



Department of Planning and Environment

2020 Annual Report

NSW Commercial Kangaroo Harvest
Management Plan 2017-2021



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Introduction

The NSW Department of Planning and Environment and its predecessor organisations have been researching, monitoring and managing the commercial harvesting of kangaroos in New South Wales since the 1970s. During this period, kangaroo management plans have provided the framework for harvesting kangaroos, in accordance with legislative requirements and population variations.

In December 2016, the Australian Government declared the *NSW Commercial Kangaroo Harvest Management Plan 2017–21* to be an approved wildlife trade management plan for the purposes of the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*. This plan sets the framework for the commercial harvest of kangaroos in New South Wales.

This report gives details of the operation of the *NSW Commercial Kangaroo Harvest Management Plan 2017–21* in its fourth year (2020), as required by performance indicator 14b of the Plan. Appendix A describes each performance indicator and the progress made against it during 2020.

The following information is presented:

- actual harvest, by zone and species, compared with the approved quotas
- details of any special quota used (see page 6 for an explanation of special quotas)
- harvest gender bias for each species in each zone
- average carcass weights for each species in each zone
- compliance statistics
- number of licensees
- number of premises inspected
- number of penalty infringement notices issued and the reasons
- number of prosecutions undertaken (offence and outcome)
- any joint surveillance or enforcement activities completed
- any unusual situations that arose (e.g. flood, disease outbreaks, market factors)
- any experiments or research undertaken by the department or sponsored by the department.

Details of population survey methods, the results of aerial surveys and the setting of quotas are given in a separate report, the 2020 Quota Report, available from the Kangaroo management plans, reports and research webpage.

Actual harvest in 2020 by zone and species

The 2020 harvest for each management zone is summarised in Table 1. Data includes management zone name and number, combined population estimate (p), combined quota per zone (q), quantity harvested (harvest), the commercial harvest as a percentage of the population estimate (%p), the commercial harvest as a percentage of the approved quota (%q), and the percentage of harvested animals that were males (% harvest male).

Table 1 Harvest by zone for all species combined during 2020

Zone	Population (p)	Quota (q)	Harvest	% p	% q	% harvest male	Av. wt. (F)	Av. wt. (M)
01 – Tibooburra	127,848	6,782	0	0.0	0.0	0.0	0.0	0.0
02 – Broken Hill	1,450,759	240,097	52,183	3.6	21.7	60.9	18.6	26.7
04 – Lower Darling	1,069,837	174,297	44,926	4.2	25.8	70.0	18.7	28.6
06 – Cobar	43,375	0	0	0.0	0.0	0.0	0.0	0.0
07 – Bourke	548,819	84,504	11,166	2.0	13.2	66.0	17.5	26.4
08 – Narrabri	1,112,083	172,906	33,162	3.0	19.2	64.0	17.8	25.6
09 – Armidale	539,190	72,795	34,187	6.3	47.0	66.6	19.1	28.9
10 – Coonabarabran	2,036,428	315,467	50,657	2.5	16.1	70.8	17.8	26.0
13 – Glen Innes	680,065	92,715	21,210	3.1	22.9	71.4	18.3	26.9
14 – Upper Hunter	210,900	28,575	21,593	10.2	75.6	74.2	19.3	28.9
16 – South East NSW	1,721,400	258,210	58,033	3.4	22.5	61.6	20.4	32.6
17 – Griffith North	1,188,747	181,503	54,661	4.6	30.1	70.9	19.4	28.8
18 – Griffith South	766,854	99,010	29,371	3.8	29.7	74.0	20.3	28.2
48 – C/T North	1,728,200	259,230	33,801	2.0	13.0	67.7	19.1	29.3
49 – C/T South	933,900	140,085	24,236	2.6	17.3	75.8	20.1	29.0
Totals	14,158,405	2,126,176	469,186	3.3	22.1	68.0	19.0	28.3

C/T: Central Tablelands

Average weights are in kilograms.

Note: The quota values for 14 – Upper Hunter, 13 – Glen Innes and 09 – Armidale zones in Table 1 reflect the uncorrected wallaroo quotas. See 'Wallaroo quota' on page 11 for further explanation.

The harvest data in Table 1 is shown graphically in Figure 1 to illustrate the absolute and relative contributions to the total harvest made by each commercial kangaroo management zone. This shows South East zone contributed the highest number of kangaroos, with 12.3% of the total harvest. It also shows there were no kangaroos harvested in Tibooburra and Cobar zones in 2020.

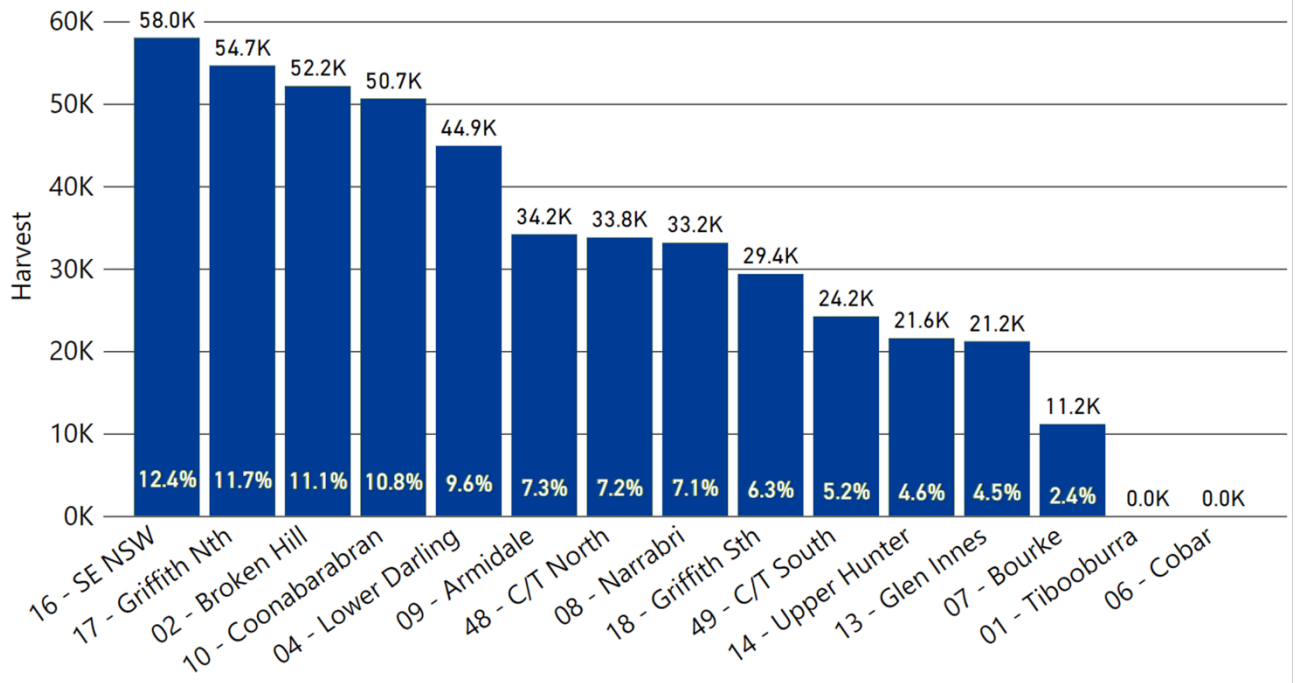


Figure 1 Total harvest and percentage contribution to the 2020 harvest for each zone

Table 2 lists the details of the 2020 harvest by zone and species. Data includes the management zone name and number, population estimate (p), quota per zone (q), quantity harvested (harvest), the commercial harvest as a percentage of the population estimate (%p), the commercial harvest as a percentage of the approved quota (%q), the percentage of harvested animals that were males (% harvest male) and the average carcass weight in kilograms (Av. wt) of harvested females (F) and males (M).

Table 2 Harvest by zone and species during 2020

Zone	Population (p)	Quota (q)	Harvest	% p	% q	% harvest male	Av. wt. (F)	Av. wt. (M)
Eastern grey								
01 – Tibooburra	38,643	5,796	0	0.0	0.0	0.0	0.0	0.0
02 – Broken Hill	136,233	20,435	1,533	1.1	7.5	67.0	18.6	27.2
04 – Lower Darling	118,535	17,780	14,046	11.8	79.0	80.2	20.6	29.7
06 – Cobar	3,047	0	0	0.0	0.0	0.0	0.0	0.0
07 – Bourke	41,218	0	0	0.0	0.0	0.0	0.0	0.0
08 – Narrabri	760,057	114,009	26,168	3.4	23.0	64.4	17.8	25.4
09 – Armidale	421,900	63,285	32,291	7.7	51.0	65.3	19.1	29.1
10 – Coonabarabran	1,421,919	213,288	40,826	2.9	19.1	71.3	17.8	26.0
13 – Glen Innes	545,200	81,780	19,691	3.6	24.1	69.3	18.4	27.2
14 – Upper Hunter	166,500	24,975	19,017	11.4	76.1	70.7	19.3	29.2
16 – South East NSW	1,721,400	258,210	58,033	3.4	22.5	61.6	20.4	32.6
17 – Griffith North	853,334	128,000	30,419	3.6	23.8	70.7	19.6	28.7
18 – Griffith South	547,275	82,091	29,174	5.3	35.5	74.0	20.2	28.2
48 – C/T North	1,728,200	259,230	33,801	2.0	13.0	67.7	19.1	29.3
49 – C/T South	933,900	140,085	24,236	2.6	17.3	75.8	20.1	29.0
Eastern grey total	9,437,361	1,408,964	329,235	3.5	23.4	68.8	19.3	28.8
Red								
01 – Tibooburra	79,346	0	0	0.0	0.0	0.0	0.0	0.0
02 – Broken Hill	1,124,115	191,100	43,870	3.9	23.0	60.3	18.6	26.8
04 – Lower Darling	691,119	117,490	23,981	3.5	20.4	63.5	18.4	28.8
06 – Cobar	36,058	0	0	0.0	0.0	0.0	0.0	0.0

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Zone	Population (p)	Quota (q)	Harvest	% p	% q	% harvest male	Av. wt. (F)	Av. wt. (M)
07 – Bourke	497,085	84,504	11,166	2.2	13.2	66.0	17.5	26.4
08 – Narrabri	346,451	58,897	6,994	2.0	11.9	62.5	17.8	26.5
10 – Coonabarabran	500,137	85,023	9,670	1.9	11.4	68.4	18.0	26.1
17 – Griffith North	159,545	27,123	19,372	12.1	71.4	70.4	19.3	29.5
18 – Griffith South	106,788	0	0	0.0	0.0	0.0	0.0	0.0
Red total	3,540,644	564,137	115,053	3.2	20.4	64.1	18.5	27.6
Walleroo								
09 – Armidale	117,290	9,510	1,896	1.6	19.9	90.1	17.1	27.2
13 – Glen Innes	134,865	10,935	1,519	1.1	13.9	98.3	17.0	24.9
14 – Upper Hunter	44,400	3,600	2,576	5.8	71.6	99.6	18.0	27.7
Walleroo total	296,555	24,045	5,991	2.0	24.9	96.3	17.1	26.8
Western grey								
01 – Tibooburra	9,859	986	0	0.0	0.0	0.0	0.0	0.0
02 – Broken Hill	190,411	28,562	6,780	3.6	23.7	63.7	18.3	26.1
04 – Lower Darling	260,183	39,027	6,899	2.7	17.7	71.5	17.6	25.5
06 – Cobar	4,270	0	0	0.0	0.0	0.0	0.0	0.0
07 – Bourke	10,516	0	0	0.0	0.0	0.0	0.0	0.0
08 – Narrabri	5,575	0	0	0.0	0.0	0.0	0.0	0.0
10 – Coonabarabran	114,372	17,156	161	0.1	0.9	65.8	15.2	21.4
17 – Griffith North	175,868	26,380	4,870	2.8	18.5	74.0	18.5	27.0
18 – Griffith South	112,791	16,919	197	0.2	1.2	70.6	21.2	23.9
Western grey total	883,845	129,030	18,907	2.1	14.7	69.3	18.1	26.1
Total all species	14,158,405	2,126,176	469,186	3.3	22.1	68.0	19.0	28.3

Note: The quota values for Wallaroos in Table 2 are the uncorrected wallaroo quotas. See 'Walleroo quota' on page 11 for further explanation.

The proportion of the total harvest that is made up by each species is shown in Figure 2. It illustrates that 70% of the kangaroos harvested in 2020 were eastern grey kangaroos.

Wallaroos made up just 1% of the total harvest in 2020.

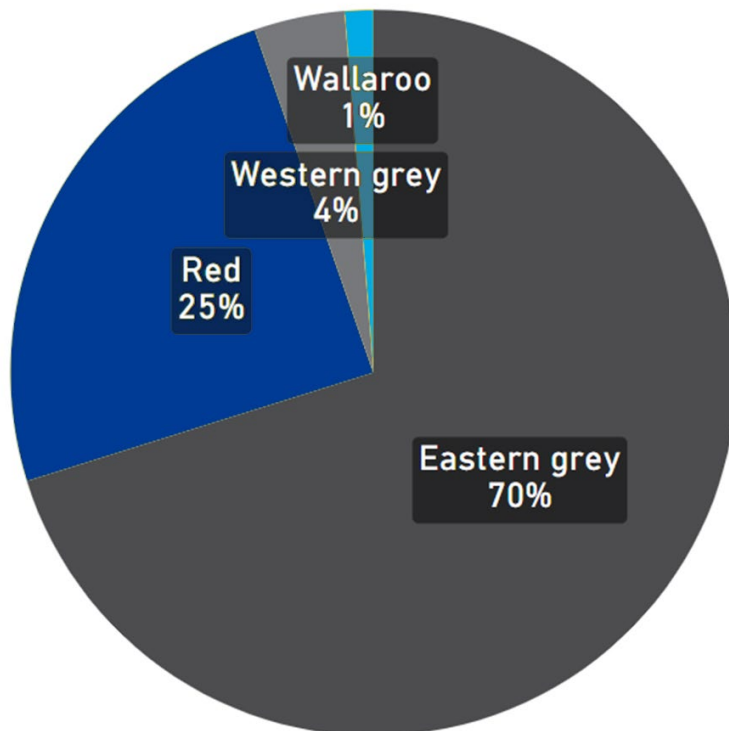


Figure 2 Percentage contribution to the total harvest made by each of the four commercially harvested species

A special quota endorsed by the Australian Government in 2012, as an addition to the overall commercial quota, was potentially available to use if the commercial quota was exhausted or likely to be fully allocated. The intent of using a special quota is to minimise the number of kangaroos culled under non-commercial licences and ensure kangaroos are used as a resource, rather than left to decay in the field.

The department may use the special quota only when the commercial quota for a particular kangaroo management zone has been fully issued. As specified in the *NSW Commercial Kangaroo Harvest Management Plan 2017–21*, the use of a special quota will depend on one or more of the following:

- full use of a commercial quota set at the usual proportion for that species in that zone
- consideration of local conditions, including drought declarations and Western Lands de-stocking orders
- kangaroo population trends (based on the most recent complete surveys)
- climate conditions during the quota year.

The special quota was not used during 2020.

Wallaroo quota

Late in 2020, the department discovered an error in the calculation of some of the wallaroo population estimates. These were corrected, and an explanatory note and the corrected values were published on the department’s website. The correction has increased the wallaroo population estimates, and consequently the quotas, by 1.85 times.

The tables and figures in this report show the updated population values but not the updated wallaroo quotas. The uncorrected quota values, which are lower than the corrected values, were used to manage the harvest throughout 2020. The quantity of wallaroos harvested in 2020 did not exceed these uncorrected quota values. The updated quotas will be used in 2021 and 2022.

Gender bias by species and zone

Harvesting is typically biased toward male animals because they are larger, heavier and provide better return as harvesters are paid a price per kilogram. For the 21-year period 1999 to 2019, the average proportion of males harvested was 71.2% for western greys, 74.7% for eastern greys 75.9% for red kangaroos and 91.9% for wallaroos (Figure 3). These percentages vary between years. In 2020 smaller percentages of eastern greys (68.8%), western greys (69.3%) and red kangaroos (64.1%) were harvested when compared with the average of the previous 21 years. In contrast, the percentage of the wallaroo harvest (96.2%) that were males was significantly higher than the 21-year average.

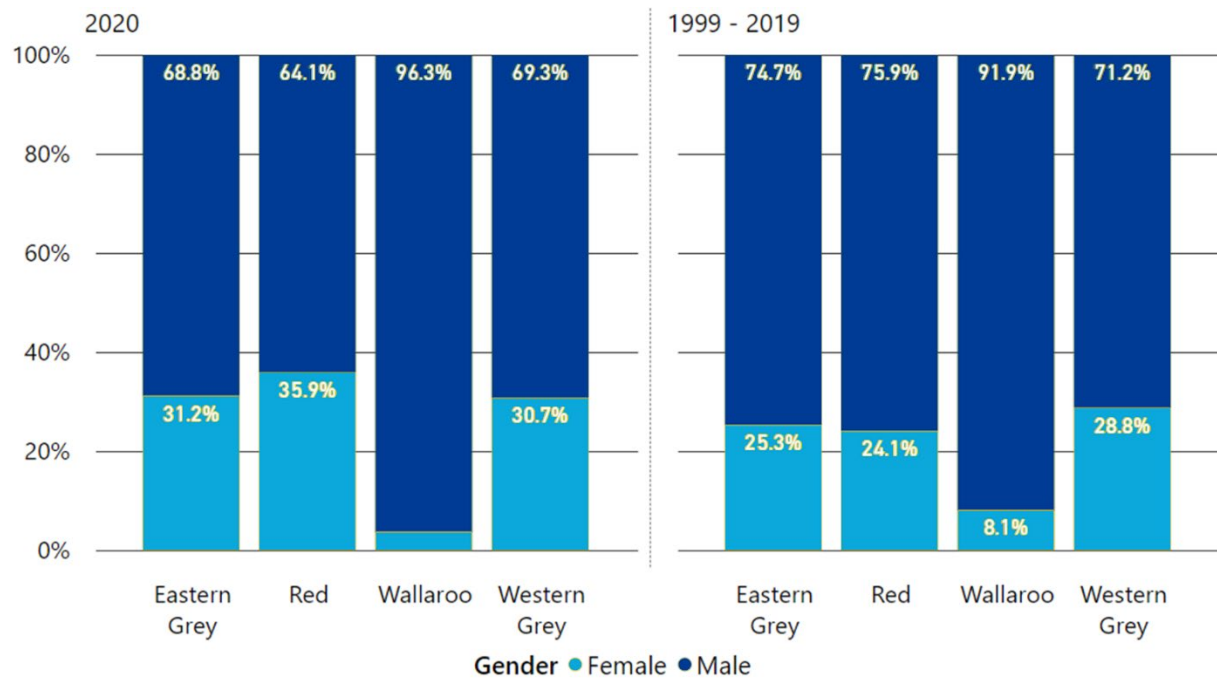


Figure 3 Average gender bias per species in the commercial harvest for 2020 compared with the average of the 21-year period from 1999–2019

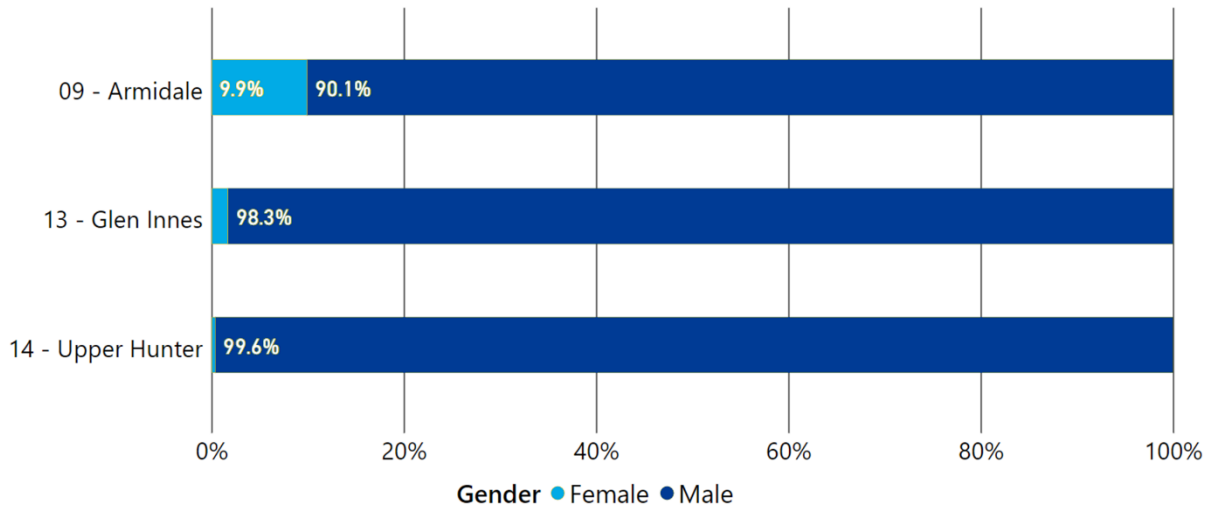


Figure 4 Wallaroo gender bias by zone in the 2020 commercial harvest

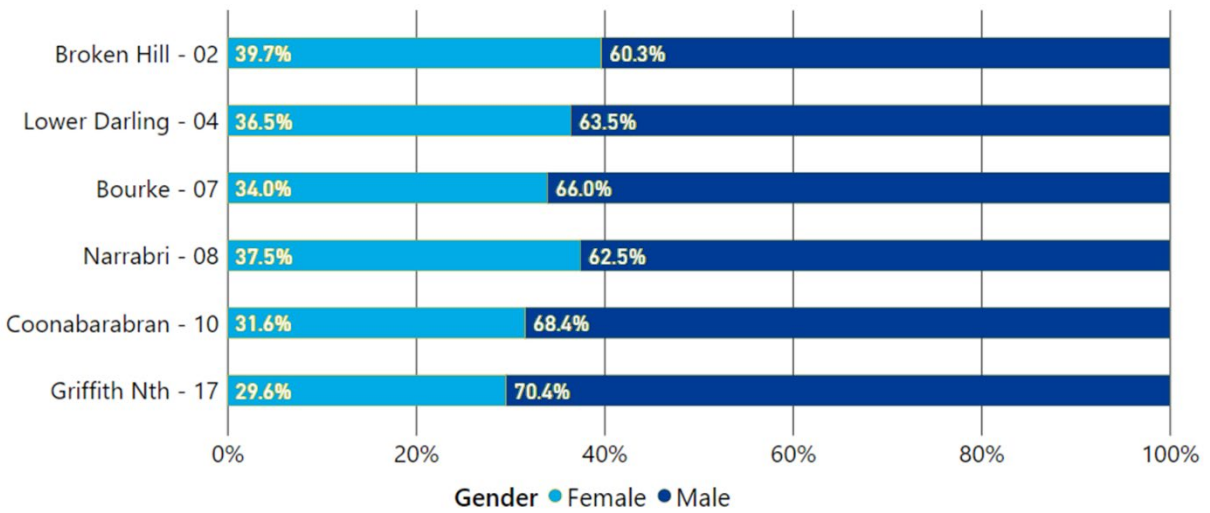


Figure 5 Red kangaroo gender bias by zone in the 2020 commercial harvest

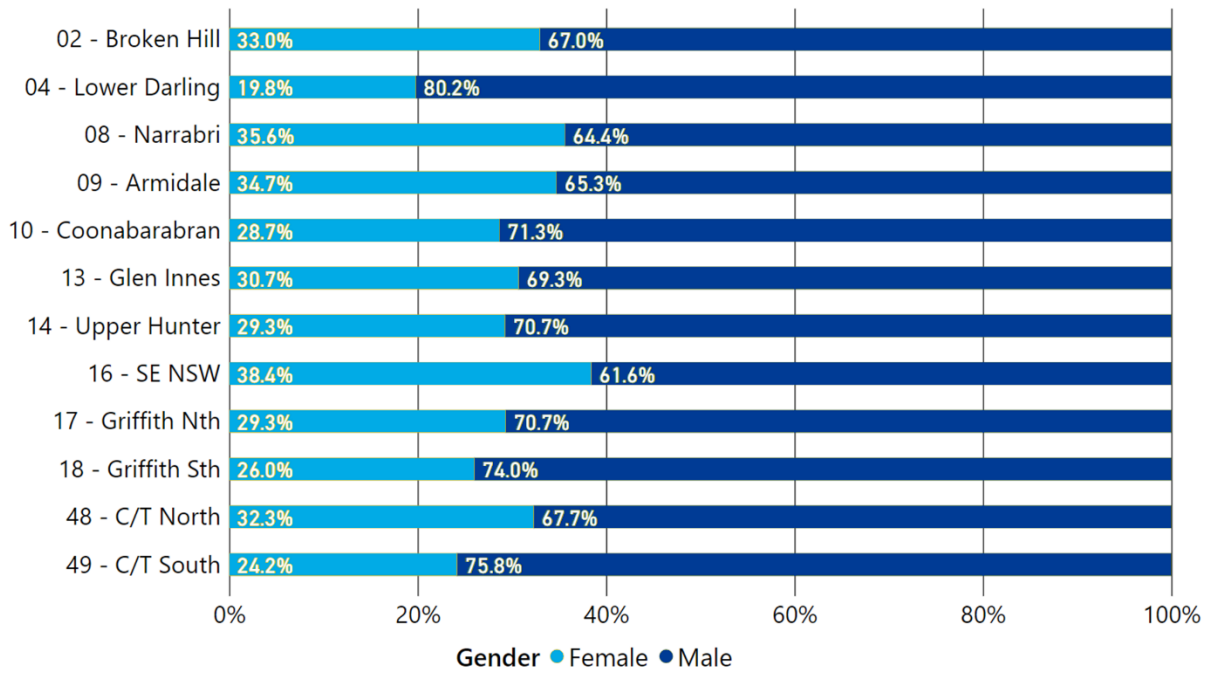


Figure 6 Eastern grey gender bias by zone in the 2020 commercial harvest

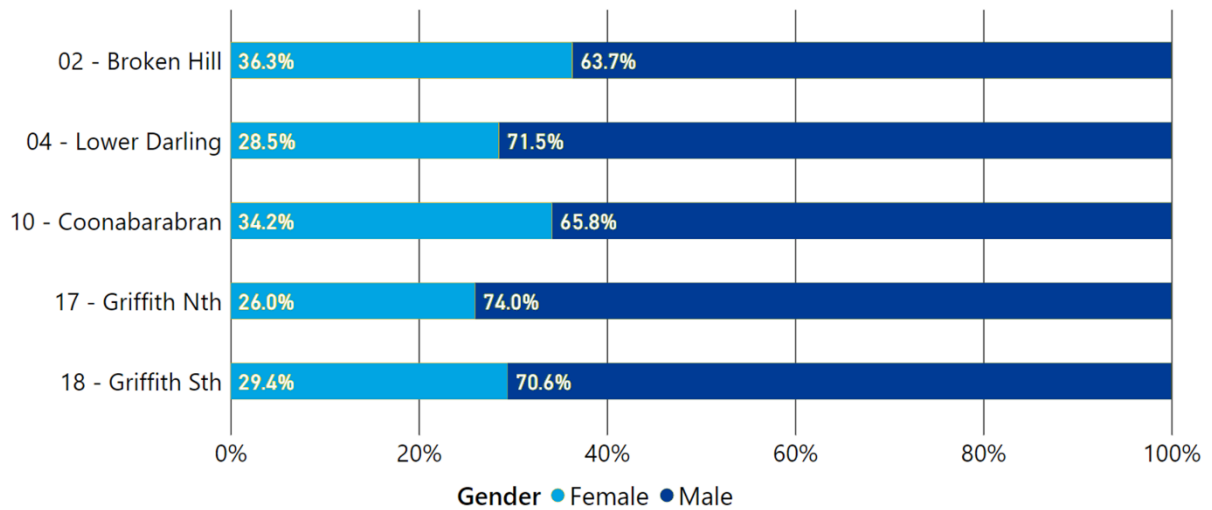


Figure 7 Western grey gender bias by zone in the 2020 commercial harvest

Average weights by species and zone

During 2020, commercial harvest licence conditions required that kangaroo carcasses delivered to chillers for sale were not to weigh less than 14 or 15 kilograms (the two different values reflect differences in the way the carcasses are dressed). Before 1 January 2008, the minimum carcass weights were 12 and 13 kilograms dressed and undressed, respectively. Above these minimum weights, a wide range of weights are consigned by harvesters.

The 21-year average (1999–2019) carcass weights by gender and species (across all zones) are shown in Figure 8. Data collected from harvester returns during 2020 indicate average carcass weight across all species was 28.3 kilograms for males and 19.0 kilograms for females (Table 1); these values are higher than the long-term averages. This is to be expected, given the increase in minimum carcass weight as part of licence conditions.

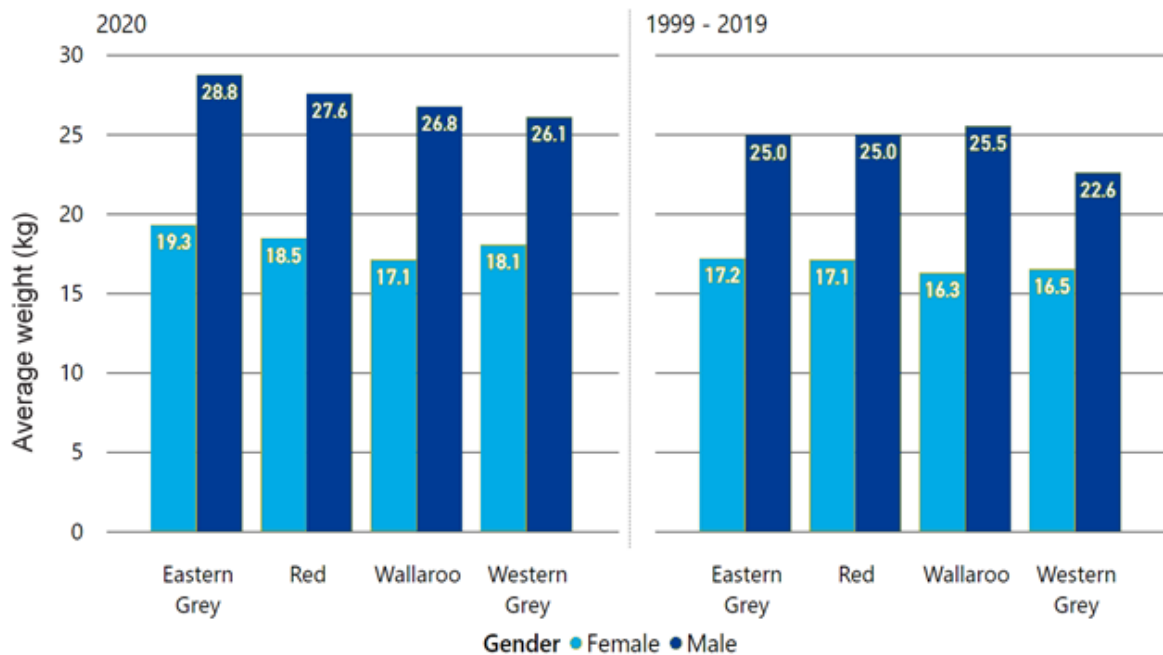


Figure 8 Average weights of male and female carcasses by species for 2020 compared with the average of the previous 21 years (1999–2019)

The department does not require licensees to record individual carcass weights. Instead, harvester returns provide total weights for each category of carcass (e.g. mean weight of female eastern grey kangaroos = total weight of female eastern grey kangaroos divided by the number of female eastern grey kangaroos). These totals are used to calculate the average weights of carcasses by gender, species and zone (Figures 8–12).

For most combinations of species, gender and zone, average carcass weights were reasonably consistent from month to month. In the following charts, no consideration is given to the differences in sample sizes between gender, species and zones.

Where large fluctuations occur, the sample size is usually very small and statistical reliability is lower. This variation is a result of statistical processes and is not a reflection of changes in the kangaroo population. Weights do not vary significantly where larger samples are available.

In the charts that follow, there are a number of months in which no animals of a given gender or species were harvested in a particular zone; this results in missing columns in the charts. For example, in Figure 12 there were no western grey males or females harvested in Griffith South zone in June, July and August 2020.

During routine inspections of chiller premises and processing works, a selection of smaller animals are weighed individually by compliance officers to ensure the minimum weight standards are being maintained. If underweight carcasses are detected, the harvester responsible may be cautioned or fined, depending on the circumstances.

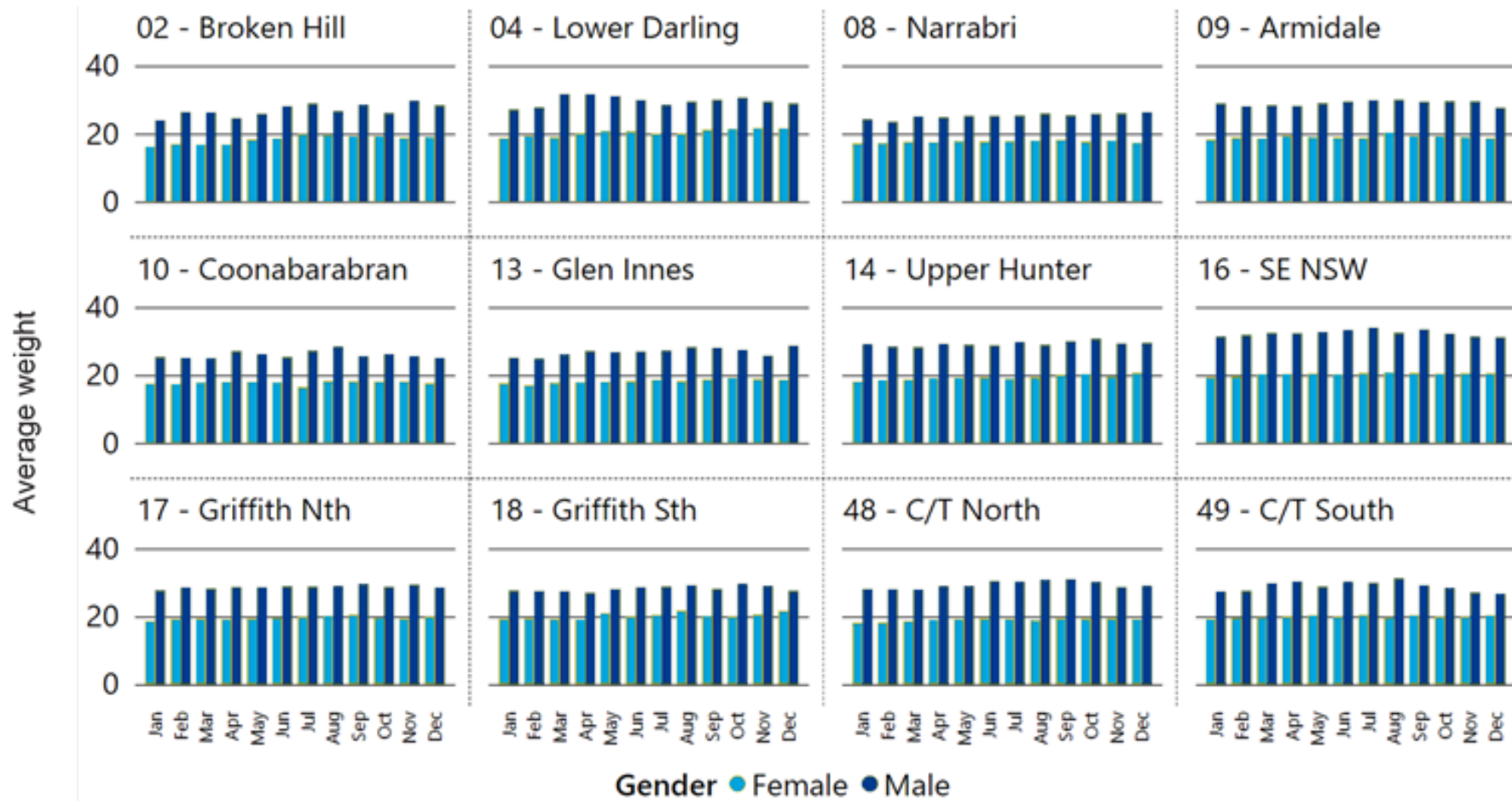


Figure 9 Eastern grey kangaroo male and female average carcass weights for each zone in the 2020 commercial harvest

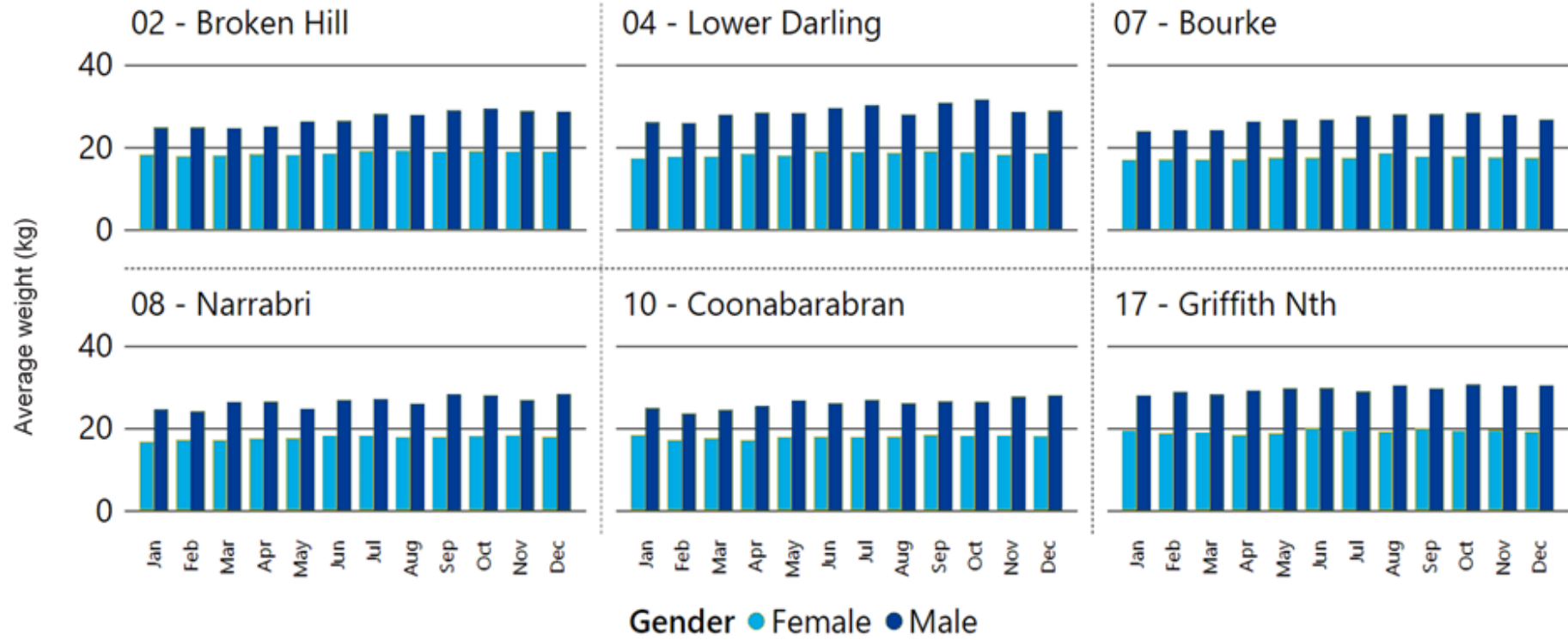


Figure 10 Red kangaroo male and female average carcass weights for each zone in the 2020 commercial harvest

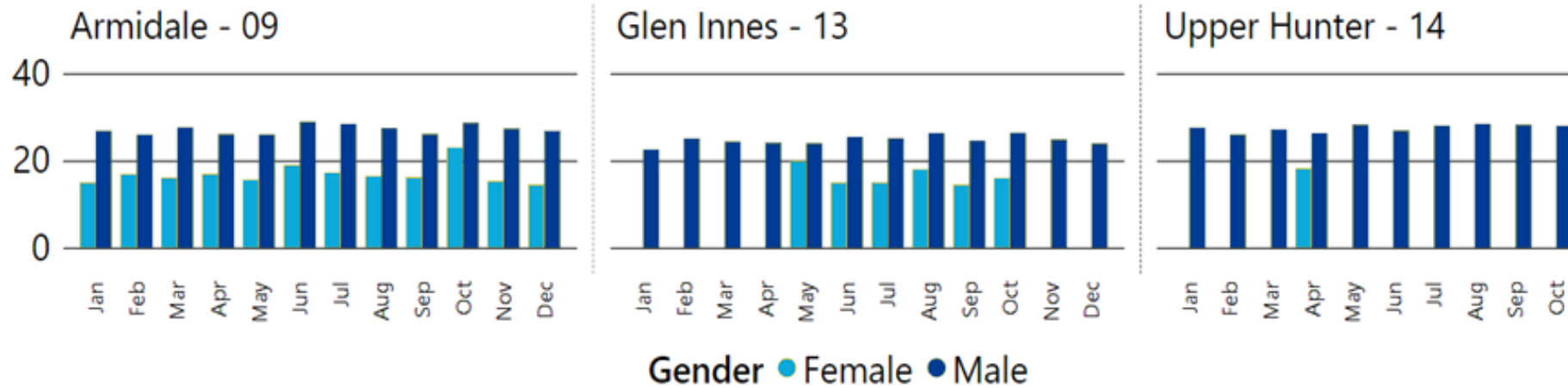


Figure 11 Common wallaroo male and female average carcass weights for each zone in the 2020 commercial harvest

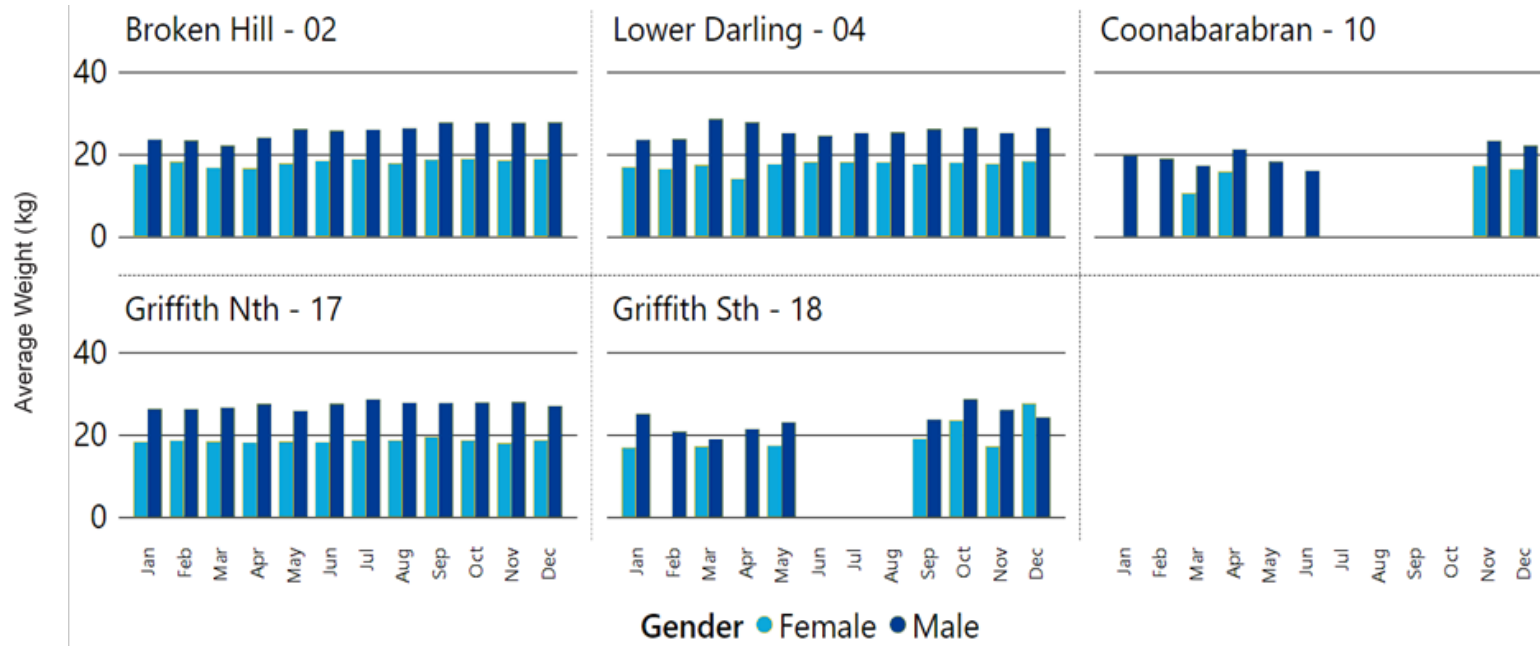


Figure 12 Western grey kangaroo male and female average carcass weights for each zone in the 2020 commercial harvest

Non-commercial culling within the commercial harvest zones

Non-commercial culling licences are available statewide and can be issued for properties where commercial harvesting is also undertaken. The non-commercial cull is highest in those areas where high-value pastures and winter crops are important.

In 2020, licences were issued to cull 222,214 kangaroos within the commercial harvest zones. Licensees who submitted reports indicated 76,463 kangaroos were actually culled from licences authorising culling of up to 160,815 kangaroos. A number of licensees have not yet submitted reports, with these licences authorising culling of up to 61,399 kangaroos. Combining the number reported as culled (where a return has been received = 76,463) with the number authorised to be culled (where a return has not been received = 61,399) gives a **potential non-commercial cull** figure of 137,862 kangaroos.

Potential non-commercial cull by species and by commercial kangaroo management zone is shown in Table 3.

Table 3 Potential non-commercial cull by species and by commercial zone

Zone	Wallaroos	Eastern grey kangaroos	Red kangaroos	Western grey kangaroos	Total
01 – Tibooburra	0	0	0	0	0
02 – Broken Hill	592	1,272	4,193	4,168	10,225
04 – Lower Darling	218	2,094	2,520	2,051	6,883
06 – Cobar	100	450	250	351	1,151
07 – Bourke	0	2,100	2,100	600	4,800
08 – Narrabri	224	7,246	1,980	0	9,450
09 – Armidale	120	2,283	0	0	2,403
10 – Coonabarabran	55	1,600	100	0	1,755
13 – Glen Innes	275	1,873	0	0	2,148
14 – Upper Hunter	375	1,001	40	0	1,416
16 – South East NSW	174	54,077	44	0	54,295
17 – Griffith North	0	6,094	3,017	1,590	10,701
18 – Griffith South	0	8,022	1,174	181	9,377
48 – Central Tablelands North	1,397	10,345	0	0	11,742
49 – Central Tablelands South	92	11,356	30	38	11,516
Totals	3,622	109,813	15,448	8,979	137,862

The highest potential non-commercial cull was in the South East zone at 54,295 kangaroos. This is slightly less than the commercial cull in South East zone in 2020 (57,754) and is 3.2% of the estimated kangaroo population in South East zone. This was also the highest percentage of the estimated population as shown in Table 4.

Table 4 Potential non-commercial cull as a percentage of total kangaroo population

Zone	Total kangaroo population	Potential non-commercial cull	Non-commercial cull percentage
01 – Tibooburra	127,848	0	0.0
02 – Broken Hill	1,450,759	10,225	0.7
04 – Lower Darling	1,069,837	6,883	0.6
06 – Cobar	43,375	1,151	2.7
07 – Bourke	548,819	4,800	0.9
08 – Narrabri	1,112,083	9,450	0.8
09 – Armidale	539,190	2,403	0.4
10 – Coonabarabran	2,036,428	1,755	0.1
13 – Glen Innes	680,065	2,148	0.3
14 – Upper Hunter	210,900	1,416	0.7
16 – South East NSW	1,721,400	54,295	3.2
17 – Griffith North	1,188,747	10,701	0.9
18 – Griffith South	766,854	9,377	1.2
48 – Central Tablelands North	1,728,200	11,742	0.7
49 – Central Tablelands South	933,900	11,516	1.2
Totals	14,158,405	137,862	1.0

The difference in method for calculating potential non-commercial cull figures (based on reports and extrapolation) and commercial cull figures (solely based on reports) should be taken into account when combining data from these two different sources.

Monitoring compliance in the commercial harvest zones

Compliance audits

During 2020 there were 557 licensed commercial harvesters with approximately 2,777 approved landholder consents (some properties may have provided consent to multiple harvesters) for commercial harvesting. In total, 149 chiller premises were registered throughout the commercial harvest zone. There were 17 animal dealers and five skin dealers licensed to process carcasses and skins in New South Wales.

Compliance audits of licensees are performed continuously by the department's compliance officers, as well as monitoring by NSW Food Authority, firearms licensing audits by NSW Police Force and field inspections by departmental regional compliance and regulation officers. Regional compliance and regulation officers inspect carcasses, harvesters' vehicles and equipment, chiller premises and processors for compliance with licence conditions. Licensing staff contributed to compliance by communicating with and educating licensees, assessing applications, compiling reports and reporting suspect activities and irregularities to regional compliance officers.

Regional compliance and regulation officers investigate reports of illegal harvesting activities to the fullest extent possible. During 2020, 93 reports of potential licence breaches and other illegal activity were received, either involving commercial licensees or for commercial purposes. On investigation, several were dismissed because no evidence was found to substantiate the report, or the activities were in fact licensed.

Five multi-agency surveillance and enforcement operations were conducted during 2020 including:

- 3 joint operations with NSW Police Force
- 1 joint operation with NSW Department of Primary Industries Game Licensing Unit
- 1 joint operation with NSW Food Authority.

Information to assist law enforcement, including compliance with the *Biodiversity Conservation Act 2016* (BC Act), *Firearms Act 1996* and *Food Act 2003*, is shared as required with NSW Police Force, NSW Food Authority, the Australian Department of Agriculture, Water and the Environment and interstate fauna protection agencies, within the boundaries of NSW privacy legislation. For example, from late 2020, a monthly report detailing licensed professional kangaroo harvesters and registered chiller premises has been supplied to NSW Police Force.

Reports involving matters related to food safety were referred to NSW Food Authority in accordance with the memorandum of understanding between the department and NSW Food Authority. Activities involving non-commercial shooting were referred to the relevant NSW National Parks and Wildlife Service (NPWS) office.

Inspections of premises

Regional compliance officers and NSW Food Authority compliance staff inspected chillers in commercial kangaroo management zones for:

- non-head-shot carcasses
- underweight carcasses
- valid tags
- correctly affixed tags (correct species and zone)
- untagged carcasses
- display of premises registration number and certificate
- presence of other animal carcasses.

Harvester vehicles are checked opportunistically for:

- appropriate NSW Food Authority registration (for either human consumption or pet food)
- correct set-up and fit-out (in accordance with a NSW Food Authority memorandum of understanding)
- untagged and underweight carcasses.

Harvesters are also checked to ensure they are carrying a kangaroo harvester's licence issued under the BC Act.

During 2020, there were 149 chiller premises registered. A total of 364 chiller inspections, 27 animal dealer processing works inspections and five skin dealer processing works inspections were conducted by the Department during 2020.

In addition to routine chiller inspections, regional compliance officers investigated instances of non-head-shot kangaroo carcasses originating in New South Wales and reported by animal dealers.

Penalty infringement notices

Issuing verbal cautions, written warnings, or infringement notices is at the discretion of the regional compliance officer, in accordance with the department's Compliance Policy (2018). Compliance teams investigated a total of 93 matters. Although cautions do not attract penalties, they are recorded and taken into account in any future compliance considerations and risk assessment procedures. Table 5 summarises compliance response outputs for 2020.

Table 5 Compliance outputs 2020

	Advisory letter	Official caution	Warning letter	Penalty infringement notice	Total
Non-head shot		4	3	1	8
Underweight carcasses		16		5	21
Untagged carcasses	1	3	2	5	11
Incorrect species tagged carcasses				1	1
Use of expired tags			1		1
Fail to return expired tags		1		1	2
Harvest without landholder consent			1		1
Unsubmitted returns				1	1
Delay or obstruct authorised officer				1	1
Incorrect display on chiller	4		2	4	10
All other breach of licence conditions	1		2	1	4
Total	6	24	11	20	61

Licence cancellations

In the 2020 licensing year, three harvesters were asked to show cause as to why the department should not cancel their licence. Of these harvesters, one licence was cancelled, one expired before further action could be taken, and one was not cancelled.

Prosecutions

One prosecution was commenced in 2020.

Other factors affecting the commercial harvest in 2020

Reduced or suspended quotas

A number of zones or species in a zone had reduced or suspended quotas in 2020. These are listed in Table 6. The zone quota is reduced to 10% of the population estimate when the population falls 1.5 standard deviations below the long-term average. The zone is closed when the population estimate is two standard deviations below the long-term average.

Table 6 Zones with reduced or suspended quota in 2020

Zone	Species	Status
06 – Cobar	Eastern grey	Closed
	Western grey	Closed
	Red kangaroo	Closed
07 – Bourke	Eastern grey	Closed
	Western grey	Closed
	Red kangaroo	Open
01 – Tibooburra	Red kangaroo	Closed
	Eastern grey	Open
	Western grey	Reduced (10% quota)
18 – Griffith South	Red kangaroo	Closed
	Eastern grey	Open
	Western grey	Open

Carcass price

Prices paid by dealers to harvesters for kangaroo carcasses reached record levels in late 2020 with \$1.30–1.40 per kilogram being paid. This was likely to result from several factors, including sustained dealer demand, improved competition, and decreased supply. Supply decreased largely due to wet weather, lower numbers due to drought and, to a lesser extent, COVID-19 impacts on harvesters.

Online licensing system enhancements

Significant work was done throughout 2020 on the Wildlife Management System that is used to manage licences, tags, landholder consents and returns. This has resulted in substantial improvements to the function of the system, including a successful 2021 licence renewals process with minimal problems for licensees.

Historical data inaccuracies

Throughout 2020 a number of inconsistencies have been discovered in historical data. The department is improving processes for the calculation, storage and publication of population, quota and harvest data to help minimise the incidence of this in future. The department is also planning to review historical population, quota and harvest data and republish this on the website in a more accessible format.

Research involvement in 2020

Apart from annual population surveys, no research projects were completed by the Kangaroo Management Program in 2020.

Appendix A: Progress against performance indicators in 2020

Management action and method	Performance indicators	Progress in 2020
Objective 1: To ensure animals are harvested or euthanased using humane methods		
<p>Implement the National Code of Practice for the Humane Shooting of Kangaroos and Wallabies for Commercial Purposes across all harvesting activity.</p> <p>Method</p> <p>Monitor requirements including:</p> <ul style="list-style-type: none"> firearms licence accreditation under national code of practice competency in firearms accuracy self-reporting of non-compliance risk-based approach to auditing compliance. 	<p>1. Implementation indicators: 100% of licence holders have met shooter competency standards</p> <ol style="list-style-type: none"> reports received from chiller operators weekly results of weekly reports assessed for any non-compliances compliance response for identified non-compliances proportionate to the risk to program objectives. 	<ol style="list-style-type: none"> Complete. Harvesting licences are only issued to harvesters that meet the required competency standards. Partially complete. 92.1% of weekly chiller returns were received. Additional efforts will be undertaken in 2021 to increase this as close to 100% as possible. Ongoing. Analysis and reporting platform developed to assist in identifying anomalies and potential non-compliance. Non-compliances were reported to compliance teams for appropriate action.
<p>Reports through the memorandum of understanding with the Australian Government Department of Agriculture, Water Resources and the Environment Meat Exports Branch.</p> <p>Method</p> <p>Department inspects kangaroo carcasses before being exported.</p>	<p>2. The department reports non-compliance events annually and applies risk assessment to reported breaches. Regional compliance branches monitor reports and respond consistent with the compliance framework.</p>	<p>Breaches were managed in accordance with the department's Compliance Policy.</p>
<p>Department inspects kangaroo carcasses in chiller premises while performing routine chiller inspections.</p>	<p>3. The department reports non-compliance events annually and applies risk assessment to reported breaches and reports breaches to the NSW Food Authority.</p>	<p>All non-compliance incidents were reported and assessed under the risk framework. In accordance with the memorandum of understanding, all NSW Food Authority related offences were reported to the Authority.</p>
<p>Non-compliance reports received through NSW Environment Line.</p> <p>Method</p>	<p>4. The department reports non-compliance events annually and</p>	<p>All Environment Line reports were recorded on the compliance case management system, and risks</p>

Management action and method	Performance indicators	Progress in 2020
Breaches reported to the department are prioritised and assessed using a risk management assessment tool.	applies risk assessment to reported breaches.	assessed and managed by the relevant compliance team.
Self-reporting from industry professionals. Method Apply risk assessment methods.	5. Reports received are prioritised using the compliance risk assessment framework and investigated.	All reports were recorded in the compliance case management system, risk assessed and managed by the relevant compliance team.
Inspect each chiller premises once per year. Method Routine inspections consistent with department safety protocol.	6. Inspections and breaches reported annually.	There were 364 chiller inspections undertaken during 2020. Across the 149 chillers registered, this is an average of 2.4 inspections per chiller for the 2020 year. All chillers were inspected at least once during 2020. Job safety assessments (JSAs) and job safety briefings (JSBs) were reviewed and implemented for inspections.
Inspect every processing plant three times per year. Method Routine inspections consistent with The department safety protocol.	7. Inspections and breaches reported annually.	There were 27 kangaroo and 5 skin processing works inspections undertaken during 2020, across the 23 licensed dealers. This is an average of 1.1 inspections per licensed dealer for the 2020 year. All processing works in the NSW commercial zone were inspected during 2020. JSAs and JSBs were reviewed and implemented for chiller and processing work inspections.
Conduct two field audits of licensed harvesters per year. Method Routine inspections consistent with The department safety protocol.	8. Inspections and breaches reported annually.	Harvester field audits were not conducted in 2020 due to work health and safety risks. Increased effort has been placed on chiller inspections in place of the harvester field audits.
Objective 2: To ensure the commercial harvest is ecologically sustainable		
Population monitoring. Method Annual aerial surveys.	9. 100% of surveys conducted by 30 November (annually or triennially as relevant).	Complete. In 2020 aerial surveys of Western Plains were conducted in June, July and August. Helicopter surveys of Central Tablelands management zones were completed in September. Population estimates

Management action and method	Performance indicators	Progress in 2020
<p>Quota set each year as a percentage of kangaroo population.</p> <p>Method Quota percentage set for each species and calculated for each management zone based on population estimates.</p>	<p>10. Quotas commence 1 January each year, and harvest does not exceed allocations as stated in quota reports.</p>	<p>were made available via the Commercial kangaroo management webpage in November 2020.</p> <p>Approved quotas commenced on 1 January 2020. Harvest did not exceed quotas in any zone in 2020.</p>
<p>Restriction of harvest area (no-harvest sanctuaries).</p> <p>Method Harvesting is permitted only on private land.</p>	<p>11. 100% of harvest returns specify the private land where the kangaroo was harvested.</p>	<p>Harvesting was permitted only on private land.</p>
<p>Risk assessment of species through harvest data.</p> <p>Method Analysis of kangaroo data from harvesters (weight, sex, number) per zone.</p>	<p>12. Data analysis indicators:</p> <ul style="list-style-type: none"> a. all required data captured b. all data analysed c. kangaroo population statistics are compared against thresholds to measure whether kangaroo populations are within normal range d. action taken, including possible suspension of harvest, if population statistics show trends below thresholds. 	<ul style="list-style-type: none"> a. Harvester returns were monitored. 98.4% of harvester monthly returns have been submitted at the time of drafting this report. Efforts to increase this to 100% will be prioritised in 2021. b. Monthly allocation and harvest reports for each commercial zone and species were produced and published on the department's website. This annual report provides an analysis of the return data for the 2020 licensing year. c. Complete. (Refer to density estimate and threshold tables in 2020 Quota Report). d. Complete. See Table 6 for zones and species that had reduced or suspended quotas in 2020.
<p>Maintenance of population within thresholds.</p> <p>Method Tags allocated in accordance with quotas only. Quarterly returns to monitor actual take against quota numbers.</p>	<p>13. Actual take and tag allocations are kept within quota allocations.</p>	<p>Monthly allocation and harvest reports were completed and published on the department's website. Harvest did not exceed the quota for any zone in 2020.</p>

Management action and method	Performance indicators	Progress in 2020
<p>Regular review and adaptive program management.</p> <p>Method</p> <p>Aspects of the harvest, including population size, population trends, species health, and harvester compliance, are reviewed annually against performance indicators.</p> <p>Relevant data are required to be submitted from harvesters and chiller operators.</p> <p>Data is analysed and compared against performance indicators.</p> <p>The harvest program is adjusted annually in accordance with population monitoring.</p> <p>The Kangaroo Management Plan is reviewed and re-submitted for assessment by the Australian Government and public comment before approval by the Minister for Environment and Heritage at least 12 months before its expiry.</p>	<p>14. Review indicators:</p> <ul style="list-style-type: none"> a. 100% of harvester returns are received each quarter b. annual report prepared and submitted to the Australian Government Department of Agriculture, Water and the Environment, and published on the NSW Department of Planning, Industry and Environment kangaroo management webpages by 31 March each year c. Commercial Kangaroo Harvest Management Plan is reviewed in 2021 or as required, including in the event of legislative change. 	<ul style="list-style-type: none"> a. Harvester returns were monitored. 98.4% of harvester monthly returns have been submitted at the time of drafting this report. Efforts to increase this to 100% will be prioritised in 2021. b. 2019 Annual Report completed and published on the department's webpage. c. 2020 Annual Report partially complete: provided to the Australian Government department as a draft report by 31 March 2021. Completion of this report was delayed slightly due to efforts to increase 2020 harvester returns. d. The Commercial Kangaroo Harvest Management Plan is being reviewed and a new plan is being drafted to submit to the Australian Government Department by June 2021 for review, exhibition and approval before the commencement of the 2022 licensing year.
<p>Triggers to suspend the harvest if population declines, or if population health is declining.</p> <p>Method</p> <p>Reducing or ceasing the harvest as needed to maintain population sustainability or health (managed through the tag allocation system).</p>	<p>15. All relevant quotas suspended if populations are below thresholds.</p>	<p>Complete. See Table 6 for zones and species that had reduced or suspended quotas in 2020.</p>
<p>Implementation of a risk-based compliance program. Audit of compliance program undertaken periodically to ensure confidence in the program.</p> <p>Method</p> <p>The department will implement proactive compliance, including analysing data and intelligence to apply a risk-based approach to compliance.</p> <p>The department will assess reports of non-compliance and take a compliance response to confirmed non-</p>	<p>16. Compliance indicators:</p> <ul style="list-style-type: none"> a. all allegations of non-compliance assessed for risk to program objectives, and investigated as required b. all self-reports of non-compliance assessed for risk to program objectives and investigated as required 	<ul style="list-style-type: none"> d. Complete. All reports of non-compliance were reported to regional compliance and regulatory officers for risk assessment and investigation. e. Complete. All self-reports of non-compliance were assessed for risk, and appropriate responses taken. f. An internal audit of the Kangaroo Management Program was undertaken in 2018–19. Recommendations are being used to inform program improvements.

Management action and method	Performance indicators	Progress in 2020
<p>compliances that is commensurate with the level of risk of the non-compliance.</p> <p>Audit team to periodically audit higher risk aspects of the program.</p> <p>Self-reporting of non-compliance is a licence condition for harvesters and chiller operators.</p>	<p>c. at least one audit program undertaken in the period covered by this plan.</p>	<p>A new compliance strategy was developed in late 2020 to guide efforts to enhance compliance over the next three to five years. The strategy addresses some of the recommendations from the internal audit.</p>
<p>Special kangaroo harvest quotas are set.</p> <p>Method</p> <p>Use in accordance with the provisions of the <i>NSW Commercial Kangaroo Harvest Management Plan 2017–2021</i> (Section 5.2).</p>	<p>17.If a special quota is used it will be reported in the annual report and quota report.</p>	<p>No special quota was used in 2020.</p>
<p>Department commitment: Engage with community and industry stakeholders to ensure the objectives of this plan are met</p>		
<p>Proactive engagement with community and industry stakeholders.</p> <p>Method</p> <p>Engage with Kangaroo Management Advisory Panel (KMAP) members representing the range of stakeholder interests, to be appointed by the Coordinator-General, Environment, Energy and Science.</p> <p>Engage with KMAP on the preparation of the annual report and quota report, and other items as required.</p>	<p>18.KMAP meetings at least twice a year.</p>	<p>KMAP meetings were held in April and November 2020 and regular updates were provided throughout 2020.</p> <p>KMAP was consulted regarding the: review of the Commercial Kangaroo Harvest Management Plan and the development of the new plan 2019 Annual Report 2021 Quota Report.</p>
<p>Provide regular up-to-date information on the department's website.</p> <p>Method</p> <p>Maintain an active role in web-based and manual delivery of information.</p>	<p>a. Annual report and quota report uploaded to the kangaroo management webpage, and other relevant documents made accessible as required.</p>	<p>The 2019 Annual Report and 2021 Quota Report were published on the department's website in 2020.</p> <p>Monthly harvest and allocation reports were published on the department's website throughout 2020.</p>

More information

- [2020 Quota Report](#)
- [Allocation and harvest reports](#)
- [Compliance Policy](#)
- [Kangaroo management plans, reports and research](#)
- [Wallaroo quota correction](#)