

2020 Harvest Report

Commercial Kangaroo Harvest
South Australia



**Government
of South Australia**

Department for
Environment and Water

Department for Environment and Water

GPO Box 1047, Adelaide SA 5001

Website: www.environment.sa.gov.au

Contact link: <http://www.environment.sa.gov.au/contact-us>

Disclaimer

The Department for Environment and Water and its employees do not warrant or make any representation regarding the use, or results of the use, of the information contained herein as regards to its correctness, accuracy, reliability, currency or otherwise. The Department for Environment and Water and its employees expressly disclaims all liability or responsibility to any person using the information or advice. Information contained in this document is correct at the time of writing.

© Crown in right of the State of South Australia, through the Department for Environment and Water 2021

This work is Copyright. Apart from any use permitted under the *Copyright Act 1968* (Cwlth), no part may be reproduced by any process without prior written permission obtained from the Department for Environment and Water. Requests and enquiries concerning reproduction and rights should be directed to the Chief Executive, Department for Environment and Water, GPO Box 1047, Adelaide SA 5001.

Preferred way to cite this publication

2021, *2020 Commercial Kangaroo Harvest Report for South Australia*, Government of South Australia, through Department for Environment and Water, Adelaide

Download this document at: http://www.environment.sa.gov.au/managing-natural-resources/plants-and-animals/Abundant_species/Kangaroo_conservation_management/quoas-harvest-data

Foreword

Kangaroos are an iconic part of South Australian landscapes. They are valued for their role in ecosystems, and as a resource that can be used sustainably. The Department for Environment and Water (DEW) is responsible for the conservation and management of kangaroos in South Australia in accordance with the *National Parks and Wildlife Act 1972* (NPW Act), ranging from policy leadership to on-ground operations in consultation with government, industry and communities.

Widespread changes to the environment since European settlement have changed the abundance of many native species. Some species have declined in number, while others have adapted to the changes and can exploit the opportunities provided by altered habitats. These species – including kangaroos – are now present in larger numbers, or are more widespread than before.

Large numbers of kangaroos may be in conflict with various land uses and the objectives for which land is being managed. When this conflict occurs, kangaroos can cause detrimental impacts that may be environmental, economic, or social in nature. The drying conditions associated with drought can magnify these conflicts, especially where localised movement of kangaroos may occur as they seek feed and water resources.

The NPW Act provides for the destruction of kangaroos for the purposes of mitigating or preventing damage and allows for the commercial harvest of the common kangaroo species (Red Kangaroo, Western Grey Kangaroo, Eastern Grey Kangaroo, Euro and Tammar Wallaby). High-quality science, effective monitoring and compliance provide the foundation for the management of our environment and natural resources, including our kangaroo species. This is achieved through appropriate management of legislation, research, investigations, assessments, monitoring and evaluation.

DEW's partnerships with industries, government agencies, Landscape Boards and the community ensures that there is continual capacity building with respect to kangaroo management, and that the best skills and expertise are used to inform decision making.



Michael Williams

DIRECTOR OF NATIONAL PARKS AND WILDLIFE

DEPARTMENT FOR ENVIRONMENT AND WATER

Contents

Tables and Figures	ii
Summary.....	1
Legislation.....	1
2020 Quotas	1
2020 Harvest regions	1
2020 Harvest Details.....	3
Sex bias and average weights	6
Harvest Quota Management	7
Sustainable Use Quota.....	7
Special Land Management Quota.....	7
Non-commercial destruction permits	8
Compliance	9
Compliance action.....	9
Compliance priorities for 2020	10
Compliance priorities for 2021	10
Interstate Liaison	11
Kangaroo Management on Reserves	12
Research.....	13
Spatial population models to inform kangaroo management in South Australia	13

Tables and Figures

Table 1: Kangaroo harvest regions and sub-regions for South Australia during 2020.....	1
Table 2: Harvest statistics from kangaroo field processor returns for the 2020 calendar year.	3
Table 3: Harvest statistics from kangaroo meat processor returns for the 2020 and 2019 calendar years.	3
Table 4: Harvest of Red Kangaroos during 2020 calendar year.	4
Table 5: Harvest of Western Grey Kangaroos during 2020 calendar year.	4
Table 6: Harvest of Euros during 2020 calendar year.	5
Table 7: Harvest of Eastern Grey Kangaroos during 2020 calendar year.	5
Table 8: Harvest of Tammar Wallabies during 2020 calendar year.	5
Table 9: Average weights and sex bias of harvested Red Kangaroos during 2020.	6
Table 10: Average weights and sex bias of harvested Western Grey Kangaroos during 2020.	6
Table 11: Average weights and sex bias of harvested Euros during 2020.	6
Table 12: Average weights and sex bias of harvested Eastern Grey Kangaroos during 2020.	6
Table 13: Average weights and sex bias of harvested Tammar Wallabies during 2020.	6
Table 14: Non-commercial destruction of kangaroos per commercial harvest region during 2020.	8
Table 15: Compliance activities relating to the commercial harvest of kangaroos in South Australia during 2020.	10
Table 16: Compliance issues detected in kangaroo carcasses imported by South Australian kangaroo meat processors during 2020.	11
Table 17: Numbers of kangaroos culled (shoot and let lie) on reserves declared under the <i>National Parks and Wildlife Act 1972</i> in South Australia during 2020.	12
Figure 1: Map of harvest regions and sub-regions of South Australia	2

Summary

Legislation

All kangaroo species in South Australia are protected under the *National Parks and Wildlife Act 1972* (NPW Act), have value in ecosystem processes, and contribute to biodiversity. The NPW Act (section 60G) and associated regulations, allow for the sustainable harvest of the following common kangaroo species:

- Red Kangaroo (*Macropus rufus*)
- Western Grey Kangaroo (*M. fuliginosus*)
- Eastern Grey Kangaroo (*M. giganteus*)
- Euro (*M. robustus*)
- Tammar Wallaby (*M. eugenii*)

The wildlife trade provisions of the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) regulate the export of kangaroo products from Australia. The harvest and export of these protected species requires a management plan endorsed under the NPW Act and a Wildlife Trade Management Plan endorsed under the EPBC Act.

The Department for Environment and Water (DEW) manages the commercial harvest of the common kangaroo species in South Australia. Management of the commercial harvest is implemented through the South Australian Commercial Kangaroo Management Plan 2020 – 2024 (the Management Plan). The Management Plan meets the requirements of NPW Act, and the EPBC Act, as an approved Wildlife Trade Management Plan.

This harvest report details the operation of the Management Plan and includes the following information:

- Actual harvest for 2020, by harvest sub-region and species;
- Harvest quota management;
- Special Land Management Quota issued;
- Non-commercial destruction statistics;
- Compliance statistics;
- Current management programs on reserves; and
- Research that the department is involved with relating to kangaroos.

2020 Quotas

Annual harvest quotas are based on the results of kangaroo population surveys and population model estimates.

The Lower South East, Hills and Fleurieu and Kangaroo Island sub-regions were opened for commercial harvesting on 1 January 2020. During 2019, driving surveys were undertaken within the above mentioned sub-regions. Each sub-region was stratified based on land use and vegetation structure. Population densities were calculated for each habitat block and multiplied by the area to determine the population estimate. These population estimates were summed to determine an overall population estimate for the sub-region. The average densities presented in the 2020 Quota Report for these three sub-regions were calculated as the average density of all habitat blocks, which resulted in discrepancies if the overall density estimate is multiplied by the area of the sub-region. However, quotas are based on the population estimate rather than the overall density, and were still set in line with the Management Plan.

2020 Harvest regions

The Management Plan defines five harvest regions that consist of 17 sub-regions (Table 1 and Figure 1). Harvest sub-regions are based on the boundaries of the former Soil Conservation Board districts.

Table 1: Kangaroo harvest regions and sub-regions for South Australia during 2020.

Harvest Region	Harvest Sub-region
Eastern Pastoral	North Flinders
	North East Pastoral
	Eastern Districts
	Mallee
Western Pastoral	Marla-Oodnadatta
	Marree (inside dog fence)
	Marree (outside dog fence)
	Kingoonya
	Gawler Ranges
Eastern Agricultural	South Flinders
	Yorke Mid North
Western Agricultural	Eyre East
	Eyre West
Southern Agricultural (Opened 1 January 2020)	Hills and Fleurieu
	Kangaroo Island
	Upper South East
	Lower South East

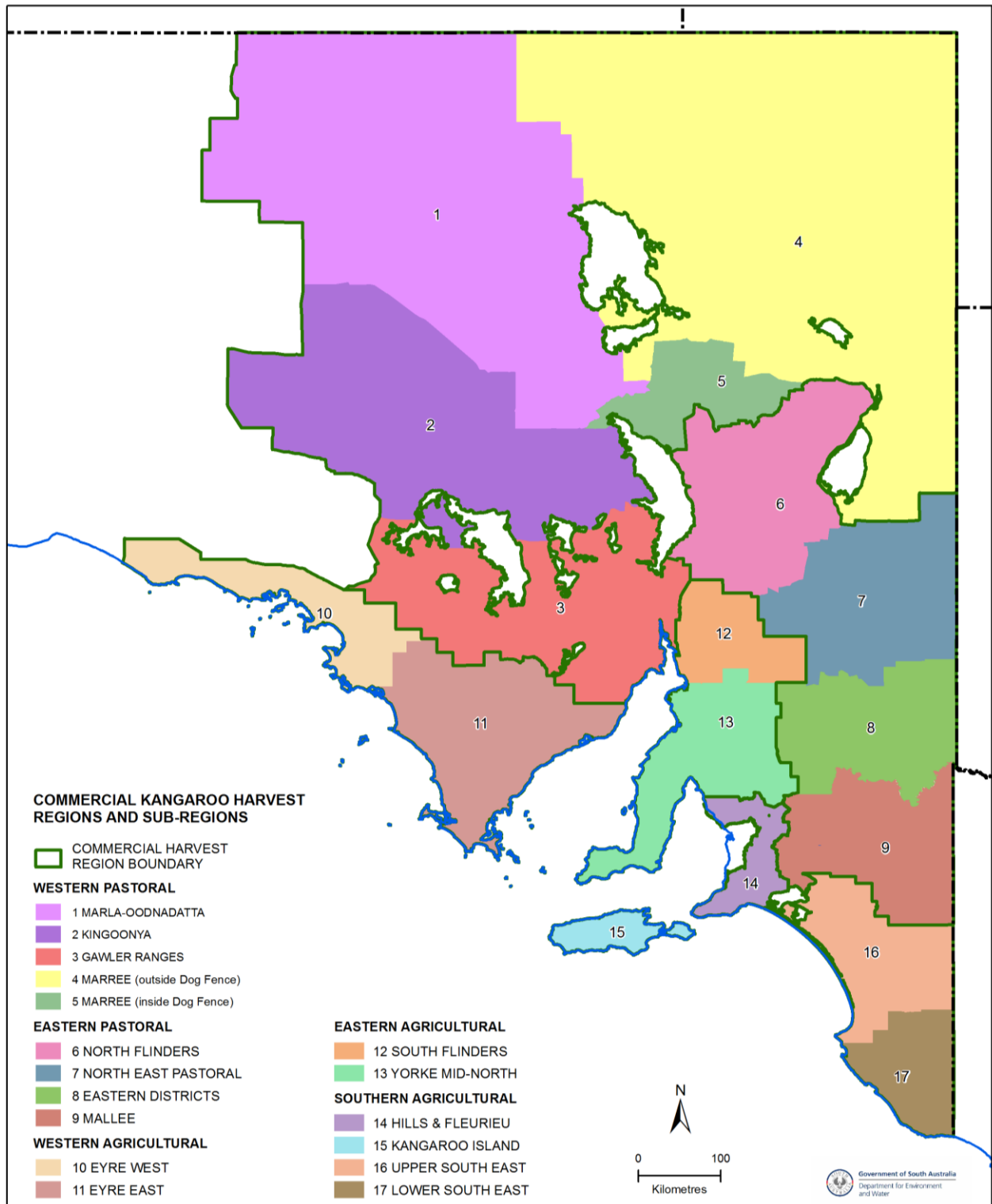


Figure 1: Map of harvest regions and sub-regions of South Australia

2020 Harvest Details

Harvest returns are received each month by DEW from kangaroo field processors (shooters) and kangaroo meat processors. Harvest data for 2020 are provided in the tables below. Table 2 is sourced from kangaroo field processor returns and may be subject to amendment. Table 3 is sourced from kangaroo meat processor returns and is regarded as the more accurate in terms of numbers, as these data are related to payments made to kangaroo field processors. Table 3 shows a comparison with the 2019 commercial harvest statistics.

Table 2: Harvest statistics from kangaroo field processor returns for the 2020 calendar year.

Species	Quota*	Harvest*	% Quota harvested
Red Kangaroo	277,500	50,062	18
Western Grey Kangaroo	177,200	36,556	21
Euro	60,300	4,343	7
Eastern Grey Kangaroo	8,300	8,262	100
Tammar Wallaby	9,100	0	0
Total	532,400	99,223	19

* Including Special Land Management Quota.

There is a discrepancy between meat processor and field processor totals of 261 kangaroo carcasses. This represents 0.05% of the quota and is not considered significant given the varied sources from which these data are compiled. The higher number of kangaroos recorded using the field processor returns may relate to kangaroos which were harvested but not yet purchased by meat processors. Also, DEW has outstanding issues awaiting resolution with field processors and meat processors, where errors have been identified on their returns. The discrepancy may change once these matters have been resolved.

Table 3: Harvest statistics from kangaroo meat processor returns for the 2020 and 2019 calendar years.

Species	Quota*	Harvest*	% Quota harvested
Red Kangaroo			
2020	277,500	49,784	18
2019	501,200	68,711	14
Western Grey Kangaroo			
2020	177,200	36,603	21
2019	170,900	24,565	14
Euro			
2020	60,300	4,303	7
2019	80,000	6,013	8
Eastern Grey Kangaroo ¹			
2020	8,300	8,272	100
Tammar Wallaby ¹			
2020	9,100	0	0
2020 Total	532,400	98,962	19
2019 Total	752,100	99,289	13

* Including Special Land Management Quota.

¹ Eastern Grey Kangaroos and Tammar Wallabies were not available for harvest in 2019.

The 2020 kangaroo harvest by harvest region and species is provided in Tables 4, 5 and 6. Data for these tables are sourced from field processor returns. These tables do not include the Special Land Management Quota (SLMQ) which is detailed in the Harvest Quota Management section.

The harvest of kangaroos in South Australia during recent years has been relatively static at around 100,000 kangaroos per year, even though numbers across the landscape had been high prior to the dry conditions during 2019 and 2020. The 2020 harvest shows a decrease of around 300 kangaroos when compared to the 2019 harvest.

Table 4: Harvest of Red Kangaroos during 2020 calendar year.

Harvest Region	Quota ¹	Harvest ^{1,2}	% q*	% p*	Ave. female weight	Ave. male weight	# Females	# Males
Western Pastoral	159,900	21,194	13	10-20	17.7Kg	27.2 Kg	8,249	12,939
Eastern Pastoral	77,700	17,270	22	10-17	17.4 Kg	25.6 Kg	8,643	8,613
Eastern Agricultural	32,200	11,353	35	17-20	17.1 Kg	25.0 Kg	4,700	6,653
Total	269,800	49,817	18	-	-	-	21,592	28,205

¹Quota and Harvest do not include Special Land Management Quota

² Harvest includes 20 carcasses left in field (did not meet industry standards), that are not included in the # Females and # Males, or weights.

* % q = commercial take as percentage of approved quota; % p = allowed commercial take as percentage of population estimate (range relates to individual harvest sub-region quotas).

Table 5: Harvest of Western Grey Kangaroos during 2020 calendar year.

Harvest Region	Quota ¹	Harvest ^{1,2}	% q*	% p*	Ave. female weight	Ave. male weight	# Females	# Males
Western Pastoral	30,800	3,137	10	0-12	18.2 Kg	25.4 Kg	1,211	1,926
Eastern Pastoral	33,600	4,661	14	10-15	17.2 Kg	23.8 Kg	2,152	2,509
Western Agricultural	24,200	3,531	15	10	16.9 Kg	28.5 Kg	1,525	2,006
Eastern Agricultural	43,000	15,103	35	12-15	17.9 Kg	26.2 Kg	6,364	8,737
Southern Agricultural	38,800	10,124	26	12-15	18.9.Kg	35.54 Kg	4,096	6,026
Total	170,400	36,556	22	-	-	-	15,348	21,204

¹Quota and Harvest do not include Special Land Management Quota

²Harvest includes 4 carcasses left in field (did not meet industry standards), that are not included in the # Females and # Males, or weights.

* % q = commercial take as percentage of approved quota; % p = allowed commercial take as percentage of population estimate (range relates to individual harvest sub-region quotas).

Table 6: Harvest of Euros during 2020 calendar year.

Harvest Region	Quota ¹	Harvest ^{1,2}	% q*	% p*	Ave. female weight	Ave. male weight	# Females	# Males
Western Pastoral	19,300	661	3	0-10	15.0 Kg	24.4 Kg	23	637
Eastern Pastoral	29,000	1,441	5	0-10	15.7 Kg	19.9 Kg	222	1,218
Eastern Agricultural	9,200	2,241	24	9-15	15.5 Kg	24.9 Kg	85	2,156
Total	57,500	4,343	8	-	-	-	330	4,011

¹Quota and Harvest do not include Special Land Management Quota

² Harvest includes 2 carcasses left in field (did not meet industry standards), that are not included in the # Females and # Males or weights.

* % q = commercial take as percentage of approved quota; % p = allowed commercial take as percentage of population estimate (range relates to individual harvest sub-region quotas).

Table 7: Harvest of Eastern Grey Kangaroos during 2020 calendar year.

Harvest Region	Quota ¹	Harvest ¹	% q*	% p*	Ave. female weight	Ave. male weight	# Females	# Males
Southern Agricultural	7,400	7,362	99	0-12	20.7 Kg	34.5 Kg	3,360	4,002
Total	7,400	7,362	99	-	-	-	3,360	4,002

¹ Quota and Harvest do not include Special Land Management Quota and harvest

* % q = commercial take as percentage of approved quota; % p = allowed commercial take as percentage of population estimate (range relates to individual harvest sub-region quotas).

Table 8: Harvest of Tammar Wallabies during 2020 calendar year.

Harvest Region	Quota ¹	Harvest ¹	% q*	% p*	Ave. female weight	Ave. male weight	# Females	# Males
Southern Agricultural	8,700	0	0	0-10	-	-	-	-
Total	8,700	0	0	-	-	-	-	-

¹ No harvest occurred during 2020; harvest was suspended in January until the impact of the bushfires could be assessed.

* % q = commercial take as percentage of approved quota; % p = allowed commercial take as percentage of population estimate (range relates to individual harvest sub-region quotas).

Sex bias and average weights

Commercial harvests typically have a bias towards larger and heavier animals. Data (Sustainable Use Quota and Special Land Management Quota) detailing the average weight and sex bias for 2020, and compared to 2019 (where available), are provided in Tables 9-13.

Table 9: Average weights and sex bias of harvested Red Kangaroos during 2020 (2019 data in brackets).

Red kangaroo	Ave. male weight (kg)	Ave. female weight (kg)	Male bias (%)
Western Pastoral	27.2 (26.7)	17.7 (16.9)	61 (72)
Eastern Pastoral	25.6 (23.8)	17.4 (16.8)	50 (65)
Western Agricultural	26.1 -	19.7 -	73 -
Eastern Agricultural	25.0 (22.8)	17.1 (17.3)	59 (73)
Total	26.2	17.4	57

Table 10: Average weights and sex bias of harvested Western Grey Kangaroos during 2020 (2019 data in brackets). No 2019 data exists for Southern Agricultural region as harvesting commenced 1 January 2020.

Western Grey Kangaroo	Ave. male weight (kg)	Ave. female weight (kg)	Male bias (%)
Western Pastoral	25.4 (25.3)	18.2 (17.1)	61 (78)
Eastern Pastoral	23.8 (22.9)	17.2 (16.3)	54 (65)
Western Agricultural	28.5 (27.5)	16.9 (17.2)	57 (68)
Eastern Agricultural	26.2 (24.9)	17.9 (17.4)	58 (72)
Southern Agricultural	35.5 -	18.9 -	60 -
Total	28.7	18.0	58

Table 11: Average weights and sex bias of harvested Euros during 2020 (2019 data in brackets).

Euro	Ave. male weight (kg)	Ave. female weight (kg)	Male bias (%)
Western Pastoral	24.4 (22.8)	15.0 (11.9)	96 (95)
Eastern Pastoral	19.9 (20.9)	15.7 (15.0)	85 (98)
Eastern Agricultural	24.9 (25.7)	15.5 (15.6)	96 (98)
Total	23.3	15.6	92

Table 12: Average weights and sex bias of harvested Eastern Grey Kangaroos during 2020. No 2019 data exists for Southern Agricultural region as harvesting commenced 1 January 2020.

Eastern Grey Kangaroo	Ave. male weight (kg)	Ave. female weight (kg)	Male bias (%)
Southern Agricultural	34.2 -	20.6 -	55 -
Total	34.2	20.6	55

Table 13: Average weights and sex bias of harvested Tammar Wallabies during 2020. No 2019 data exists for Southern Agricultural region as harvesting commenced 1 January 2020.

Tammar Wallaby ¹	Ave. male weight (kg)	Ave. female weight (kg)	Male bias (%)
Southern Agricultural	- -	- -	- -
Total	-	-	-

¹ No harvest occurred during 2020 as harvest was suspended during January 2020 due to extensive bushfires on Kangaroo Island.

Harvest Quota Management

Sustainable Use Quota

Sealed tags were sold throughout the year in accordance with the allocated harvest region quotas for 2020. Harvest reports were viewed regularly, allowing the progress of the kangaroo harvest for each region to be monitored.

The harvest of kangaroos in most harvest regions was generally low when compared to the available quota.

Drought impacted most of the pastoral areas of the State during 2019 and 2020, with the aerial kangaroo survey results over this period showing a decrease in population estimates for kangaroos.

Expanded harvest areas, including the Southern Agricultural Harvest Region, were available for commercial harvest for the first time in 2020. The commercial harvesting industry sourced kangaroos from these new areas while taking fewer kangaroos from the drought affected regions.

The highest harvest (as a percentage of Sustainable Use Quota) occurred in the Lower South East Harvest Sub-region for Eastern Grey Kangaroos, where 7,362 of the available 7,400 were harvested (99.5%).

The kangaroo harvesting industry in South Australia has continued to take approximately 100,000 kangaroos annually since 2010, irrespective of the numbers of kangaroos present within the landscape.

Special Land Management Quota

Special Land Management Quota (SLMQ) may be set at up to 1.5% of the estimated population size of each species, and is used when land management issues arise that may be due to localised or widespread seasonal conditions. This reserve of tags is available within a Commercial Harvest Management Region for use when all commercial quota has been allocated, to mitigate ongoing land condition damage. This quota component is only for the harvest of kangaroos that would otherwise be culled under Permits to Destroy Wildlife, and is designed to minimise the number of kangaroos destroyed under these permits and not utilised by the commercial industry.

In early 2020, a movement of Red Kangaroos into the Western Agricultural Harvest Region was reported by landowners and industry. This was confirmed with local DEW staff during an inspection of the area. No Sustainable Use Quota was available for Red Kangaroos in this harvest region. The movement of kangaroos was similar to the previous year where kangaroos moved from the pastoral land to agricultural land in search of feed and water as drought conditions continued (for Eastern Agricultural Harvest Region).

A SLMQ of 800 Red Kangaroos was released for the Western Agricultural Harvest Region. This resulted in a harvest of 245 kangaroos (179 males and 66 females). Subsequent rain resulted in most of the Red Kangaroos moving back into the pastoral land.

A SLMQ of 900 Eastern Grey Kangaroos was released for the Lower South East Harvest Sub-region as the Sustainable Use Quota was fully allocated and anticipated to be harvested, however, land management issues remained. Of these 900 kangaroos, 497 males and 403 females were harvested.

Non-commercial destruction permits

Details of permits issued for non-commercial destruction of kangaroos (Permit to Destroy Wildlife) in each commercial harvest region for 2020 are provided in Table 14.

Permits have been allocated to harvest regions using the following rules:

- Where a permit for a property straddles harvest regions, the permit is attributed to the harvest region having the majority of the property area.
- Where a permit has been issued and the majority of the land is outside, or wholly outside, the commercial harvest area, then that permit has been included in the adjoining Harvest Region.

Table 14: Non-commercial destruction of kangaroos per commercial harvest region during 2020.

Harvest region	Species available for commercial harvest						Species now available for commercial harvest in 2020				Total permits issued ^c	Total animals on permit
	Red Kangaroo		Western Grey Kangaroo ^a		Euro		Eastern Grey Kangaroo		Tamar Wallaby			
	Permits issued ^b	Animals on permit	Permits issued ^b	Animals on permit	Permits issued ^b	Animals on permit	Permits issued ^b	Animals on permit	Permits issued ^b	Animals on permit		
Western Pastoral	7	1,005	8	950	5	440	-	-	-	-	20	2,395
Eastern Pastoral [^]	66	3,066	174	10,002	11	815	-	-	-	-	251	13,883
Western Agricultural	5	310	127	10,683	5	80	-	-	-	-	137	11,073
Eastern Agricultural [^]	86	4,559	192	11,038	85	2,861	-	-	-	-	363	18,458
Southern Agricultural	1	20	585	30,430	4	22	17	805	48	7,310	655	38,587
Total	165	8,960	1,086	63,103	110	4,218	17	805	48	7,310	1,426	84,396

^a includes both the mainland and the Kangaroo Island sub-species of Western Grey Kangaroo.

^b number of permits that include this species.

^c as a single permit may list multiple species, the reported 'total permits issued' are greater than the actual number of permits issued.

[^] Eastern Pastoral Region now includes Murray Plains Soil Conservation Board (SCB); Eastern Agricultural Region now includes approx. 2/3 of Lower North SCB and Yorke Peninsula as of 1 January 2020.

Compliance

The kangaroo harvesting industry continued to operate through the impacts of COVID-19 as the industry is classified as an essential service. A new commercial harvest area, the Southern Agricultural Region, was opened for harvest as of 1 January 2020. Continued training of nine DEW staff to assist with compliance in the expanded commercial harvest area was limited due to COVID-19. This training will continue in 2021 to include all aspects of the commercial harvest industry.

During 2020, DEW staff routinely checked field processor returns for incorrect information which was then investigated and corrected. The lodgement of monthly returns was monitored, with compliance action taken against permit holders who submitted late returns. Likewise, field processors with outstanding expired sealed tags were followed-up to ensure tags were returned.

Checks of field chillers were conducted to ensure compliance with legislation, however COVID-19 impacted field operations, reducing the ability of staff to travel and meet with permit holders. This restricted inspections of field chillers, meat processing works and tanneries, and the ability to undertake field audits of field processors. An 'e-audit' process was implemented to replace field audits, where specific records were emailed to DEW as part of the audit to demonstrate compliance with legislation. A total of 13 audits were conducted during 2020 (five field audits and eight e-audits)

Fifty-nine field chillers (including mobile chillers and drive-through sites) were in operation throughout the pastoral and agricultural areas of the South Australia during 2020. A total of 53 field chillers were inspected by DEW wardens. The aim of these checks was to ensure that field operations are compliant with the NPW Act and associated regulations.

When inspected, field chillers are checked to ensure:

- Kangaroos are taken according to the National Code of Practice for the Humane Shooting of Kangaroos and Wallabies for Commercial Purposes
- Sealed tags are correctly affixed to kangaroo carcasses
- Sealed tags are valid for use

- Sealed tags affixed to each carcass are correct for that species
- Carcasses are presented in the correct form
- Any food safety issues are documented and reported to the Biosecurity SA Food Safety Program (PIRSA).

Field trips are also an important means of maintaining relationships with field processors (69 permit holders in 2020) and gaining an understanding of landscape condition. Not all chillers were checked during the year due to the impacts of COVID-19 and many chillers were not operational for extended periods.

Four kangaroo meat processors and two tanneries operated in South Australia during 2020. Compliance inspections at the meat processors' facilities provide a good picture of the level of field processors' adherence with carcass tagging requirements and the National Code of Practice for the Humane Shooting of Kangaroos and Wallabies for Commercial Purposes. Six inspections were made of meat processing facilities. One inspection was conducted at a tannery.

Compliance action

Wardens are able to issue verbal warnings, warning letters, written 'caution' and expiation notices. Expiation notices attract a penalty. If a caution is issued to an individual and that person continues to commit the same offence, an expiation notice is generally issued. Serious or habitual offenders may have court action taken against them, which may result in the cancellation of permits. Probationary periods may be used for less serious, habitual offenders, where they are formally advised their permit may be revoked or not renewed if offending continues.

During 2020, five expiation notices, 35 caution notices, four warning letters and four education letters were issued regarding offences in relation to kangaroos harvested or illegally taken in South Australia, as detailed in Table 15.

Expiation notices where a fee was incurred are recorded as a penalty notice.

Table 15: Compliance activities relating to the commercial harvest of kangaroos in South Australia during 2020.

Description of Offence	Result
Permit holder to supply returns within 14 days	12 Cautions 4 Penalty Notices (\$1,088)
Use of expired tags	14 Cautions 1 Penalty Notice (\$270) 1 Warning Letter
Fail to return unused/ out of date tag	4 Cautions
Fail to supply information required by Schedule 2	3 Cautions
Fail to record date harvested on sealed tag	1 Caution
Kangaroo carcass with projectile damage	1 Caution 2 Education Letters
Tag not nominated for sub-region	2 Education Letters
Illegal trade of kangaroo meat	3 Warning Letters

Compliance priorities for 2020

The following points summarise the outcomes against the 2020 compliance priorities as stated in the 2019 Commercial Kangaroo Harvest Report for South Australia.

- Training of nine DEW staff within the expanded commercial harvest area was limited due to COVID-19 restrictions. Further training will be undertaken during 2021.
- All 14 new field chiller locations within the expanded harvest area were inspected by DEW staff during 2020.
- Thirteen audits were conducted during 2020. Eight audits were of the 21 field processors who commenced operating as of 1 January 2019.

Compliance priorities for 2021

The priorities for 2021 are:

- Complete training of nine DEW staff within the expanded commercial harvest area.
- Complete the audit process for field processors who have commenced operating since 1 January 2019.

Interstate Liaison

Two South Australian kangaroo meat processors imported carcasses from New South Wales or Queensland for processing during 2020. During routine inspections, and as a result of information received, eleven imported kangaroo carcasses were identified as having possible projectile damage. Evidence collected was forwarded to interstate authorities for follow-up investigation. A summary of the results of these investigations are provided in Table 16.

Table 16: Compliance issues detected in kangaroo carcasses imported by South Australian kangaroo meat processors during 2020.

Description of offence	Result
Six kangaroo carcasses imported from QLD with possible projectile damage. Evidence was collected and forwarded to QLD authorities for follow-up investigation.	<ul style="list-style-type: none">• Two Penalty Infringement Notices issued relating to two carcasses.• Two carcasses containing shrapnel wounds. Education provided to two harvesters, with no further action.• Two carcasses where the wound was believed to be caused by something other than a bullet. Alleged offenders spoken to and no further action was taken.
Five kangaroo carcasses imported from NSW with possible projectile damage. Evidence was collected and forwarded to NSW authorities for follow-up investigation.	<ul style="list-style-type: none">• One warning letter was issued in relation to a carcass.• One official caution was issued in relation to a carcass.• Currently awaiting feedback in relation to 3 carcasses.

Kangaroo Management on Reserves

On DEW reserves, kangaroos are managed where they impact reserve conservation values. The management of kangaroos on DEW managed land is guided by a policy framework that is based on scientific principles and informed by the objectives of the *National Parks and Wildlife Act 1972*. A proposal to control kangaroo populations on reserves must demonstrate the impact of kangaroos on the conservation values of the reserve, detail monitoring programs to evaluate the success of the control program, and demonstrate adequate control measures for introduced herbivores. All kangaroos are culled in accordance with the respective National Code of Practice for the Humane Shooting of Kangaroos and Wallabies for Commercial Purposes or Non-Commercial Purposes.

During 2020, kangaroo control programs (shoot and let lie) were undertaken on eight DEW reserves. A total of 2,543 Western Grey Kangaroos, 511 Red Kangaroos and 2,000 Euros were culled (Table 17). In addition 189 Western Grey Kangaroos, 126 Red Kangaroos and 87 Euros were commercially harvested from three National Parks and Wildlife (NPW) Reserves. Data on the kangaroos that have been commercially harvested from NPW reserves is included in the 2020 Harvest Details section of this report. The objectives of these programs are to improve conservation values by aiding ecological restoration and/or threatened species recovery.

Table 17: Numbers of kangaroos culled (shoot and let lie) on reserves declared under the National Parks and Wildlife Act 1972 in South Australia during 2020.

Harvest region	Reserve	Western Grey Kangaroo	Euro	Red Kangaroo
Western Agricultural	Venus Bay Conservation Park	44		
	Coffin Bay National Park	267		
	Lincoln National Park	103		
Western Pastoral	Gawler Ranges National Park	1,901	804	511
	Ironstone Hill Conservation Park	116		
Eastern Pastoral	Ikara-Flinders Ranges National Park	43	1,196	
Southern Agricultural	Para Wirra Conservation Park	60		
	Newland Head Conservation Park	9		
Total kangaroos		2,543	2,000	511

Research

DEW has committed to the following research project:

Spatial population models to inform kangaroo management in South Australia

Population (or 'demographic') models can be used to simulate the population dynamics of a given wildlife species over time, and to evaluate different management alternatives. This project has used 43 years of aerial kangaroo monitoring to fit spatial populations models for the two most common species: the Red Kangaroo (*Macropus rufus*) and Western Grey Kangaroo (*Macropus fuliginosus*). These data-driven models are being used to understand the population ecology of these species through the South Australian rangelands, including the maximum population growth rates obtained during periods of abundant resources (i.e., high rainfall and pasture availability), the survival rates of kangaroos during drought, and the long-range dispersal of animals across the landscape.

The models incorporate aerial survey data from 1978 to 2020, as well as spatial covariates including dominate habitat, elevation, mean annual rainfall and longitude and latitude. To date, the spatial models have been used to produce population estimates for Red Kangaroo and Western Grey Kangaroos in the established harvest area (pre- 1 January 2020 expansion area) for the 2021 calendar year. Further details of the models were provided in the 2021 Quota Report.

Published by the Department for Environment and Water
Government of South Australia
March 2020

Telephone +61 (8) 8204 9000
Facsimile +61 (8) 8115 1256

ABN 36702093234

Report prepared by:
Department for Environment and Water
Conservation and Wildlife Branch
National Parks and Wildlife Service Division

www.environment.sa.gov.au



With the exception of the Piping Shrike emblem, other material or devices protected by Aboriginal rights or a trademark, and subject to review by the Government of South Australia at all times, the content of this document is licensed under the Creative Commons Attribution 4.0 Licence. All other rights are reserved.

© Crown in right of the State of South Australia



**Government
of South Australia**

Department for
Environment and Water