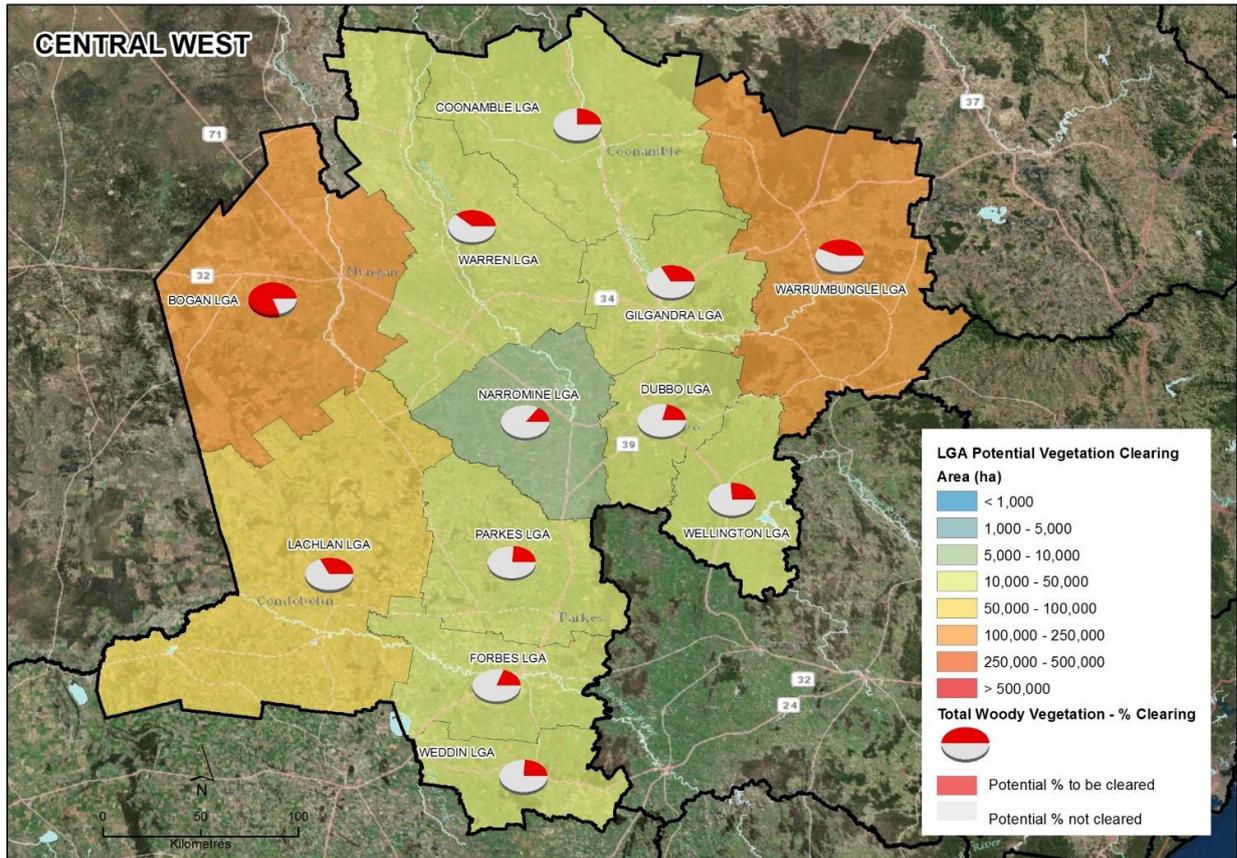


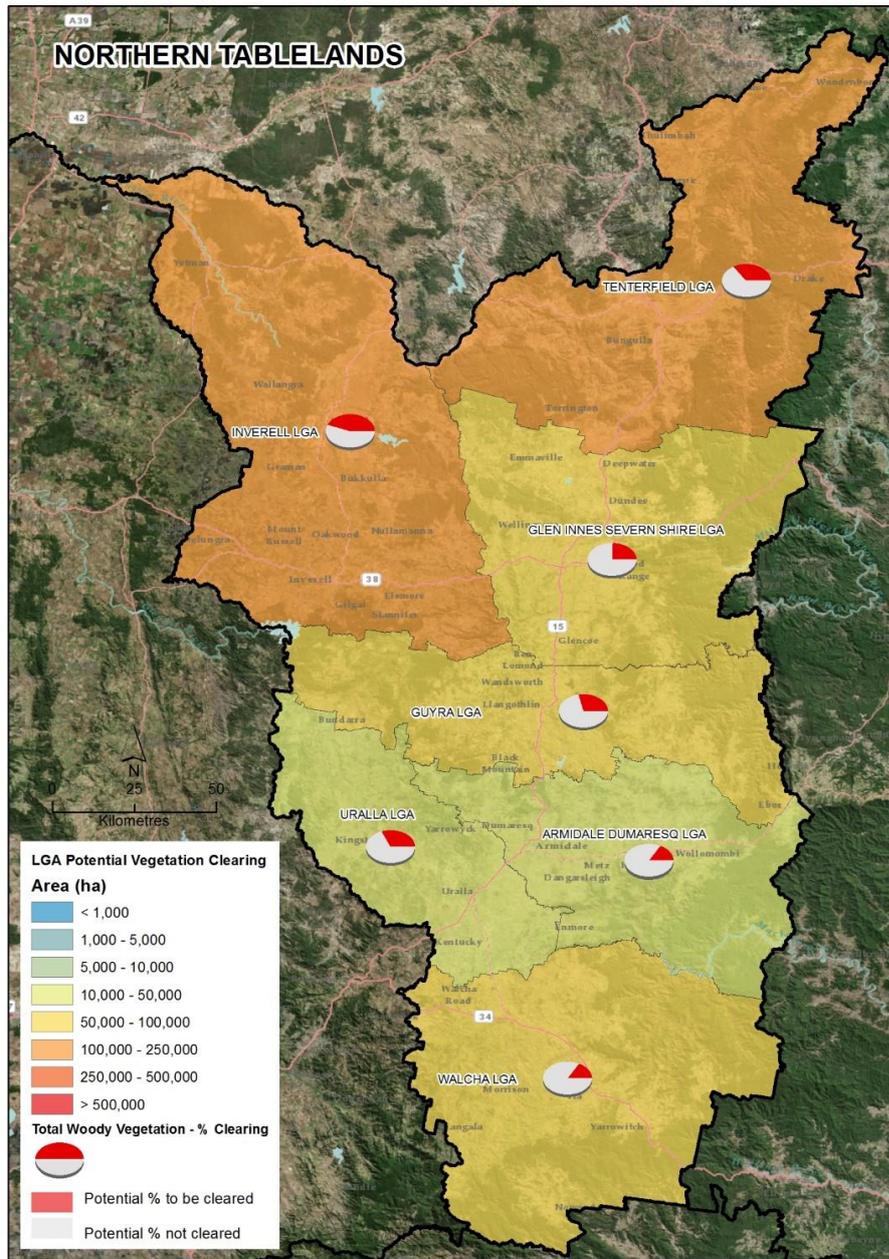
Figure 8: Central West equity code potential woody vegetation clearing by LGA

Table 5: Area of potential Equity Code clearing of woody vegetation in Central West by LGA

Local Government Area	Equity Code Woody Vegetation (ha)	Total Woody Vegetation (ha)	% of total Woody Vegetation
BOGAN*	174,667	215,887	81
COONAMBLE	25,436	100,505	25
DUBBO	24,451	117,464	21
FORBES	10,390	53,947	19
GILGANDRA	29,667	89,542	33
LACHLAN	71,825	217,840	33
NARROMINE	6,801	46,958	14
PARKES	22,613	96,598	23
WARREN	36,024	92,503	39
WARRUMBUNGLE	228,624	523,553	44
WEDDIN	14,426	60,547	24
WELLINGTON	22,145	83,533	27
Total	667,068	1,698,877	39

*Partly within Western LLS

Northern Tablelands LLS Region



The Northern Tablelands LLS has over 500,000 hectares of woody vegetation with potential to be cleared under the LLS Equity Code of Practice which is 29% of the total mapped woody vegetation in the region. Local government areas with the highest amount of woody vegetation are Tenterfield and Inverell, which include approximately 179,000 (36% of the woody vegetation in the LGA) and 137,000 hectares (45% of the woody vegetation in the LGA) respectively. The primary land use in this region is mapped as grazing, with large areas identified for conservation along the eastern and southern boundaries of the region along the Great Dividing Range.

Figure 9: Northern Tablelands equity code potential woody vegetation clearing by LGA

Table 6: Area of potential Equity Code clearing of woody vegetation in Northern Tablelands by LGA

Local Government Area	Equity Code Woody Vegetation (ha)	Total Woody Vegetation (ha)	% of total Woody Vegetation
ARMIDALE DUMARESQ	33,918	219,097	15
GLEN INNES SEVERN SHIRE	70,214	288,162	24
GUYRA	54,225	185,479	29
INVERELL	136,716	301,930	45
TENTERFIELD	178,700	502,275	36
URALLA	28,497	88,574	32
WALCHA	54,127	351,745	15
Total	556,397	1,937,262	29

Riverina LLS Region

The Riverina LLS has over 130,000 hectares of woody vegetation with potential to be cleared under the LLS Equity Code of Practice which is 17% of the total mapped woody vegetation in the region. The local government area with the highest amount of woody vegetation is Carrathool, which includes approximately 168,000 hectares (57% of the woody vegetation in the LGA). The primary land uses in this region are cropping activities and grazing of modified pastures.

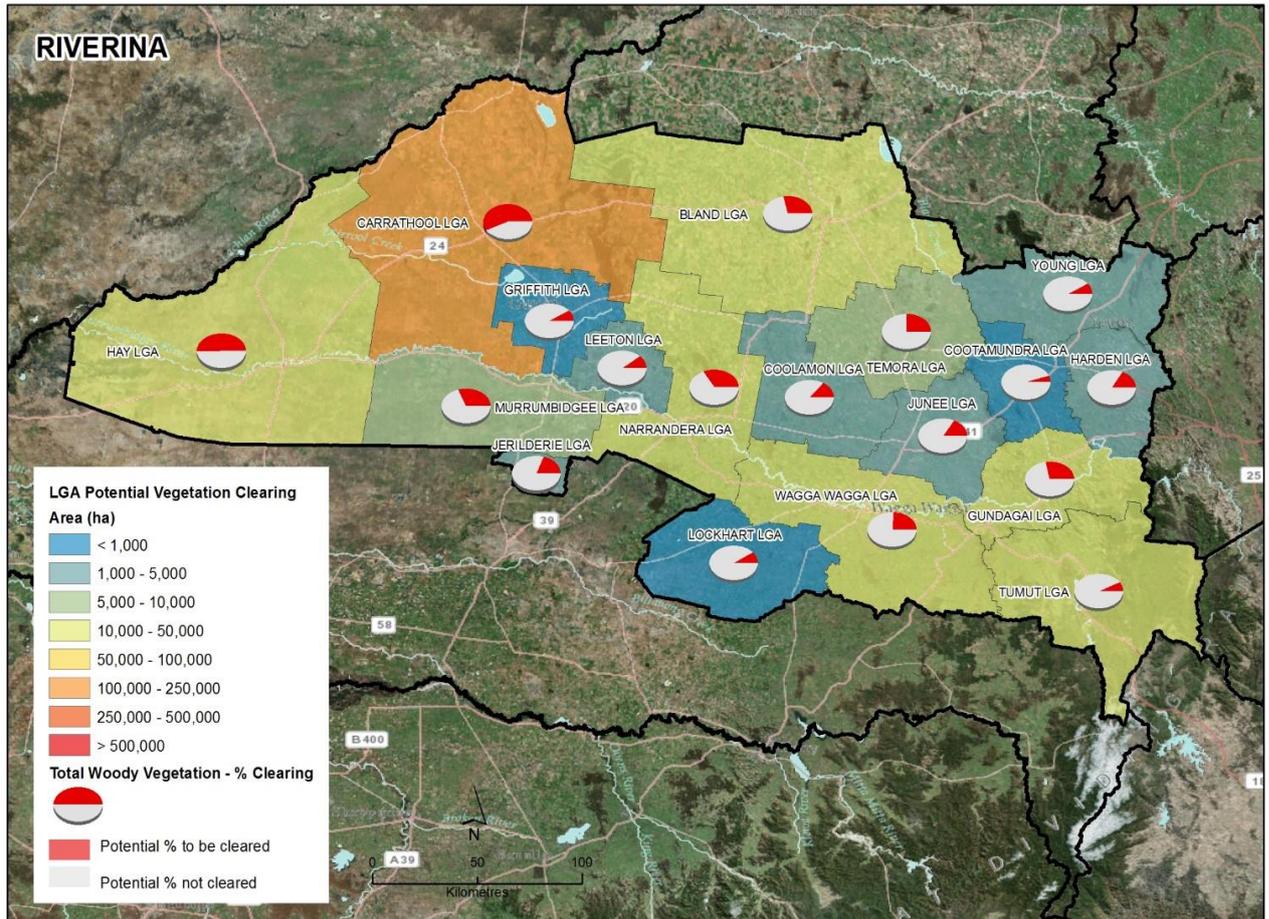


Figure 10: Riverina equity code potential woody vegetation clearing by LGA

Table 7: Area of potential Equity Code clearing of woody vegetation in Riverina by LGA

Local Government Area	Equity Code Woody Vegetation (ha)	Total Woody Vegetation (ha)	% of total Woody Vegetation
BLAND	26,620	92,031	29
CARRATHOOL*	168,561	298,083	57
COOLAMON	2,018	14,327	14
COOTAMUNDRA	725	15,224	5
GRIFFITH	581	7,089	8
GUNDAGAI	13,863	48,514	29
HARDEN	1,787	10,980	16
HAY	13,155	26,229	50
JUNEE	1,942	12,470	16
LEETON	1,598	15,533	10
LOCKHART	945	10,748	9
MURRUMBIDGEE	5,854	18,656	31
NARRANDERA	14,802	43,690	34
TEMORA	8,263	32,338	26
TUMUT	20,781	307,426	7
WAGGA WAGGA	15,139	63,373	24
YOUNG	2,156	25,711	8
Total	298,790	1,042,420	29

*Partly within Western LLS

Central Tablelands LLS Region

The Central Tablelands LLS has over 270,000 hectares of woody vegetation with potential to be cleared under the LLS Equity Code of Practice which is 20% of the total mapped woody vegetation in the region. Local government areas with the highest amount of woody vegetation are Bathurst Regional and Mid-Western Regional, which include 64,000 (44% of the woody vegetation in the LGA) and about 93,000 hectares (22% of the woody vegetation in the LGA) respectively. The primary land uses in this region are grazing modified pastures with small areas of cropping activities. Areas towards the east of the region are identified for conservation, associated with the Great Dividing Range.

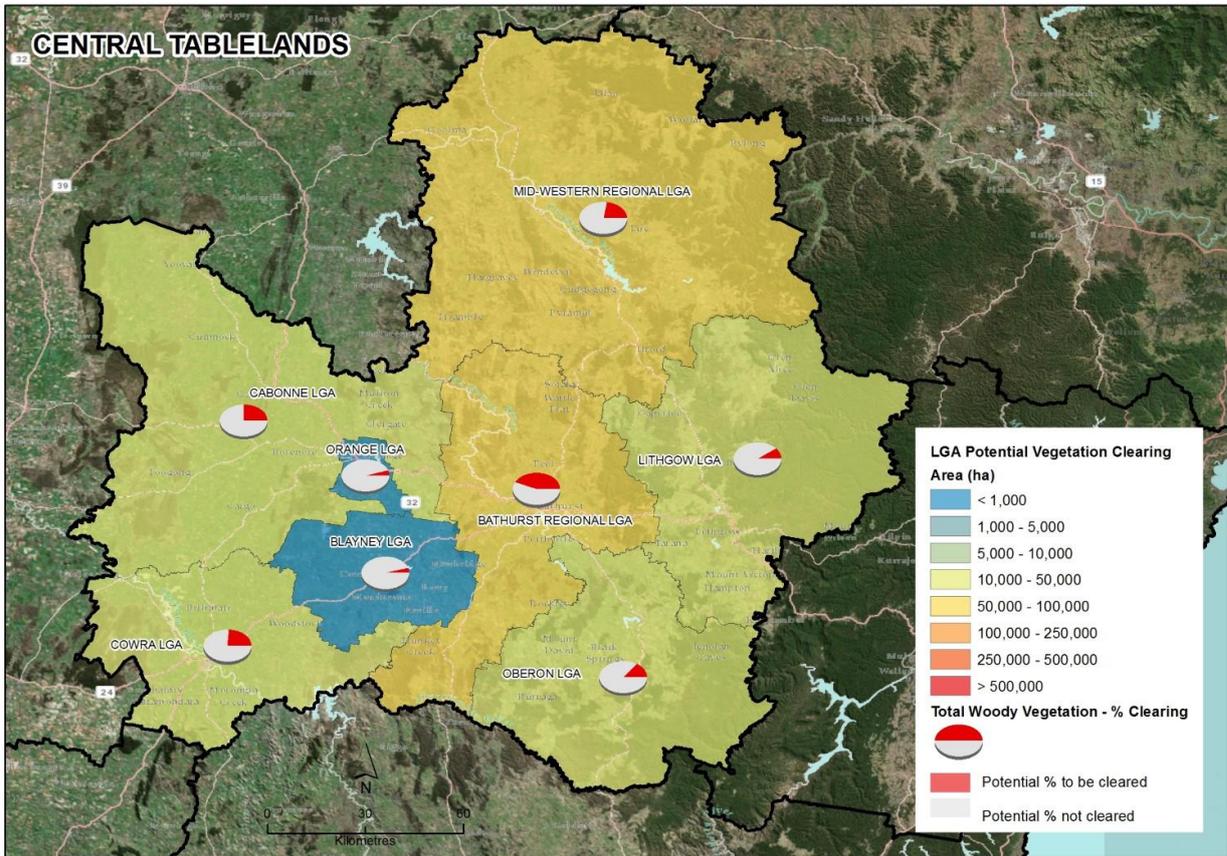


Figure 11: Central Tablelands equity code potential woody vegetation clearing by LGA

Table 8: Area of potential Equity Code clearing of woody vegetation in Central Tablelands by LGA

Local Government Area	Equity Code Woody Vegetation (ha)	Total Woody Vegetation (ha)	% of total Woody Vegetation
BATHURST REGIONAL	64,493	145,895	44
BLAYNEY	647	16,381	4
CABONNE	40,865	161,291	25
COWRA	15,406	64,533	24
LITHGOW	30,666	335,937	9
MID-WESTERN REGIONAL	92,863	419,326	22
OBERON	28,030	210,342	13
ORANGE	197	4,583	4
Total	273,167	1,358,287	20

Hunter LLS Region

The Hunter LLS has over 360,000 hectares of woody vegetation with potential to be cleared under the LLS Equity Code of Practice which is 19% of the total mapped woody vegetation in the region. The local government area with the highest amount of woody vegetation is Upper Hunter, which includes approximately 131,000 hectares (41% of the woody vegetation in the LGA). The primary land use in this region is mapped as grazing. This LLS region has large areas identified for conservation, particularly in the southern parts of the region as well as towards and on the coast.

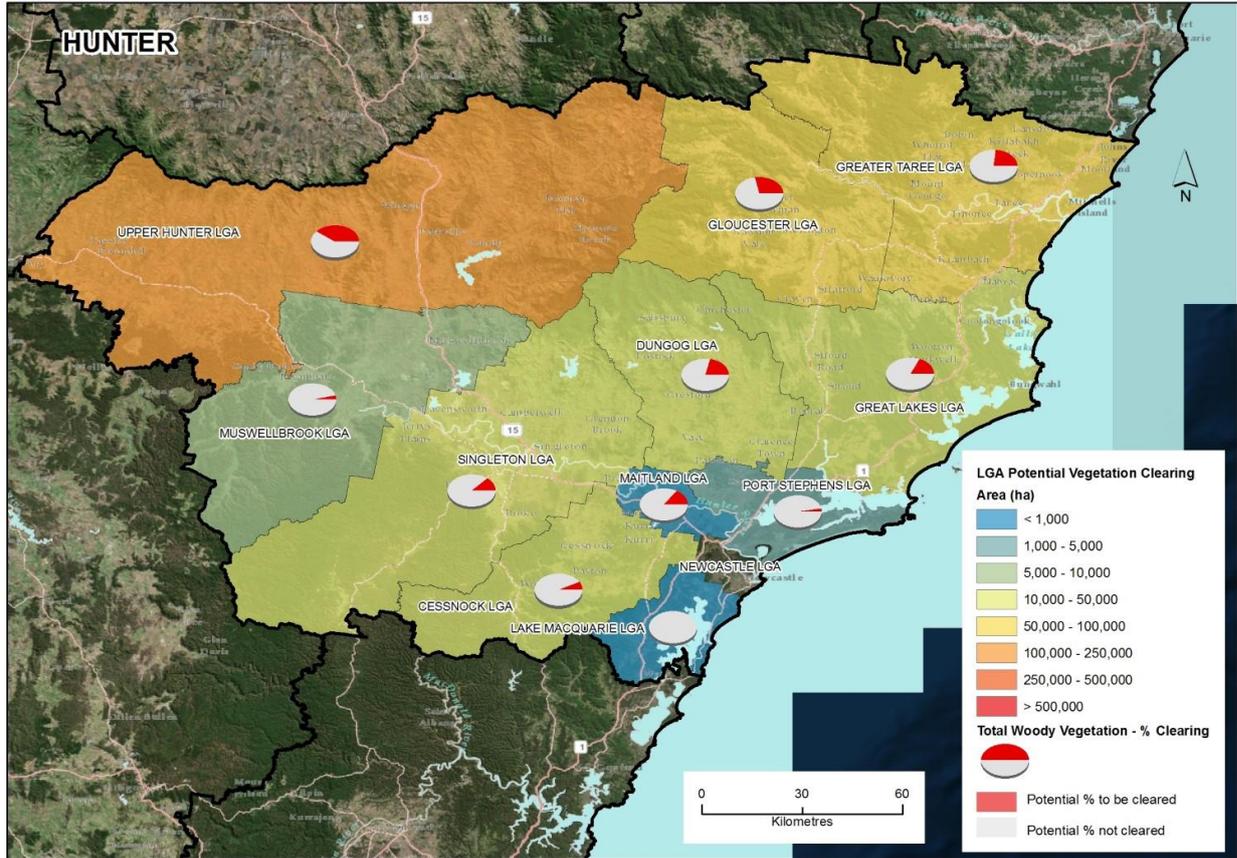


Figure 12: Hunter equity code potential woody vegetation clearing by LGA

Table 9: Area of potential Equity Code clearing of woody vegetation in Hunter by LGA

Local Government Area	Equity Code Woody Vegetation (ha)	Total Woody Vegetation (ha)	% of total Woody Vegetation
CESSNOCK	10,098	152,440	7
DUNOGG	24,029	116,092	21
GLOUCESTER	57,659	200,475	29
GREAT LAKES	40,315	235,823	17
GREATER TAREE	56,007	241,083	23
LAKE MACQUARIE	105	45,247	0
MAITLAND	726	5,168	14
MUSWELLBROOK	6,804	204,717	3
PORT STEPHENS	1,087	46,475	2
SINGLETON	36,178	303,985	12
UPPER HUNTER	131,368	320,986	41
Total	364,375	1,872,491	19

North Coast LLS Region

The North Coast LLS has nearly 360,000 hectares of woody vegetation with potential to be cleared under the LLS Equity Code of Practice which is 16% of the total mapped woody vegetation in the region. The local government area with the highest amount of woody vegetation is Clarence Valley, which includes approximately 152,000 hectares (19% of the woody vegetation in the LGA). The primary land use in this region is mapped as grazing. This LLS region has large areas identified for conservation, particularly along the Great Dividing Range in the west of the region as well as on the coast.

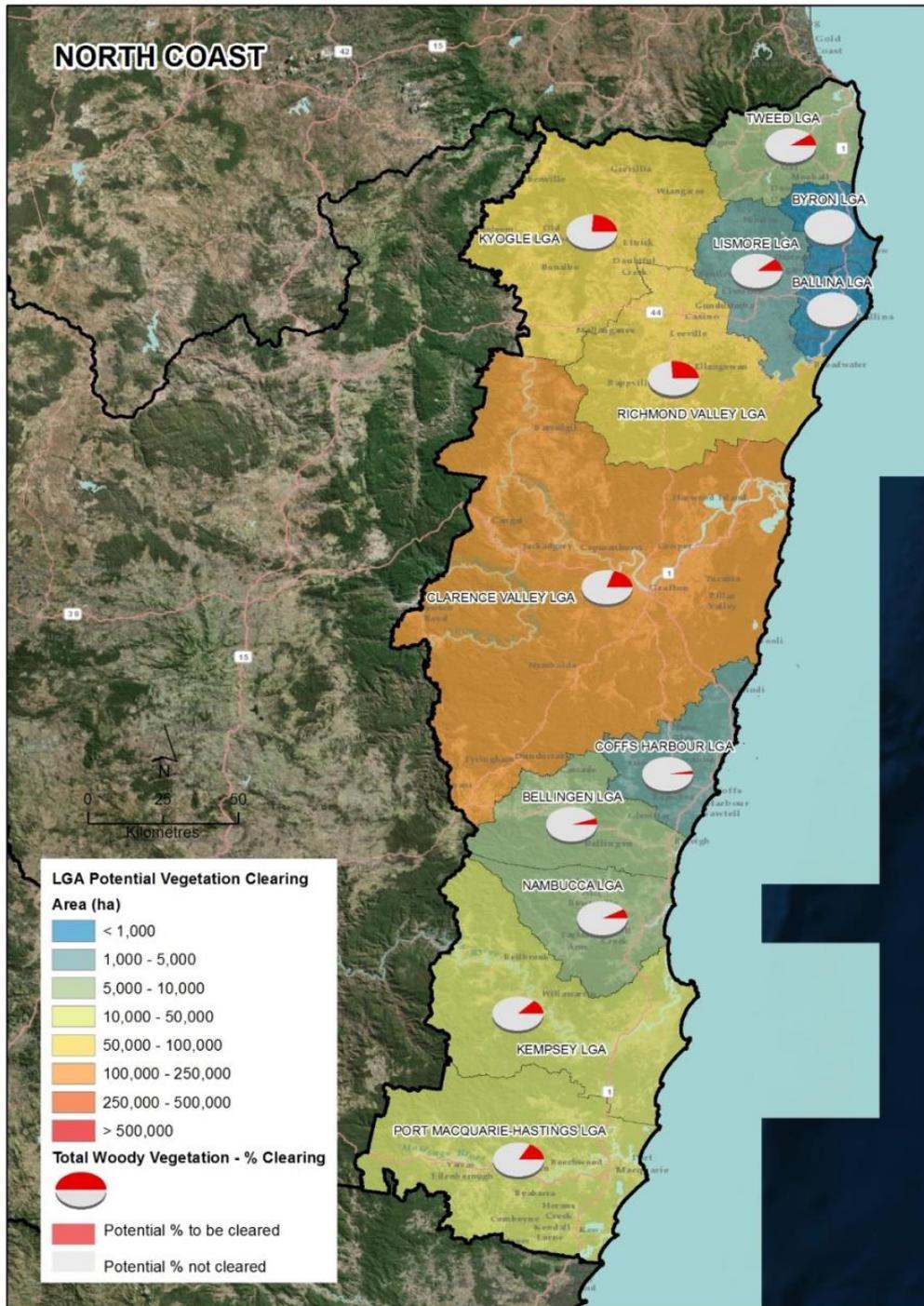


Figure 13: North Coast equity code potential woody vegetation clearing by LGA

Table 10: Area of potential Equity Code clearing of woody vegetation in North Coast by LGA

Local Government Area	Equity Code Woody Vegetation (ha)	Total Woody Vegetation (ha)	% of total Woody Vegetation
BALLINA	1	14,719	0
BELLINGEN	5,682	125,102	5
BYRON	78	30,283	0
CLARENCE VALLEY	152,092	786,766	19
COFFS HARBOUR	2,096	84,698	2
KEMPSEY	28,953	243,076	12
KYOGLÉ	55,671	238,846	23
LISMORE	4,955	47,911	10
NAMBUCCA	8,568	112,128	8
PORT MACQUARIE-HASTINGS	43,415	274,885	16
RICHMOND VALLEY	50,807	191,801	26
TWEED	6,965	74,079	9
Total	359,282	2,224,294	16

Murray LLS Region

The Murray LLS has over 85,000 hectares of woody vegetation with potential to be cleared under the LLS Equity Code of Practice which is 12% of the total mapped woody vegetation in the region. The local government area with the highest amount of woody vegetation is Wakool, which includes approximately 25,000 hectares (31% of the woody vegetation in the LGA). The primary land uses in this region are cropping activities and grazing of modified pastures with some production forestry occurring along the Murray River.

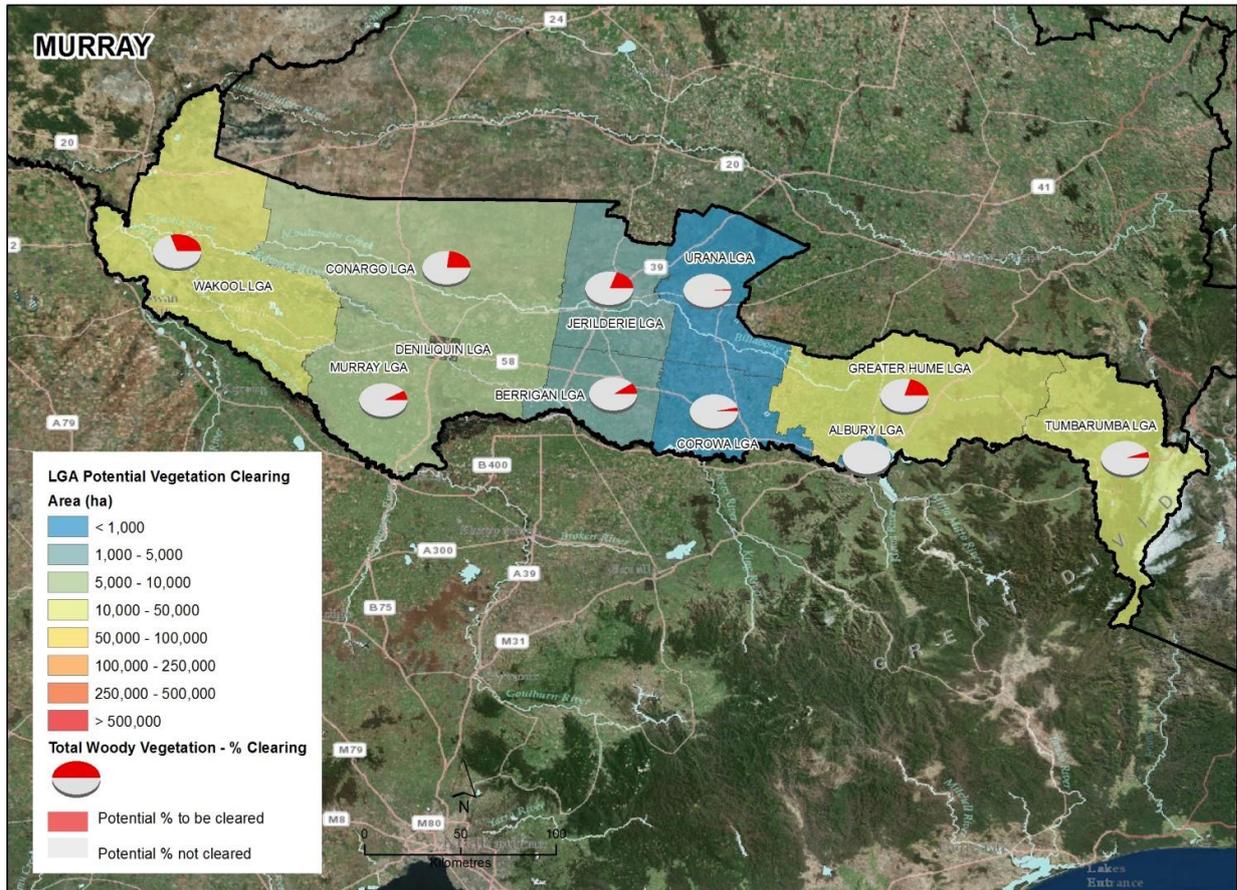


Figure 14: Murray equity code potential woody vegetation clearing by LGA

Table 11: Area of potential Equity Code clearing of woody vegetation in Murray by LGA

Local Government Area	Equity Code Woody Vegetation (ha)	Total Woody Vegetation (ha)	% of total Woody Vegetation
ALBURY	14	8,048	0
BERRIGAN	1,257	14,122	9
CONARGO	7,504	33,249	23
COROWA	492	16,236	3
GREATER HUME	28,602	142,539	20
JERILDERIE	1,697	8,943	19
MURRAY	5,889	77,608	8
TUMBARUMBA	14,406	291,414	5
URANA	207	17,570	1
WAKOOL	25,048	81,287	31
Total	85,116	691,016	12

South East LLS Region

The South East LLS has over 331,000 hectares of woody vegetation with potential to be cleared under the LLS Equity Code of Practice which is 11% of the total mapped woody vegetation in the region. The local government area with the highest amount of woody vegetation is Cooma Monaro, which includes approximately 92,000 hectares (33% of the woody vegetation in the LGA). The primary land use in this region is mapped as grazing of modified pastures west of the Great Dividing Range. This LLS region has large areas identified for conservation, particularly along the Great Dividing Range and in coastal areas.

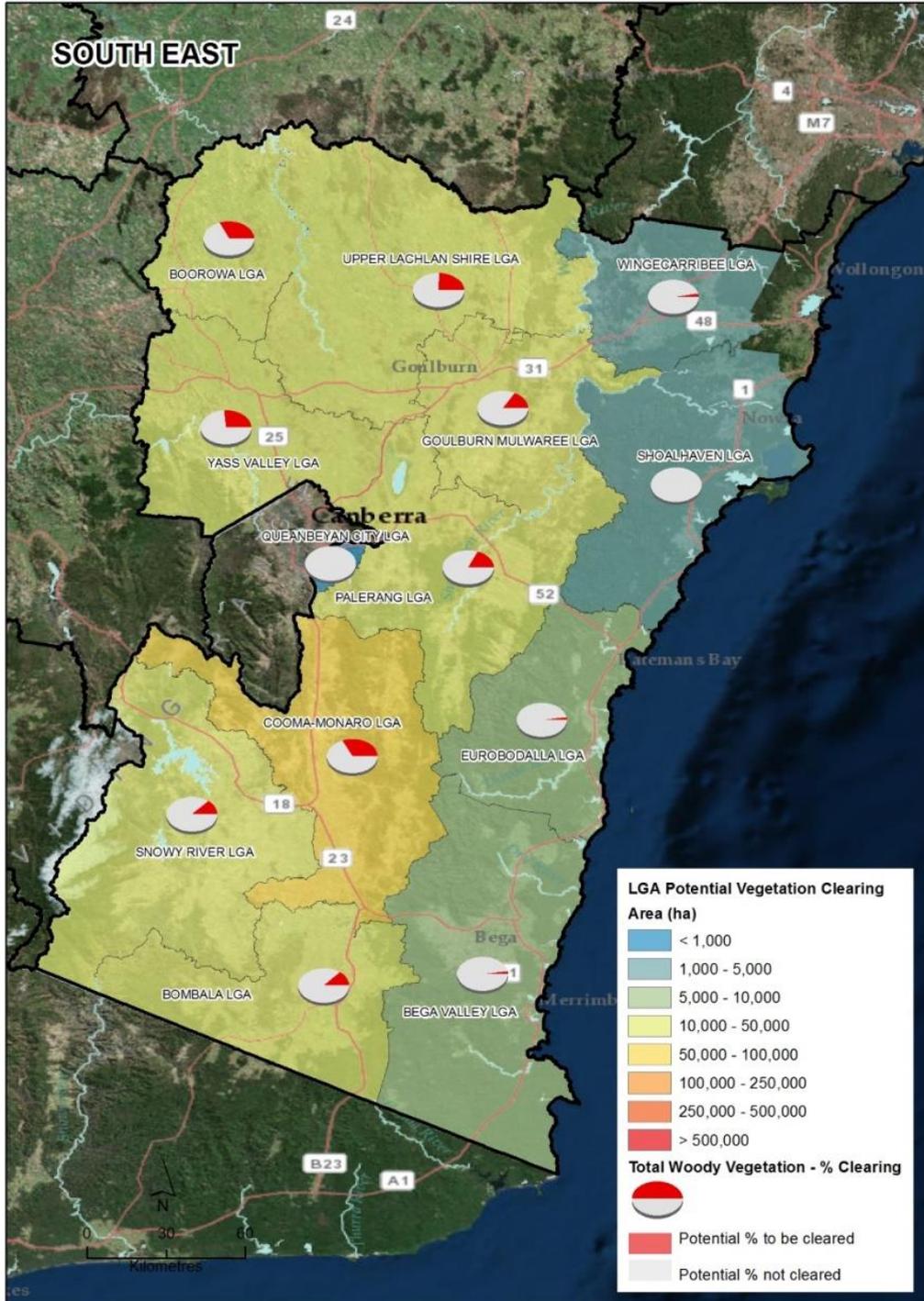


Figure 15: South East equity code potential woody vegetation clearing by LGA

Table 12: Area of potential Equity Code clearing of woody vegetation in South East by LGA

Local Government Area	Equity Code Woody Vegetation (ha)	Total Woody Vegetation (ha)	% of total Woody Vegetation
BEGA VALLEY	9,315	502,351	2
BOMBALA	25,422	203,353	13
BOOROWA	11,525	35,214	33
COOMA-MONARO	91,840	277,956	33
EUROBODALLA	5,459	308,369	2
GOULBURN MULWAREE	20,905	135,862	15
PALERANG	47,052	276,652	17
QUEANBEYAN CITY	20	5,906	0
SHOALHAVEN	2,490	385,299	1
SNOWY RIVER	36,061	302,162	12
UPPER LACHLAN SHIRE	48,572	201,509	24
WINGECARRIBEE	4,646	184,160	3
YASS VALLEY	28,295	106,942	26
Total	331,602	2,925,736	11

Appendix B Threats to Species Habitat – Koala

Further analysis was carried out to identify threats from potential clearing as a result of the Equity Code on threatened species. Koala was used as an example case.

Methods

A spatial analysis was carried out using a geographic information systems (ArcGIS) to combine the resultant area of woody vegetation with potential to be cleared under the Equity Code with known or likely to occur koala habitat mapping from the Species of National Environmental Significance database.

As with the initial analysis all data used a base resolution grid cell size of 25 meters (5m x 5m grid cell). Analysis results were mapped and resultant statistics were tabulated against LGAs.

Results

Over 2.2 million hectares of woody vegetation which has been identified as either being known or likely koala habitat could potentially be cleared under the equity code of the new land management framework. This equates to about 13% of the mapped woody vegetation across the State.

Table 13, below details the potential impacts by LLS and LGA and this distribution is shown in Figures 16 and 17. Local government areas with the greatest potential impact to koala habitat include Walgett LGA in the North West LLS; Warrumbungle LGA in the Central West LLS; the northern LGAs of the Northern Tablelands LLS and the Clarence Valley LGA in the North Coast LLS.

Table 13: Potential area of koala habitat woody vegetation cleared under the Equity Code by LGA within LLS regions

LLS Region	Local Government Area	Known Koala Habitat (ha)	Likely Koala Habitat (ha)	Total Koala Habitat (ha)	Total Woody Vegetation (ha)	% of total Woody Vegetation
Central Tablelands	BATHURST REGIONAL	47,605	12,350	59,955	145,895	41
	BLAYNEY	64	0	64	16,381	<1
	CABONNE	21,845	6,152	27,997	161,291	17
	COWRA	181	696	877	64,533	1
	LITHGOW	16,636	5,688	22,325	335,937	7
	MID-WESTERN REGIONAL	25,665	26,401	52,067	419,326	12
	OBERON	10,103	7,134	17,237	210,342	8
	ORANGE	0	87	87	4,583	2
	Total	122,100	58,508	180,608	1,358,287	13
Central West	COONAMBLE	3,806	1,456	5,262	100,505	5
	DUBBO	1,866	3,277	5,143	117,464	4
	FORBES	2,205	0	2,205	53,947	4
	GILGANDRA	11,956	3,605	15,561	89,542	17
	LACHLAN	109	182	290	217,840	<1
	NARROMINE	0	4	4	46,958	<1
	PARKES	12,131	2,135	14,265	96,598	15
	WARREN	20,759	637	21,397	92,503	23
	WARRUMBUNGLE	126,235	38,728	164,964	523,553	32
	WEDDIN	185	0	185	60,547	<1

Potential Vegetation clearing under Proposed NSW LLS Act Equity Code

LLS Region	Local Government Area	Known Koala Habitat (ha)	Likely Koala Habitat (ha)	Total Koala Habitat (ha)	Total Woody Vegetation (ha)	% of total Woody Vegetation
	WELLINGTON	2,638	5,514	8,153	83,533	10
	Total	181,890	55,539	237,429	1,482,990	16
Greater Sydney	BLUE MOUNTAINS	1,742	139	1,881	138,157	1
	HAWKESBURY	2,288	0	2,288	244,558	1
	WOLLONDILLY	2,272	708	2,979	204,964	1
	Total	6,302	846	7,148	587,678	1
Hunter	CESSNOCK	10,098	0	10,098	152,440	7
	DUNGOG	21,234	2,737	23,971	116,092	21
	GLOUCESTER	47,066	9,255	56,321	200,475	28
	GREAT LAKES	40,202	113	40,315	235,823	17
	GREATER TAREE	48,498	7,167	55,665	241,083	23
	LAKE MACQUARIE	105	0	105	45,247	<1
	MAITLAND	433	229	662	5,168	13
	MUSWELLBROOK	3,848	1,316	5,164	204,717	3
	PORT STEPHENS	1,087	0	1,087	46,475	2
	SINGLETON	21,084	11,542	32,625	303,985	11
	UPPER HUNTER	39,913	23,803	63,717	320,986	20
Total	233,568	56,162	289,730	1,872,491	15	
Murray	BERRIGAN	1,257	0	1,257	14,122	9
	CONARGO	0	615	615	33,249	2
	COROWA	144	0	144	16,236	1
	GREATER HUME	0	7,397	7,397	142,539	5
	JERILDERIE	28	0	28	8,943	<1
	MURRAY	2,717	1,527	4,244	77,608	5
	TUMBARUMBA	0	8	8	291,414	<1
	WAKOOL	4,493	332	4,825	81,287	6
Total	8,639	9,879	18,519	665,398	3	
North Coast	BALLINA	1	0	1	14,719	<1
	BELLINGEN	5,682	0	5,682	125,102	5
	BYRON	78	0	78	30,283	<1
	CLARENCE VALLEY	137,727	13,218	150,945	786,766	19
	COFFS HARBOUR	2,096	0	2,096	84,698	2
	KEMPSEY	17,688	10,964	28,652	243,076	12
	KYOOGLE	48,540	6,584	55,124	238,846	23
	LISMORE	4,955	0	4,955	47,911	10
	NAMBUCCA	8,568	0	8,568	112,128	8
	PORT MACQUARIE-HASTINGS	31,554	11,439	42,993	274,885	16
	RICHMOND VALLEY	50,094	713	50,807	191,801	26
TWEED	6,965	0	6,965	74,079	9	
Total	313,948	42,918	356,865	2,224,294	16	
North West	GUNNEDAH	14,405	2,258	16,663	70,258	24
	GWYDIR	30,367	5,955	36,322	235,620	15

Potential Vegetation clearing under Proposed NSW LLS Act Equity Code

LLS Region	Local Government Area	Known Koala Habitat (ha)	Likely Koala Habitat (ha)	Total Koala Habitat (ha)	Total Woody Vegetation (ha)	% of total Woody Vegetation
	LIVERPOOL PLAINS	15,641	3,176	18,817	105,105	18
	MOREE PLAINS	8,033	15,422	23,455	151,812	15
	NARRABRI	74,329	1,915	76,244	488,729	16
	TAMWORTH REGIONAL	63,778	4,069	67,847	353,897	19
	WALGETT	135,819	47,601	183,420	312,304	59
	Total	342,373	80,395	422,768	1,717,726	25
Northern Tablelands	ARMIDALE DUMARESQ	3,164	15,629	18,793	219,097	9
	GLEN INNES SEVERN SHIRE	20,474	29,189	49,664	288,162	17
	GUYRA	20,062	15,065	35,127	185,479	19
	INVERELL	66,777	39,140	105,917	301,930	35
	TENTERFIELD	107,145	56,890	164,035	502,275	33
	URALLA	5,446	7,543	12,989	88,574	15
	WALCHA	27,967	15,194	43,161	351,745	12
Total	251,036	178,650	429,686	1,937,262	22	
Riverina	CARRATHOOL	499	1,697	2,195	298,083	1
	COOTAMUNDRA	127	0	127	15,224	1
	GRIFFITH	0	166	166	7,089	2
	HARDEN	0	21	21	10,980	<1
	LEETON	188	569	757	15,533	5
	MURRUMBIDGEE	0	3,183	3,183	18,656	17
	NARRANDERA	2,322	1,168	3,489	43,690	8
	TUMUT	0	7	7	307,426	<1
	WAGGA WAGGA	401	339	740	63,373	1
Total	3,536	7,149	10,685	780,053	1	
South East	BEGA VALLEY	4,697	3,913	8,610	502,351	2
	BOMBALA	3,867	10,092	13,960	203,353	7
	BOOROWA	3,046	982	4,028	35,214	11
	COOMA-MONARO	62,698	5,670	68,369	277,956	25
	EUROBODALLA	471	1,377	1,848	308,369	1
	GOULBURN MULWAREE	15,349	1,067	16,416	135,862	12
	PALERANG	19,373	6,482	25,854	276,652	9
	SHOALHAVEN	1,875	479	2,354	385,299	1
	SNOWY RIVER	6,327	12,461	18,788	302,162	6
	UPPER LACHLAN SHIRE	11,586	5,024	16,609	201,509	8
	WINGECARRIBEE	4,646	0	4,646	184,160	3
	YASS VALLEY	2,074	1,653	3,728	106,942	3
Total	136,010	49,200	185,210	2,919,830	6	
Western	BOURKE	0	50,986	50,986	785,865	6
	BREWARRINA	23,911	16,488	40,399	404,949	10
	Total	23,911	67,475	91,386	1,190,814	8
Grand Total	1,623,312	606,721	2,230,033	16,736,824	13	

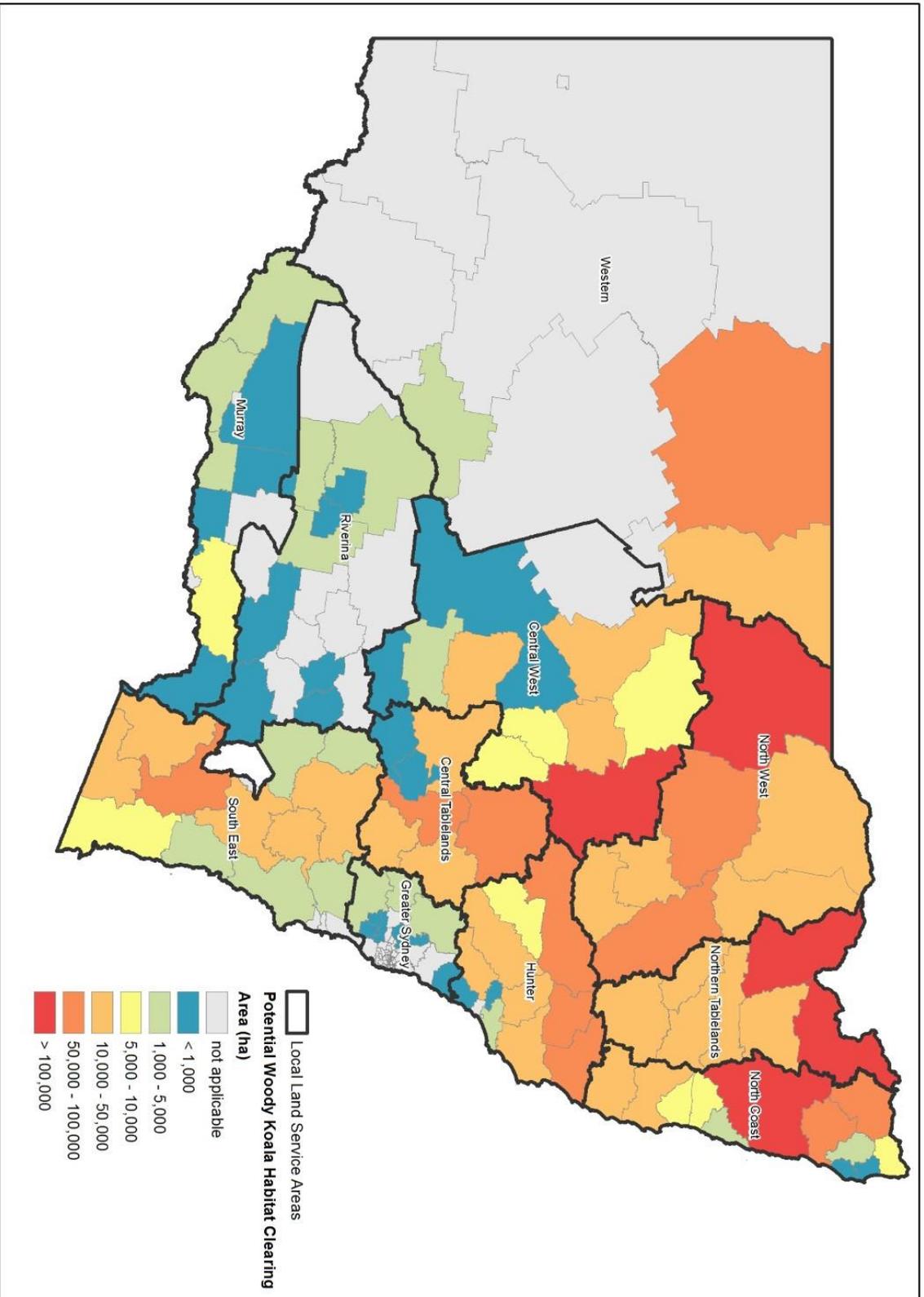


Figure 16: Distribution of area of potential woody koala habitat clearing by LGA

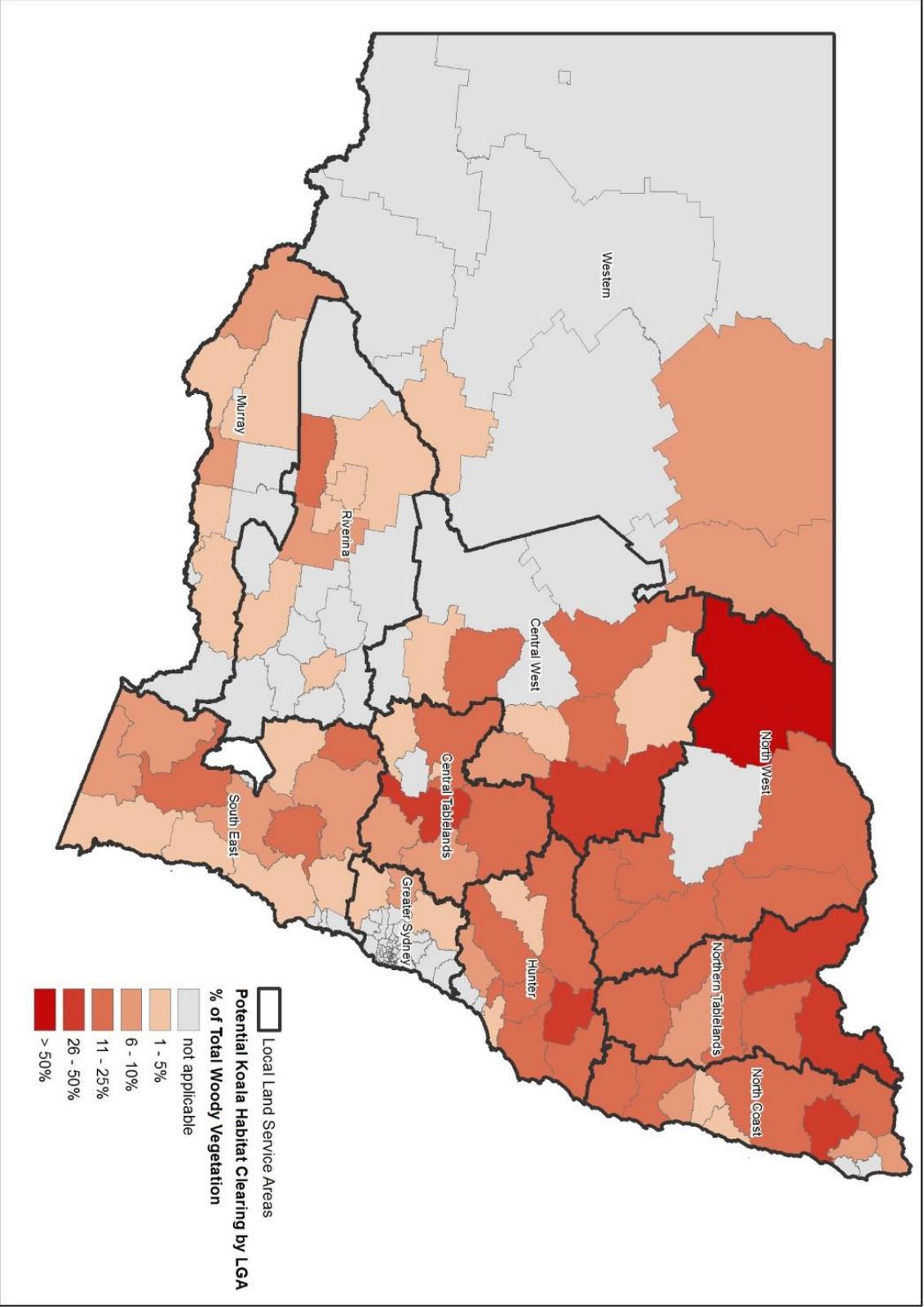


Figure 17: Percentage of potential koala habitat clearing from total woody vegetation by LGA



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