



Department of Planning and Environment

2021 Annual Report

New South Wales Commercial Kangaroo Harvest
Management Plan 2017-2021



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Cover photo: Kangaroo, Oolambeyan National Park. John Spencer/DPE

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ISBN 978-1-922767-78-3
EES 2022/0201
April 2022

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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 fifth year (2021), as required by performance indicator 14b of the Plan. Appendix A describes each performance indicator and the progress made against it during 2021.

The following information is presented:

- actual harvest, by zone and species, compared with the approved quotas
- details of any special quota used (see page 7 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 2021 Quota Report, available from the kangaroo management plans, reports and research webpage.

Actual harvest in 2021 by zone and species

The 2021 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 2021

Zone	Population (p)	Quota (q)	Harvest	% p	% q	% harvest male	Av. wt. (F)	Av. wt. (M)
49 - C/T South	488,270	73,240	22,770	4.7	31.1	75.9	20.2	28.9
48 - C/T North	777,350	116,602	25,847	3.3	22.2	70.4	19.4	30.4
18 - Griffith Sth	625,287	98,863	57,634	9.2	58.3	77.3	20.2	29.3
17 - Griffith Nth	547,321	84,621	50,157	9.2	59.3	71.6	19.7	30.0
16 - SE NSW	1,721,400	258,210	56,320	3.3	21.8	58.0	20.4	31.5
14 - Upper Hunter	210,900	31,635	20,931	9.9	66.2	76.7	19.5	30.3
13 - Glen Innes	680,065	102,010	20,188	3.0	19.8	73.3	18.5	29.0
10 - Coonabarabran	1,043,142	159,512	60,361	5.8	37.8	73.8	18.0	27.4
09 - Armidale	539,190	80,879	31,315	5.8	38.7	68.1	19.0	29.6
08 - Narrabri	936,243	143,128	22,762	2.4	15.9	69.1	18.0	27.5
07 - Bourke	159,477	15,947	11,268	7.1	70.7	75.6	17.6	27.6
06 - Cobar	146,689	21,843	3,971	2.7	18.2	72.5	17.7	27.8
04 - Lower Darling	898,441	146,442	46,608	5.2	31.8	75.6	18.6	28.7
02 - Broken Hill	1,478,884	245,783	64,857	4.4	26.4	65.3	18.6	27.8
01 - Tibooburra	207,324	20,046	2,296	1.1	11.5	65.3	18.4	28.8
Total	10,459,983	1,598,761	497,285	4.8	31.1	70.7	19.2	29.0

C/T: Central Tablelands

Average weights are in kilograms.

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 in 2021. This shows the Broken Hill zone contributed the highest number of kangaroos, with 13% of the total harvest. It also shows there were very low numbers of kangaroos harvested in Tibooburra and Cobar zones.

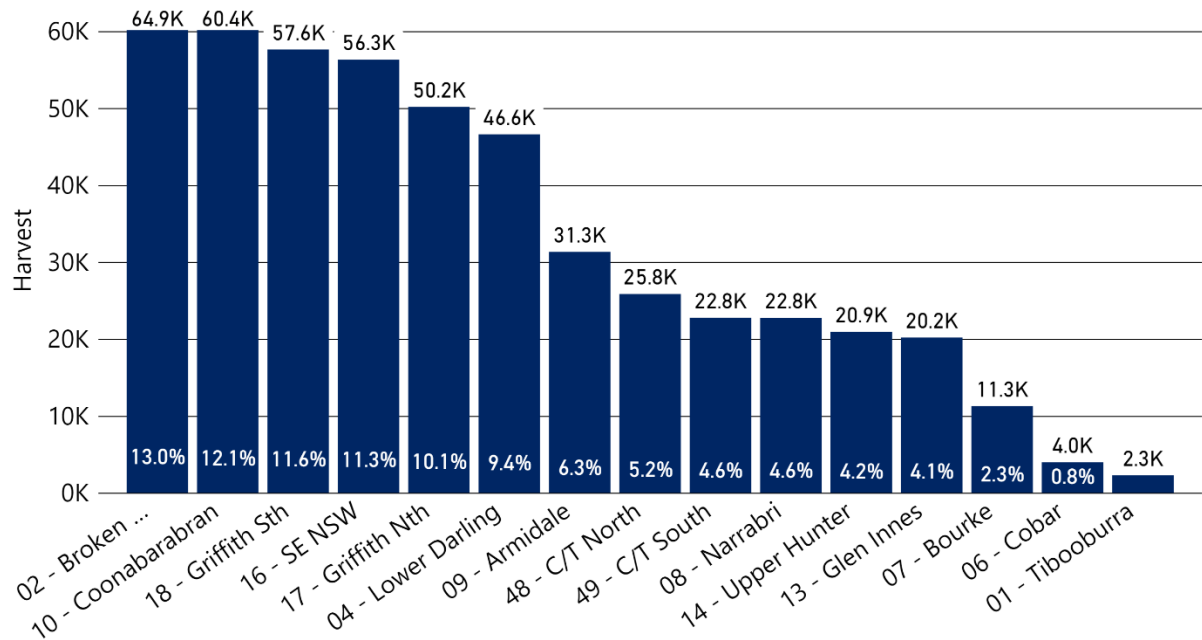


Figure 1 Total harvest and percentage contribution to the 2021 harvest for each zone

Table 2 lists the details of the 2021 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 2021

Zone	Population (p)	Quota (q)	Harvest	%p	%q	% harvest male	Av. wt (F)	Av. wt (M)
Eastern grey								
01 - Tibooburra	5,487	0	0	0.0	0.0	0.0	0.0	0.0
02 - Broken Hill	118,192	17,729	1,685	1.4	9.5	72.3	19.6	29.3
04 - Lower Darling	97,538	14,631	12,508	12.8	85.5	83.6	20.4	28.8
06 - Cobar	18,568	1,857	1,089	5.9	58.6	69.2	17.4	27.6
07 - Bourke	25,731	2,573	1,036	4.0	40.3	78.1	17.5	28.2
08 - Narrabri	738,318	110,748	16,521	2.2	14.9	69.4	18.0	27.3
09 - Armidale	421,900	63,285	28,956	6.9	45.8	65.9	19.0	29.7
10 - Coonabarabran	828,714	124,307	45,513	5.5	36.6	73.7	18.0	27.1
13 - Glen Innes	545,200	81,780	18,266	3.4	22.3	70.8	18.5	29.3
14 - Upper Hunter	166,500	24,975	17,337	10.4	69.4	72.0	19.5	30.5
16 - SE NSW	1,721,400	258,210	56,320	3.3	21.8	58.0	20.4	31.5
17 - Griffith Nth	349,564	52,435	31,076	8.9	59.3	71.7	19.9	29.7
18 - Griffith Sth	308,590	46,288	42,626	13.8	92.1	76.9	20.6	29.3
48 - C/T North	777,350	116,602	25,847	3.3	22.2	70.4	19.4	30.4
49 - C/T South	488,270	73,240	22,770	4.7	31.1	75.9	20.2	28.9
Eastern grey total	6,611,322	988,660	321,550	4.9%	32.5%	70.3%	19.5	29.4
Red								
01 - Tibooburra	200,465	20,046	2,296	1.1	11.5	65.3	18.4	28.8
02 - Broken Hill	1,197,474	203,571	54,864	4.6	27.0	65.3	18.6	27.7
04 - Lower Darling	583,802	99,246	23,886	4.1	24.1	74.2	18.4	29.2

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Zone	Population (p)	Quota (q)	Harvest	%p	%q	% harvest male	Av. wt (F)	Av. wt (M)
06 - Cobar	102,480	17,422	2,135	2.1	12.3	74.3	18.2	28.3
07 - Bourke	117,975	11,797	10,015	8.5	84.9	75.3	17.6	27.5
08 - Narrabri	190,468	32,380	6,241	3.3	19.3	68.2	18.0	27.9
10 - Coonabarabran	152,052	25,849	14,103	9.3	54.6	74.3	18.1	28.2
17 - Griffith Nth	126,160	21,447	14,290	11.3	66.6	70.5	19.3	30.6
18 - Griffith Sth	253,492	43,094	14,278	5.6	33.1	78.3	19.1	29.2
Red total	2,924,368	474,852	142,108	4.9%	29.9%	70.5%	18.5	28.5
Wallaroo								
09 - Armidale	117,290	17,594	2,359	2.0	13.4	95.0	18.6	28.2
13 - Glen Innes	134,865	20,230	1,922	1.4	9.5	97.3	18.5	27.1
14 - Upper Hunter	44,400	6,660	3,594	8.1	54.0	99.6	19.5	29.7
Wallaroo total	296,555	44,484	7,875	2.7%	17.7%	97.7%	18.6	28.6
Western grey								
01 - Tibooburra	1,372	0	0	0.0	0.0	0.0	0.0	0.0
02 - Broken Hill	163,218	24,483	8,308	5.1	33.9	63.5	18.7	27.8
04 - Lower Darling	217,101	32,565	10,214	4.7	31.4	69.1	18.0	27.4
06 - Cobar	25,641	2,564	747	2.9	29.1	72.0	17.2	26.4
07 - Bourke	15,771	1,577	217	1.4	13.8	75.6	17.9	28.6
08 - Narrabri	7,457	0	0	0.0	0.0	0.0	0.0	0.0
10 - Coonabarabran	62,376	9,356	745	1.2	8.0	67.2	16.8	26.2
17 - Griffith Nth	71,597	10,739	4,791	6.7	44.6	74.1	19.8	30.0
18 - Griffith Sth	63,205	9,481	730	1.2	7.7	78.2	19.2	28.6

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Zone	Population (p)	Quota (q)	Harvest	%p	%q	% harvest male	Av. wt (F)	Av. wt (M)
Western grey total	627,738	90,765	25,752	4.1%	28.4%	68.5%	18.5	28.0
Total all species	10,459,983	1,598,761	497,285	4.8	31.1	70.7	19.2	29.0

The proportion of the total harvest that is made up by each species is shown in Figure 2. It illustrates that 65% of the kangaroos harvested in 2021 were eastern grey kangaroos. Wallaroos contributed to 1.6% of the total harvest in 2021.

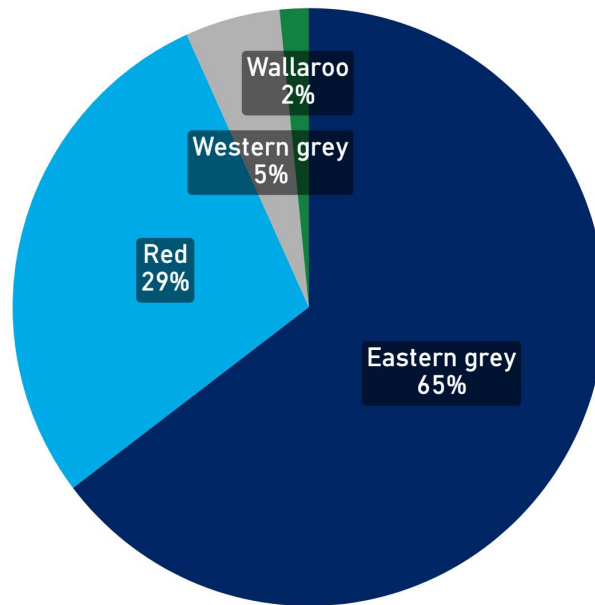


Figure 2 Percentage contribution to the total harvest made by each of the four commercially harvested species (note that percentages don't total 100 due to rounding)

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.

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 2021.

Gender bias by species and zone

Harvesting is typically biased toward male animals because they are larger, heavier and provide a better return, as harvesters are paid a price per kilogram. For the 22-year period 1999 to 2020, the average proportion of males harvested was 74.4% for eastern greys 75.7% for red kangaroos, 92.0% for wallaroos and 71.2% for western greys (Figure 3). These percentages vary between years. In 2021 smaller percentages of eastern greys (70.3%), red kangaroos (70.5%) and western greys (68.5%) were harvested when compared with the average of the previous 22 years. In contrast, the percentage of the wallaroo harvest (97.7%) that was males was significantly higher than the 22-year average.

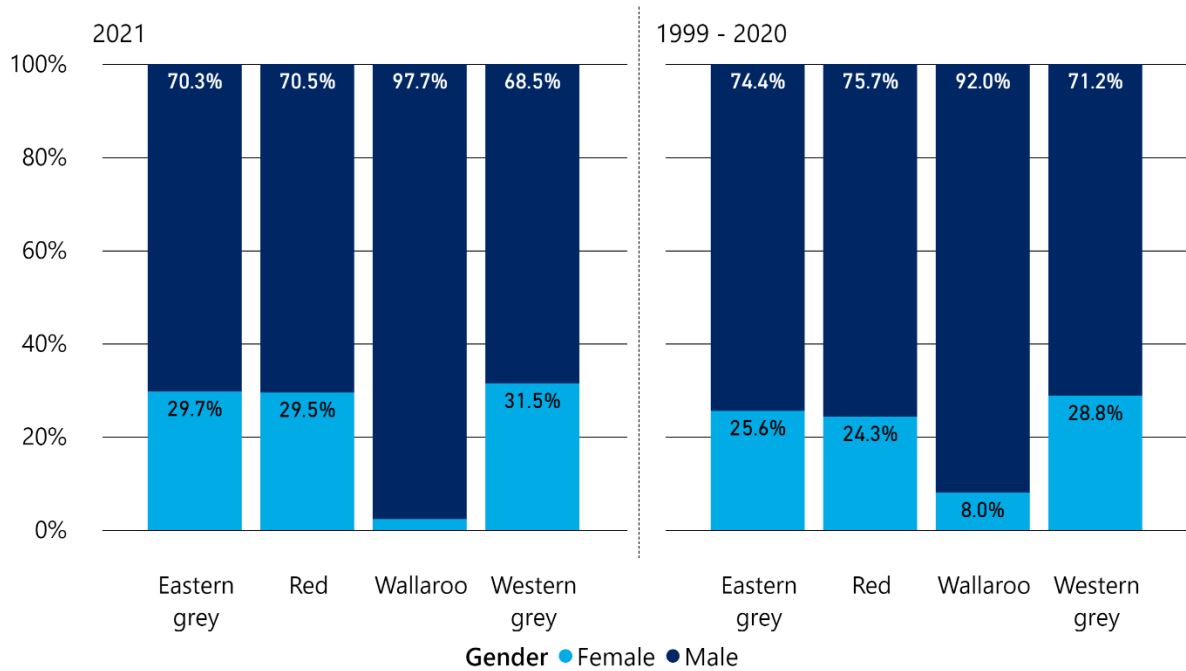


Figure 3 Average gender bias per species in the commercial harvest for 2021 compared with the average of the 22-year period from 1999-2020

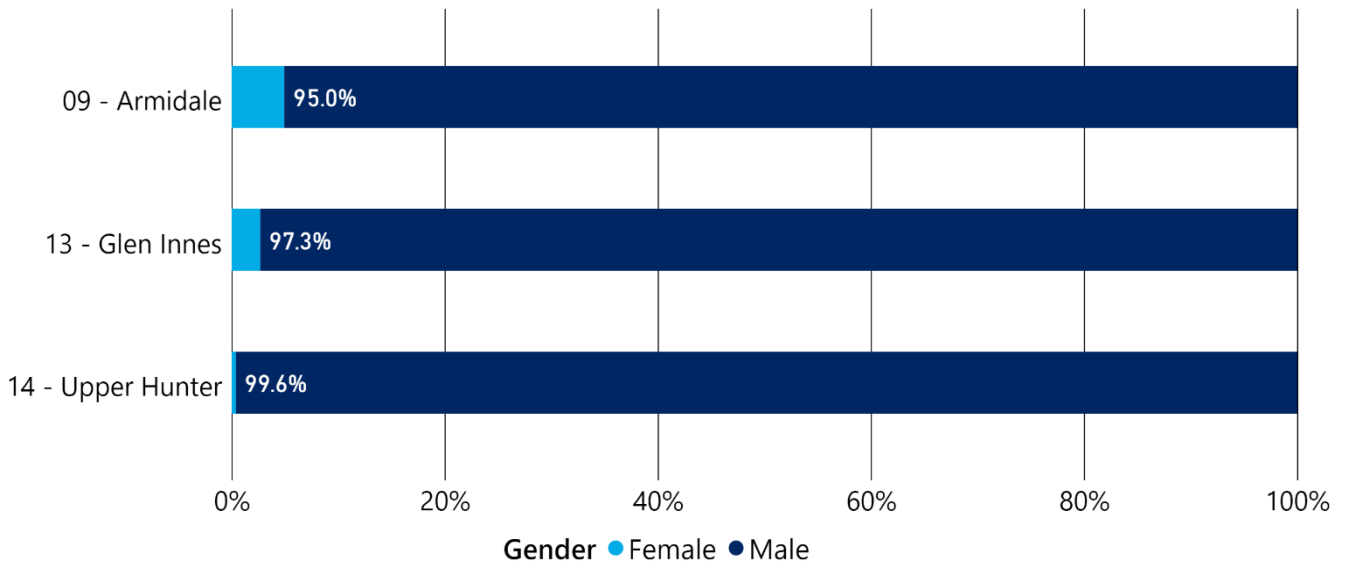


Figure 4 Wallaroo gender bias by zone in the 2021 commercial harvest

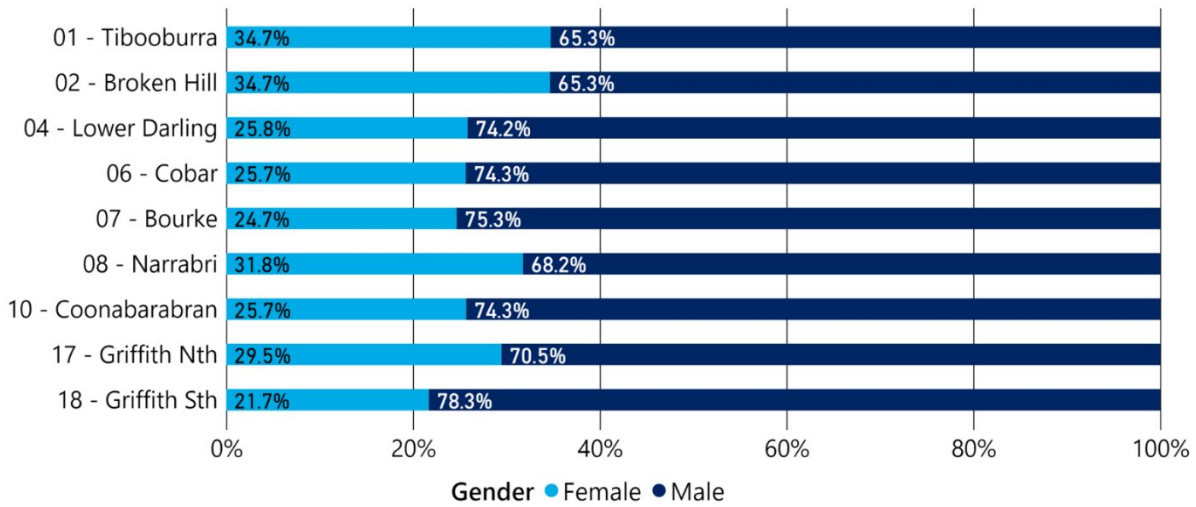


Figure 5 Red kangaroo gender bias by zone in the 2021 commercial harvest

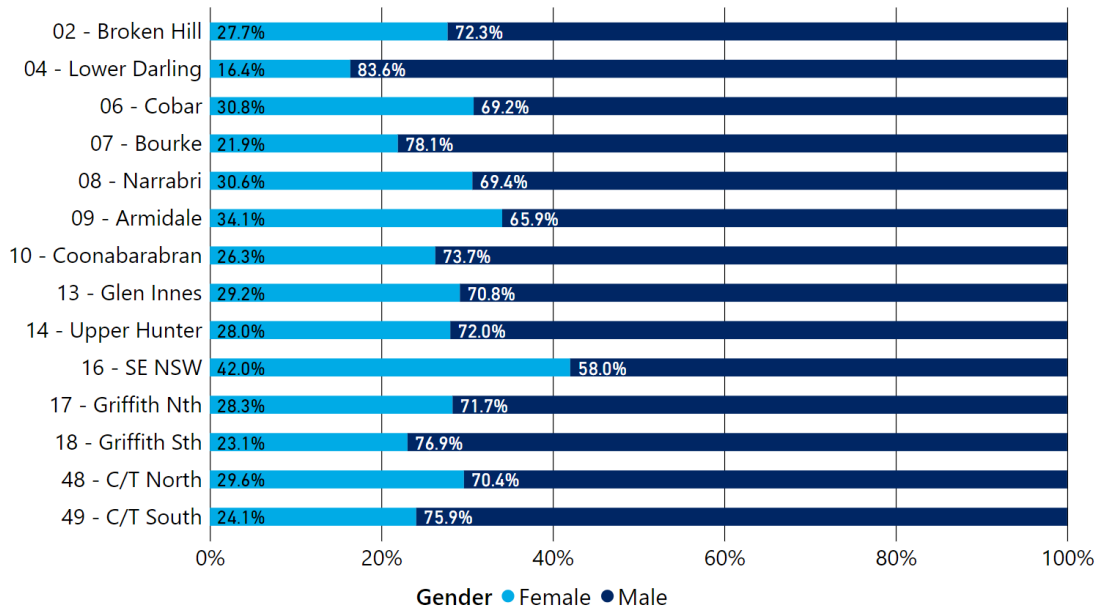


Figure 6 Eastern grey gender bias by zone in the 2021 commercial harvest

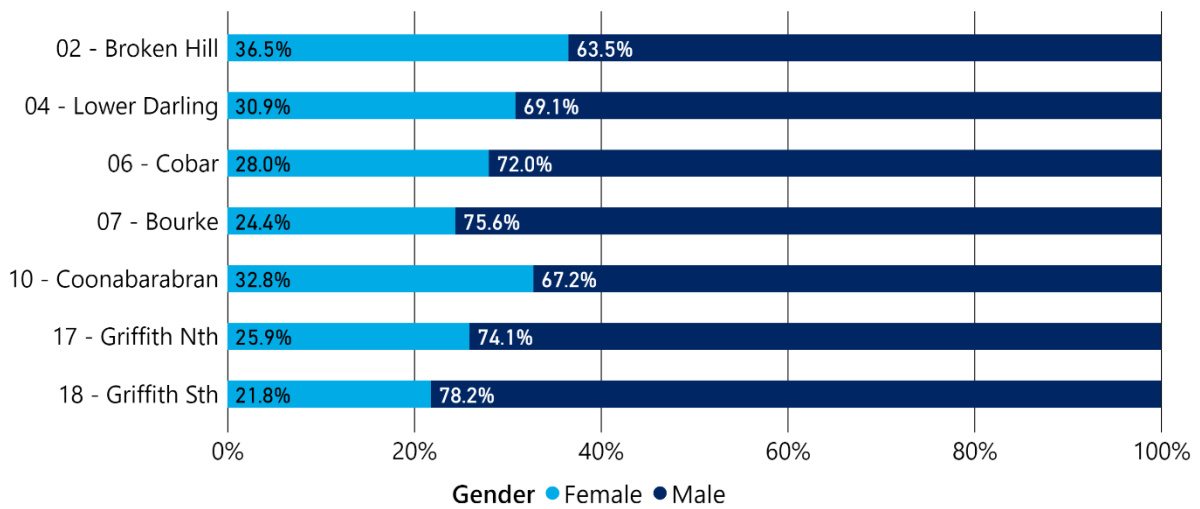


Figure 7 Western grey gender bias by zone in the 2021 commercial harvest

Average weights by species and zone

During 2021, commercial harvest licence conditions required that kangaroo carcasses delivered to chillers for sale were not to weigh less than 14 or 15 kilograms (the 2 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 22-year average (1999–2020) carcass weights by gender and species (across all zones) are shown in Figure 8. Data collected from harvester returns during 2021 indicate average carcass weight across all species was 29.0 kilograms for males and 19.2 kilograms for females (Table 1 and 2); 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.

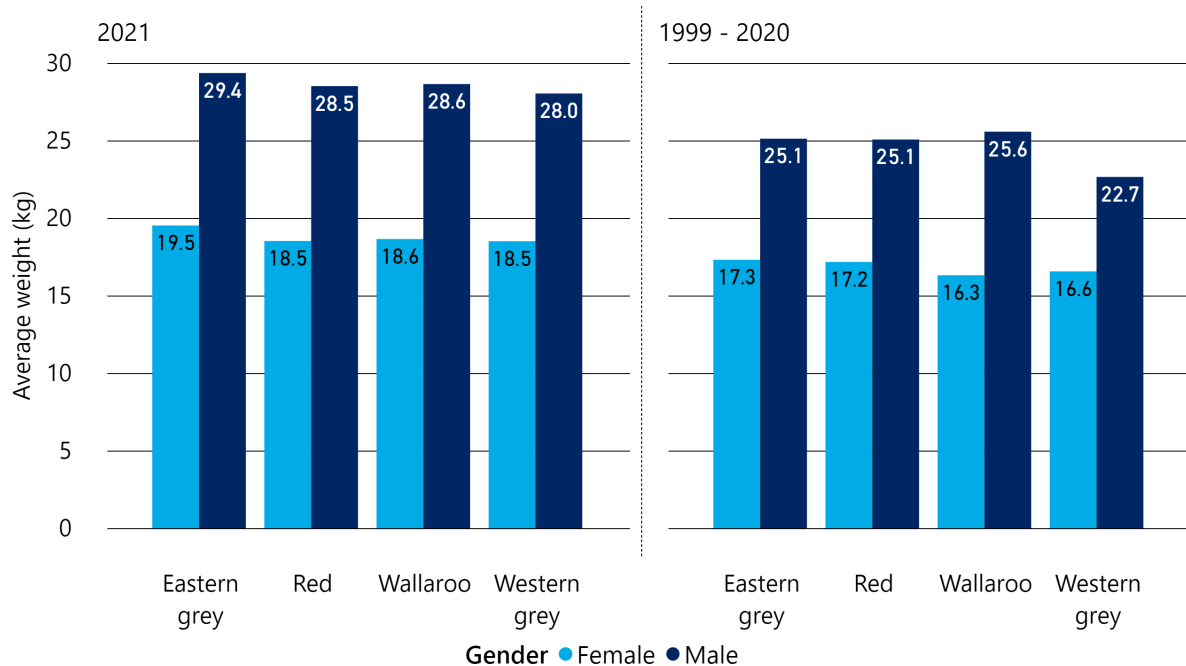


Figure 8 Average weights of male and female carcasses by species for 2021 compared with the average of the previous 22 years (1999-2020)

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 male eastern grey kangaroos = total weight of male eastern grey kangaroos divided by the number of male 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 usually 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 several 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 the Cobar zone in June or July 2021.

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.

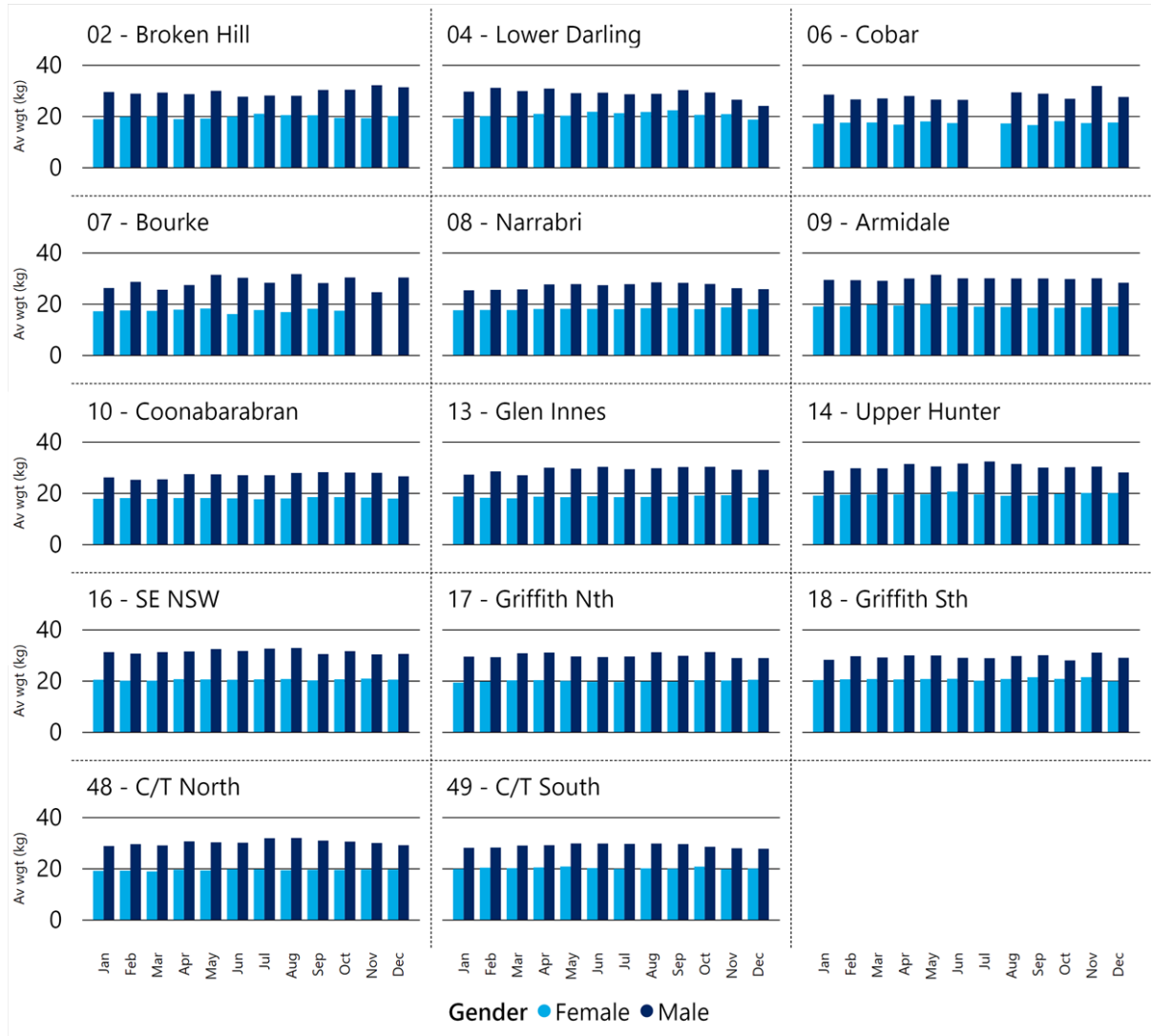


Figure 9 Eastern grey kangaroo male and female average carcass weights for each zone in the 2021 commercial harvest

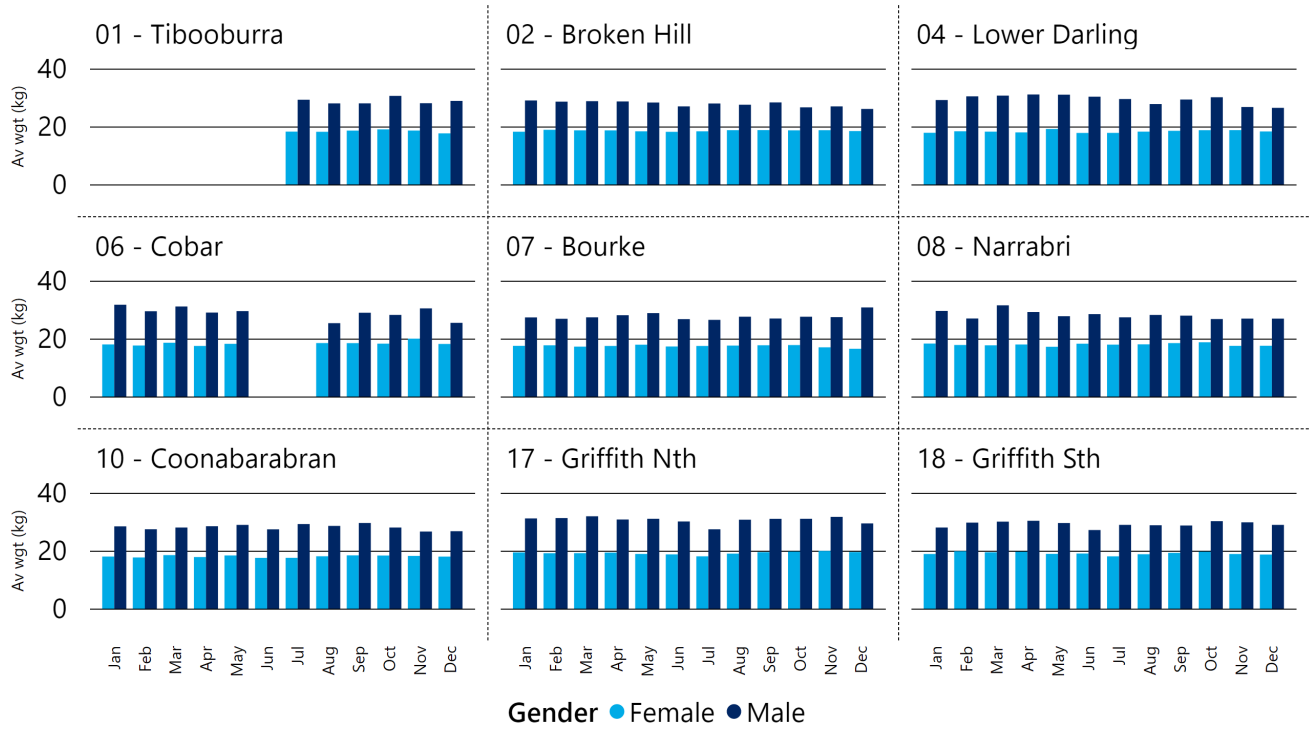


Figure 10 Red kangaroo male and female average carcass weights for each zone in the 2021 commercial harvest

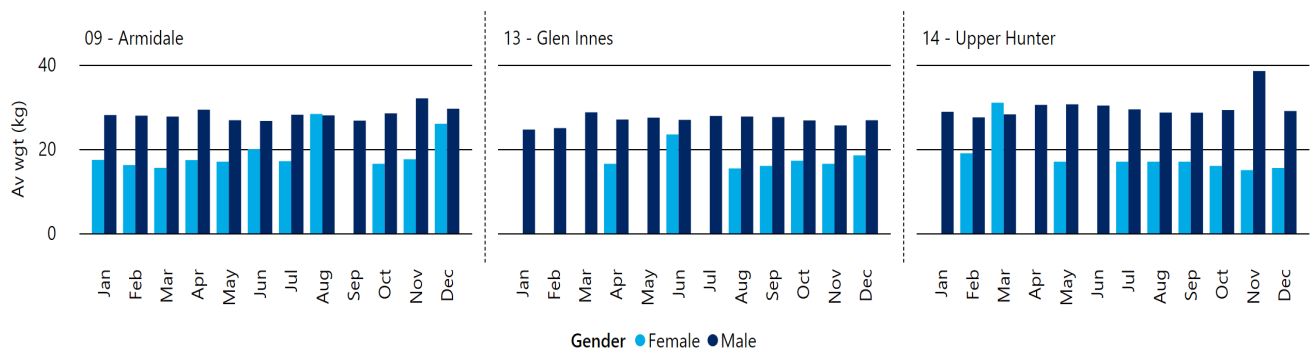


Figure 11 Common wallaroo male and female average carcass weights for each zone in the 2021 commercial harvest

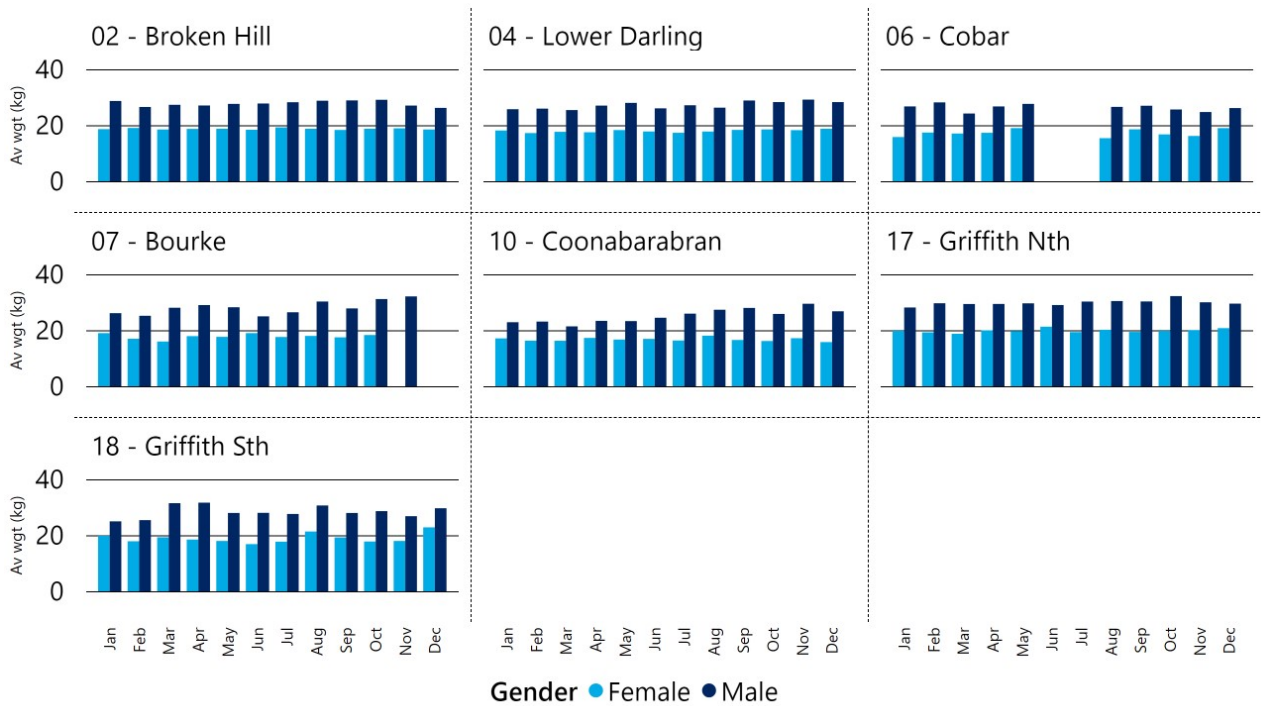


Figure 12 Western grey kangaroo male and female average carcass weights for each zone in the 2021 commercial harvest

Non-commercial culling within the commercial harvest zones

In New South Wales, landholders who are negatively impacted by kangaroos may apply to the NSW National Parks and Wildlife Service for a non-commercial culling licence. These licences are generally issued where impacts such as property damage, risk to human health or safety, or economic hardship cannot be adequately managed by non-lethal measures or commercial harvesting. Non-commercial licences are available statewide and can be issued for properties where commercial harvesting is also undertaken. The non-commercial cull is usually highest in those areas where high-value pastures and winter crops are important.

In 2021, licences were issued to cull 115,194 kangaroos within the commercial harvest zones. Licensees who submitted reports indicated 38,531 kangaroos were actually culled under these licences authorising culling of up to 81,479 kangaroos. A number of licensees have not yet submitted reports, with these licences authorising culling of up to 33,715 kangaroos. Combining the number reported as culled (where a return has been received = 38,531) with the number authorised to be culled (where a return has not been received = 33,715) gives a maximum non-commercial cull figure of 72,246 kangaroos.

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

Table 3 Maximum 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	560	1,027	2,350	1,779	5,716
04 – Lower Darling	250	392	873	695	2,210
06 – Cobar	0	70	70	70	210
07 – Bourke	0	300	300	300	900
08 – Narrabri	21	2,381	882	0	3,284
09 – Armidale	86	500	0	0	586
10 – Coonabarabran	235	1,033	120	250	1,638
13 – Glen Innes	83	1,477	0	0	1,560
14 – Upper Hunter	39	185	0	0	224
16 – South East NSW	209	27,972	0	0	28,181
17 – Griffith North	0	4,131	2,547	2,255	8,933
18 – Griffith South	0	6,384	649	100	7,133
48 – Central Tablelands North	408	5,444	0	0	5,852
49 – Central Tablelands South	30	5,784	0	5	5,819
Totals	1,921	57,080	7,791	5,454	72,246

The highest maximum non-commercial cull was in the South East zone at 28,181 kangaroos. This is approximately half the commercial harvest in South East zone in 2021 (56,320) and is 1.6% of the estimated kangaroo population in South East zone. This was also the highest percentage of the estimated population as shown in Table 4. Griffith North zone also had 1.6 % of the population culled.

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

Zone	Total kangaroo population	Potential non-commercial cull	Non-commercial cull percentage
01 – Tibooburra	207,324	0	0.0
02 – Broken Hill	1,478,884	5,716	0.4
04 – Lower Darling	898,441	2,210	0.2
06 – Cobar	146,689	210	0.1
07 – Bourke	159,477	900	0.6
08 – Narrabri	936,243	3,284	0.4
09 – Armidale	539,190	586	0.1
10 – Coonabarabran	1,043,142	1,638	0.2
13 – Glen Innes	680,065	1,560	0.2
14 – Upper Hunter	210,900	224	0.1

Zone	Total kangaroo population	Potential non-commercial cull	Non-commercial cull percentage
16 – South East NSW	1,721,400	28,181	1.6
17 – Griffith North	547,321	8,933	1.6
18 – Griffith South	625,287	7,133	1.1
48 – Central Tablelands North	777,350	5,852	0.8
49 – Central Tablelands South	488,270	5,819	1.2
Totals	10,459,983	72,246	0.7

The difference in method for calculating maximum non-commercial cull figures (based on reports and extrapolation) and commercial harvest 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 2021 there were 571 licensed commercial harvesters with approximately 2,775 approved landholder consents (some properties may have provided consent to multiple harvesters) for commercial harvesting. These properties cover approximately 14.2 million hectares. There were also 139 registered chillers, 15 licensed animal dealers and five licensed skin dealers.

Compliance audits of licensees are performed continuously by the department's compliance officers, with additional 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 2021, 40 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.

Two multi-agency surveillance and enforcement operations were conducted during 2021. Both were joint operations with NSW Police Force and NSW Department of Primary Industries Game Licensing Unit.

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 2021, there were 139 chiller premises registered. A total of 152 chiller inspections, 15 processing works inspections and one skin dealer inspection were conducted by the department during 2021. A further 49 audits of chiller premises and 464 inspections of game meat harvester vehicles were conducted by NSW Food Authority.

The number of inspections is significantly below 2020 levels, and not all licensed chiller premises were inspected due to NSW Government COVID 19 Health Orders restricting travel and people gathering. Table 5 shows the number of chiller and processing works inspections undertaken in each of the last 4 years.

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.

Table 5 Number of chiller and Animal Dealer/Skin Dealer inspections undertaken by year.

Year	Chiller inspections	Animal dealer/skin dealer processing works inspections
2018	>121	26
2019	>121	27
2020	364	32
2021*	152	16

Penalty infringement notices

Issuing of verbal cautions, written warnings or infringement notices is at the discretion of the regional compliance officer, in accordance with the department's Compliance Policy (OEH 2018). A total of 40 matters were investigated by compliance teams. Although cautions do not attract penalties, they are recorded and taken into account in any future compliance considerations and risk assessment procedures. Table 6 summarises compliance response outputs for 2021.

Table 6 Compliance outputs 2021

	Advisory letter	Official caution	Warning letter	Penalty infringement notice	Total
Non-head shot	1	4	2	2	9
Underweight carcasses				2	2
Incorrect display on chiller	1		11		12
All other breach of licence conditions	2		2	3	7
Total	4	4	15	7	30

Licence cancellations

In the 2021 licensing year no licences were cancelled.

Prosecutions

There were no prosecutions commenced during 2021.

Other factors affecting the commercial harvest in 2021

Reduced or suspended quotas

A number of zones or species in a zone had reduced or suspended quotas in 2021. These are listed in Table 7. 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 7 Zones with reduced or suspended quota in 2021

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

Carcass price

Prices paid by dealers to harvesters for kangaroo carcasses were maintained at record levels of \$1.30-\$1.50 per kilogram throughout 2021. This was likely to be the result of several factors, including sustained dealer demand, improved competition, and relatively low supply. Supply was suppressed at times throughout 2021 largely due to wet weather, lower numbers due to the previous drought, and to a lesser extent COVID-19 impacts on harvesters.

Online licensing system enhancements

Significant work was done throughout 2021 on the Wildlife Management System (WMS) that is used to manage licences, tags, landholder consents and returns. This has resulted in further improvements to the functionality of the WMS making it more user friendly. New functions added to WMS during 2021 included enabling administrators to block licensees not adhering to licence conditions from ordering tags and/or renewing their licences, and the ability to register mobile chillers to enable the Mobile Chiller Trial to commence in 2022. These enhancements are part of an ongoing continuous improvement approach adopted by the KMP.

Research involvement in 2021

Apart from annual population surveys, no research projects were completed by the Kangaroo Management Program in 2021.

Appendix A: Progress against performance indicators in 2021

Management action and method	Performance indicators	Progress in 2021
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:</p> <ol style="list-style-type: none"> 100% of licence holders have met shooter competency standards 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. Complete. 100% of 2021 weekly chiller returns were received. Complete. 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 NSW Food 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 2021
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. Administrative breaches such as overdue returns were managed through licence administration mechanisms including notification emails, blocking tag ordering and show cause letters.
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 152 chiller inspections undertaken during 2021. Across the 139 chillers registered, this is an average of 1.1 inspections per chiller for the 2021 year. NSW Food Authority undertook an additional 49 audits of chiller premises. Although there was an average of 1.1 inspections per registered chiller, not all chillers were inspected during 2020 due to COVID 19 travel restrictions. 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 15 kangaroo processing works and one skin processing works inspection undertaken during 2021, across the 10 registered processing (kangaroo and kangaroo skin) works. This is an average of 1.6 inspections per licensed registered processing works for the 2021 year. The target of three inspections for every processing works was not achieved during 2021 due to COVID 19 travel restrictions. JSAs and JSBs were reviewed and implemented for chiller and processing work inspections.

Management action and method	Performance indicators	Progress in 2021
<p>Conduct two field audits of licensed harvesters per year.</p> <p>Method</p> <p>Routine inspections consistent with The department safety protocol.</p>	8. Inspections and breaches reported annually.	<p>Harvester field audits were not conducted in 2021 due to work health and safety risks.</p> <p>Increased effort has been placed on chiller inspections in place of the harvester field audits.</p>
Objective 2: To ensure the commercial harvest is ecologically sustainable		
<p>Population monitoring.</p> <p>Method</p> <p>Annual aerial surveys.</p>	9. 100% of surveys conducted by 30 November (annually or triennially as relevant).	Complete. In 2021 aerial surveys of Western Plains were conducted June - July. Helicopter surveys of South East Tablelands management zones were completed in September-October 2021. Population estimates were published in the 2022 Quota Report on the Commercial kangaroo management webpage in November 2021.
<p>Quota set each year as a percentage of kangaroo population.</p> <p>Method</p> <p>Quota percentage set for each species and calculated for each management zone based on population estimates.</p>	10. Quotas commence 1 January each year, and harvest does not exceed allocations as stated in quota reports.	Approved quotas commenced on 1 January 2021. Harvest did not exceed quotas in any zone in 2021.
<p>Restriction of harvest area (no-harvest sanctuaries).</p> <p>Method</p> <p>Harvesting is permitted only on private land.</p>	11. 100% of harvest returns specify the private land where the kangaroo was harvested.	Harvesting was permitted only on private land.
<p>Risk assessment of species through harvest data.</p> <p>Method</p> <p>Analysis of kangaroo data from harvesters (weight, sex, number) per zone.</p>	<p>12. Data analysis indicators:</p> <p>a. all required data captured</p> <p>b. all data analysed</p> <p>c. kangaroo population statistics are compared against thresholds to measure whether kangaroo populations are within normal range</p>	<p>a-c. Harvester returns were monitored. 99.4% of harvester monthly returns have been submitted at the time of drafting this report.</p> <p>Further, a special effort was made to minimise the number of commercial tag advices (CTAs) that were in-complete. 96% of the 4,740 CTAs issued were fully complete and balanced at the time of writing this report.</p>

Management action and method	Performance indicators	Progress in 2021
	<p>d. action taken, including possible suspension of harvest, if population statistics show trends below thresholds.</p>	<p>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 2021 licensing year.</p> <p>Complete. (Refer to density estimate and threshold tables in 2021 Quota Report).</p> <p>d. Complete. See Table 7 for zones and species that had reduced or suspended quotas in 2021.</p>
<p>Maintenance of population within thresholds.</p> <p>Method</p> <p>Tags allocated in accordance with quotas only.</p> <p>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.</p> <p>Harvest did not exceed the quota for any zone in 2021.</p>
<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 the Environment at least 12 months before its expiry.</p>	<p>14. Review indicators:</p> <p>a. 100% of harvester returns are received each quarter</p> <p>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 and Environment kangaroo management webpages by 31 March each year</p> <p>c. Commercial Kangaroo Harvest Management Plan is reviewed in 2021 or as required, including in the event of legislative change.</p>	<p>a. Harvester returns were monitored. 99.4% of harvester monthly returns have been submitted at the time of drafting this report. Efforts to increase this to 100% will be prioritised in 2022.</p> <p>b. 2021 Annual Report 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 2021 CTA completion rates.</p> <p>c. Complete – The Commercial Kangaroo Harvest Management Plan was reviewed, and a new plan was submitted to the Australian Government according to agreed timelines. The Wildlife Trade Management</p>

Management action and method	Performance indicators	Progress in 2021
<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>Plan for the Commercial Harvest of Kangaroos in NSW 2022-2026 was approved in December 2021.</p> <p>Complete. See Table 7 for zones and species that had reduced or suspended quotas in 2021.</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-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>16. Compliance indicators:</p> <p>a. all allegations of non-compliance assessed for risk to program objectives, and investigated as required</p> <p>b. all self-reports of non-compliance assessed for risk to program objectives and investigated as required</p> <p>c. at least one audit program undertaken in the period covered by this plan.</p>	<p>a. Complete. All reports of non-compliance were reported to regional compliance and regulatory officers for risk assessment and investigation.</p> <p>b. Complete. All self-reports of non-compliance were assessed for risk, and appropriate responses taken.</p> <p>c. An internal audit of the Kangaroo Management Program was undertaken in 2018–19. Recommendations are being used to inform program improvements.</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 2021.</p>

Management action and method	Performance indicators	Progress in 2021
Department commitment: Engage with community and industry stakeholders to ensure the objectives of this plan are met		
<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>	18.KMAP meetings at least twice a year.	<p>KMAP meetings were held in April and November 2021 and regular updates were provided throughout 2021.</p> <p>KMAP was consulted regarding the:</p> <ul style="list-style-type: none"> • 2020 Annual Report • 2022 Quota Report • review of the Commercial Kangaroo Harvest Management Plan • the development of the new Wildlife Trade Management Plan <p>A new KMAP with increased stakeholder membership was formed in November 2021. This new KMAP will provide advice on the operation of the Kangaroo Management Program for 5 years.</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>	19.Annual report and quota report uploaded to the kangaroo management webpage, and other relevant documents made accessible as required.	<p>The 2020 Annual Report and 2022 Quota Report were published on the department's website during 2021.</p> <p>Monthly harvest and allocation reports were published on the department's website throughout 2021.</p>

More information

- [2022 Quota Report](#)
- [Allocation and harvest reports](#)