

Statistics of animal use in research and teaching, Victoria

1 January 2015 to 31 December 2015
Report number 33



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INTRODUCTION

The Secretary of the Department of Economic Development, Jobs, Transport & Resources receives annual summary data from all licence holders using animals in research and teaching in Victoria under the *Prevention of Cruelty to Animals Act 1986* (the Act). An 'Animal Use Return' form must be submitted annually for each project using animals, in accordance with Regulation 100 of the Prevention of Cruelty to Animals Regulations 2008. This report aggregates the animal use returns to provide a picture of the animals used in Victoria for research and teaching 1 January–31 December 2015. Each project involving animal use must be approved by an Animal Ethics Committee.

Tables 1–12 provide data on animals used in scientific procedures. Table 13 provides data on 'specified animals' that were produced for scientific procedures but not used, or not yet used by 31 December. A specified animal is a guinea pig, or a rat, mouse or rabbit that is not bred in its native habitat, or a non-human primate. Their breeding must be licensed under Part 3 of the Act.

Further information on the data collected for this report may be found in the 2015 return guidelines, available at www.agriculture.vic.gov.au/ART.

TABLE 1: NUMBER OF ANIMALS USED, BY TYPE OF ANIMAL AND PROJECT PURPOSE, 2015

Animal Type	Project purpose					Total
	Animal management/production	Educational	Environmental	Human/animal biology	Human/animal health/welfare	
Amphibians		538	511	5127	15	6191
Birds (exotic captive)				29		29
Birds (exotic wild)		734	274	100		1108
Birds (native captive)	106	196		897	44	1243
Birds (native wild)		13 437	67 274	2561	1072	84 344
Birds, other		155		42	4	201
Cats (non-wild)		227		83	366	676
Cats (wild)		1	27			28
Cattle (domestic)	6167	3124	17 555	128	2319	29 293
Cephalopods	87	4				91
Crustaceans	11 534	1323	11 434	172		24 463
Dasyurids	28	99	559	55		741
Dogs (non-wild)	42	1227	56	361	1091	2777
Dogs, foxes (wild)		5	64	18		87
Domestic mammals, other		88	3	10	32	133
Exotic feral mammals, other		4				4
Exotic zoo mammals					8	8
Ferrets (lab)				8	2895	2903
Fish	3384	4731	192 899	47 813	8122	256 949
Goats (domestic)		6		15	39	60
Guinea pigs (lab)		50		337	4340	4727

Animal Type	Project purpose					Total
	Animal management/production	Educational	Environmental	Human/animal biology	Human/animal health/welfare	
Horses (domestic)		326		8	625	959
Koalas		6	517	2	61	586
Laboratory mammals, other		19		961		980
Lizards	14	408	1213	837		2472
Macaques		7		64	27	98
Macropods		61	1220	636	8	1925
Marmosets				84		84
Mice (lab)	8751	9541		280 059	110 860	409 211
Mice (wild)		38	186	1		225
Monotremes		1	75	26	10	112
Native mammals, other		209	2887	30	102	3228
Native rats, mice		134	3705	82	15	3936
Pigs (domestic)	5970	243		238	323	6774
Pigs (wild)			2			2
Possums, gliders		117	1770			1887
Poultry	16 797	499	99	308	67 321	85 024
Rabbits (lab)	11	42		266	789	1108
Rabbits (wild)	120	8	264			392
Rats (lab)	58	1090	24	15 110	7301	23 583
Rats (wild)		1	10			11
Reptiles, other			28			28
Seals, sealions		15	2073	3		2091
Sheep (domestic)	16 346	78 641	15	1427	10 182	106 611
Snakes		7	29	2	4	42

Animal Type	Project purpose					Total
	Animal management/production	Educational	Environmental	Human/animal biology	Human/animal health/welfare	
Turtles, tortoises	28	1	232			261
Whales, dolphins			300	7		307
Wombats		11	30			41
Total	69 443	117 374	305 335	357 907	217 975	1 068 034

TABLE 2: NUMBER OF ANIMALS USED, BY TYPE OF ANIMAL AND ANIMAL SOURCE, 2015

Animal Type	Animal source										Total
	Specified animal supplier	Other specified animal source	Animals in their natural habitat	Animals removed from natural habitat	Colony/zoo	Commercial supplier	Own derivation	Private donation	Privately owned animals on a farm	Other	
Amphibians			363	599	8	1310	3849			62	6191
Birds (exotic captive)						29					29
Birds (exotic wild)			1008	100							1108
Birds (native captive)			73	6	173	90	816	6		79	1243
Birds (native wild)			83 858	364	101					21	84 344
Birds, other			194			4	3				201
Cats (non-wild)						6	174			496	676
Cats (wild)			28								28
Cattle (domestic)						17 383	1266	10	10 143	491	29 293
Cephalopods			2	89							91
Crustaceans			11 520	2656		10 287					24 463
Dasyurids			659	11	60		11				741
Dogs (non-wild)						74	299	333	96	1975	2777
Dogs, foxes (wild)			59		18					10	87
Domestic mammals, other						19				114	133
Exotic feral mammals, other			4								4
Exotic zoo mammals					8						8
Ferrets (lab)						2903					2903
Fish			195 426	8462	24	2995	49 384			658	256 949
Goats (domestic)					3	4	14		36	3	60
Guinea pigs (lab)	4700	27									4727

Animal Type	Animal source										Total
	Specified animal supplier	Other specified animal source	Animals in their natural habitat	Animals removed from natural habitat	Colony/zoo	Commercial supplier	Own derivation	Private donation	Privately owned animals on a farm	Other	
Horses (domestic)					3	85	213	35	389	234	959
Koalas			578		7	1					586
Laboratory mammals, other							942			38	980
Lizards			1046	1361			62			3	2472
Macaques	98										98
Macropods			1230	93	57	300	244			1	1925
Marmosets	84										84
Mice (lab)	405 101	4110									409 211
Mice (wild)			224							1	225
Monotremes			97		15						112
Native mammals, other			3199		7					22	3228
Native rats, mice			3921	15							3936
Pigs (domestic)					3	744	300		5727		6774
Pigs (wild)				2							2
Possums, gliders			1847	9	30					1	1887
Poultry						34 874	1133		48 991	26	85 024
Rabbits (lab)	1083	25									1108
Rabbits (wild)			132							260	392
Rats (lab)	23 317	266									23 583
Rats (wild)			11								11
Reptiles, other			12			16					28
Seals, sealions			2073		18						2091
Sheep (domestic)						2993	11 728	28	91 504	358	106 611

Animal Type	Animal source										Total
	Specified animal supplier	Other specified animal source	Animals in their natural habitat	Animals removed from natural habitat	Colony/zoo	Commercial supplier	Own derivation	Private donation	Privately owned animals on a farm	Other	
Snakes			25	4	11		1			1	42
Turtles, tortoises			216	28		16				1	261
Whales, dolphins			307								307
Wombats			39							2	41
Total	434 383	4428	308 151	13 799	546	74 133	70 439	412	156 886	4857	1 068 034

TABLE 3: NUMBER OF ANIMALS USED, BY TYPE OF ANIMAL AND PROCEDURES, 2015

Animal Type	Procedure type														Total	
	Aversive stimuli	Central nervous system	Genetic modification	Immuno-modulatory methods	Infection induction	Ionising radiation	Long term attachment/insertion	Monoclonal antibody production	Neoplasia	Neuromuscular block, electro-immobilisation	Other disease	Polyclonal antibody production	Skin irritancy	Toxicity		Other procedure
Amphibians			972	2192	62										2965	6191
Birds (exotic captive)															29	29
Birds (exotic wild)							3								1105	1108
Birds (native captive)	19						73								1151	1243
Birds (native wild)							4344								80 000	84 344
Birds, other					4										197	201
Cats (non-wild)		5		60	27		70			2	6			10	496	676
Cats (wild)															28	28
Cattle (domestic)	423			1430	97		91					23		30	27 199	29 293
Cephalopods															91	91
Crustaceans							2519								21 944	24 463
Dasyurids	11						18								712	741
Dogs (non-wild)	39	1		64			5							58	2610	2777
Dogs, foxes (wild)															87	87
Domestic mammals, other															133	133
Exotic feral mammals, other															4	4

Animal Type	Procedure type														Total	
	Aversive stimuli	Central nervous system	Genetic modification	Immuno-modulatory methods	Infection induction	Ionising radiation	Long term attachment/insertion	Monoclonal antibody production	Neoplasia	Neuromuscular block, electro-immobilisation	Other disease	Polyclonal antibody production	Skin irritancy	Toxicity		Other procedure
Exotic zoo mammals							8									8
Ferrets (lab)				32	2821							42			8	2903
Fish	726		23 815		304		242		224	345	3425			200	227 668	256 949
Goats (domestic)												4			56	60
Guinea pigs (lab)		26	27	334	558		105					18		339	3320	4727
Horses (domestic)				88		58		15				34		70	694	959
Koalas							201								385	586
Laboratory mammals, other		55								19					906	980
Lizards	508														1964	2472
Macaques					15		7			2	40				34	98
Macropods							27								1898	1925
Marmosets		66					6								12	84
Mice (lab)	1736	6940	71 961	21 080	49 098	12 106	1420	420	42 327		49 660	1014	160	2013	149 276	409 211
Mice (wild)															225	225
Monotremes							59								53	112
Native mammals, other							320								2908	3228
Native rats, mice							208								3728	3936
Pigs (domestic)			81	116	68						2		19	34	6454	6774
Pigs (wild)							2									2

Animal Type	Procedure type														Total	
	Aversive stimuli	Central nervous system	Genetic modification	Immuno-modulatory methods	Infection induction	Ionising radiation	Long term attachment/insertion	Monoclonal antibody production	Neoplasia	Neuromuscular block, electro-immobilisation	Other disease	Polyclonal antibody production	Skin irritancy	Toxicity		Other procedure
Possums, gliders							22								1865	1887
Poultry	2161		208	778	12 847							110			68 920	85 024
Rabbits (lab)				460	2		6	34			204	158		36	208	1108
Rabbits (wild)															392	392
Rats (lab)	1251	877	159		172	42	993	54	107		5061	12		939	13 916	23 583
Rats (wild)															11	11
Reptiles, other					16										12	28
Seals, sealions							10								2081	2091
Sheep (domestic)	35	27		211	941	5	443				354	39		126	104 430	106 611
Snakes															42	42
Turtles, tortoises					16										245	261
Whales, dolphins															307	307
Wombats															41	41
Total	6909	7997	97223	26845	67048	12211	11202	523	42658	368	58752	1454	179	3855	730810	1 068 034

TABLE 4: NUMBER OF ANIMALS USED, BY TYPE OF ANIMAL AND IMPACT OF PROCEDURE, 2015

Animal Type	Procedure impact								Total
	Animal unconscious without recovery	Observational study, minor interference	Minor intervention, no anaesthesia	Minor operative procedure with recovery	Minor physiological challenge	Surgery with recovery	Major physiological challenge	Death as an end point	
Amphibians	781	484	764	18	980	3102	62		6191
Birds (exotic captive)			29						29
Birds (exotic wild)		911	147		50				1108
Birds (native captive)	24	334	116	6	763				1243
Birds (native wild)		75 525	8400	30	389				84 344
Birds, other	3	194			4				201
Cats (non-wild)	24	198	311	23		60	60		676
Cats (wild)		28							28
Cattle (domestic)	8	21 635	7095	83	472				29 293
Cephalopods		2	89						91
Crustaceans	3	9634	3208	11 534	84				24 463
Dasyurids		310	425	6					741
Dogs (non-wild)	106	1268	1273	105	8	17			2777
Dogs, foxes (wild)		87							87
Domestic mammals, other		48	50	6		29			133
Exotic feral mammals, other		4							4
Exotic zoo mammals		8							8
Ferrets (lab)	24	40			2723		116		2903
Fish	11 774	26 689	188 965	8444	18 833	89	2155		256 949
Goats (domestic)		20	40						60
Guinea pigs (lab)	515	372	18	82		200	2032	1508	4727

Animal Type	Procedure impact								Total
	Animal unconscious without recovery	Observational study, minor interference	Minor intervention, no anaesthesia	Minor operative procedure with recovery	Minor physiological challenge	Surgery with recovery	Major physiological challenge	Death as an end point	
Horses (domestic)		328	416	18	154		43		959
Koalas		383	103	100					586
Laboratory mammals, other	19	815	91			55			980
Lizards	128	257	1958		129				2472
Macaques	2	11	7	67		11			98
Macropods	596	1199	69	47		14			1925
Marmosets	14					70			84
Mice (lab)	82 737	34 249	96 003	34 501	54 209	35 417	65 454	6641	409 211
Mice (wild)		1	224						225
Monotremes		31	81						112
Native mammals, other		1164	2061	3					3228
Native rats, mice		2768	1168						3936
Pigs (domestic)	108	435	5959	58	52	72	90		6774
Pigs (wild)		2							2
Possums, gliders		1373	503	8	3				1887
Poultry	12 876	66 914	1248		3052		934		85 024
Rabbits (lab)	621	23	95	2	67	173	127		1108
Rabbits (wild)	380	12							392
Rats (lab)	7864	750	2616	2877	2359	6072	1045		23 583
Rats (wild)			11						11
Reptiles, other			12				16		28
Seals, sealions		1002	1079	10					2091
Sheep (domestic)	1391	81 311	17 036	271	5936	666			106 611

Animal Type	Procedure impact							Total	
	Animal unconscious without recovery	Observational study, minor interference	Minor intervention, no anaesthesia	Minor operative procedure with recovery	Minor physiological challenge	Surgery with recovery	Major physiological challenge		Death as an end point
Snakes	4	5	33						42
Turtles, tortoises		208	37				16		261
Whales, dolphins		307							307
Wombats		41							41
Total	120 002	331 380	341 740	58 299	90 267	46 047	72 150	8149	1 068 034

TABLE 5: NUMBER OF ANIMALS USED, BY TYPE OF ANIMAL AND PROJECT BENEFIT, 2015

Animal Type	Project benefit														Total
	Biological products	Biology/ physiology	Demonstration	Diseases, animal	Diseases, human	Diseases, zoonotic	Domestic animal management	Environment	Pest management	Regulatory testing	Technique development	Training	Wildlife management	Xenotransplantation	
Amphibians		5436	26					282	62		7	144	234		6191
Birds (exotic captive)											29				29
Birds (exotic wild)		100						177					831		1108
Birds (native captive)		875						30			36	152	150		1243
Birds (native wild)		1442	183	681		716		55 368			268	150	25 536		84 344
Birds, other				7							155		39		201
Cats (non-wild)		38	123	143	49	89	45			100		89			676
Cats (wild)								6					22		28
Cattle (domestic)	78	423	63	1144			6846	17 575		44	1060	2060			29 293
Cephalopods			2								2		87		91
Crustaceans		104	1380					1907			6		21 066		24 463
Dasyurids		5						414			6	41	275		741
Dogs (non-wild)	10	226	79	667	20	143	111	6		424	131	959	1		2777
Dogs, foxes (wild)		18						25			1		43		87
Domestic mammals, other			20			3		3		29		78			133
Exotic feral mammals, other											4				4
Exotic zoo mammals			8												8
Ferrets (lab)	24	8		2	2815	54									2903

Animal Type	Project benefit														Total
	Biological products	Biology/ physiology	Demonstration	Diseases, animal	Diseases, human	Diseases, zoonotic	Domestic animal management	Environment	Pest management	Regulatory testing	Technique development	Training	Wildlife management	Xenotransplantation	
Fish		37 736	216		11 651		1140	187 587	1077		2512	1987	13 043		256 949
Goats (domestic)		4	17			36		3							60
Guinea pigs (lab)		200	3	1189	3277					17		41			4727
Horses (domestic)	6	3	35	314	46		105	3		162	42	243			959
Koalas		2						278					306		586
Laboratory mammals, other		930	19		31										980
Lizards		590	26					967			22	90	777		2472
Macaques	8	28			55							7			98
Macropods		636	1					1146			24	20	98		1925
Marmosets		84													84
Mice (lab)	1512	137 259	695	15 732	233 789	1550	6640			180	2432	7672		1750	409 211
Mice (wild)								77				7	141		225
Monotremes								26				1	85		112
Native mammals, other				102				1528			56	12	1530		3228
Native rats, mice			11		15			2866			1	55	988		3936
Pigs (domestic)	5	155	10	151	144	32	5984	3		108	37	145			6774
Pigs (wild)								2							2
Possums, gliders			1					1651			43	20	172		1887
Poultry	6614	465	52	4952	750	95	66 212			5416	215	253			85 024
Rabbits (lab)	114	263		478	169					42	10	32			1108
Rabbits (wild)									380		8		4		392
Rats (lab)	121	10 531	163	268	10 509		52			1035	57	847			23 583
Rats (wild)								2			1		8		11

Animal Type	Project benefit														Total
	Biological products	Biology/ physiology	Demonstration	Diseases, animal	Diseases, human	Diseases, zoonotic	Domestic animal management	Environment	Pest management	Regulatory testing	Technique development	Training	Wildlife management	Xenotransplantation	
Reptiles, other									16				12		28
Seals, sealions		3						1094					994		2091
Sheep (domestic)	904	1484	46	3253	705		20 048	15		994	789	78 373			106 611
Snakes	4							19			3		16		42
Turtles, tortoises								9	16			1	235		261
Whales, dolphins													307		307
Wombats			2					30			9				41
Total	9400	199 048	3181	29 083	264 025	2718	107 183	273 099	1551	8551	7966	93 479	67 000	1750	1 068 034

TABLE 6: NUMBER OF ANIMALS USED, BY TYPE OF ANIMAL AND DEATHS, 2015

Animal Type	Animal death			Total animals
	Death as an endpoint	Other deaths	Total deaths	
Amphibians		5031	5031	6191
Birds (exotic captive)				29
Birds (exotic wild)				1108
Birds (native captive)		128	128	1243
Birds (native wild)		56	56	84 344
Birds, other		7	7	201
Cats (non-wild)		72	72	676
Cats (wild)				28
Cattle (domestic)		125	125	29 293
Cephalopods		83	83	91
Crustaceans		10 394	10 394	24 463
Dasyurids		12	12	741
Dogs (non-wild)		132	132	2777
Dogs, foxes (wild)				87
Domestic mammals, other		6	6	133
Exotic feral mammals, other				4
Exotic zoo mammals				8
Ferrets (lab)		559	559	2903
Fish		45 674	45 674	256 949
Goats (domestic)		37	37	60
Guinea pigs (lab)	1508	2421	3929	4727
Horses (domestic)		8	8	959
Koalas		30	30	586
Laboratory mammals, other		961	961	980

Animal Type	Animal death			Total animals
	Death as an endpoint	Other deaths	Total deaths	
Lizards		226	226	2472
Macaques		10	10	98
Macropods		622	622	1925
Marmosets		58	58	84
Mice (lab)	6641	357 651	364 292	409 211
Mice (wild)				225
Monotremes		2	2	112
Native mammals, other		2	2	3228
Native rats, mice		3	3	3936
Pigs (domestic)		399	399	6774
Pigs (wild)				2
Possums, gliders		5	5	1887
Poultry		18 893	18 893	85 024
Rabbits (lab)		1006	1006	1108
Rabbits (wild)		380	380	392
Rats (lab)		20 607	20 607	23 583
Rats (wild)				11
Reptiles, other		16	16	28
Seals, sealions				2091
Sheep (domestic)		4593	4593	106 611
Snakes		4	4	42
Turtles, tortoises		18	18	261
Whales, dolphins				307
Wombats				41
Total	8149	470 231	478 380	1 068 034

TABLE 7: NUMBER OF ANIMALS USED, BY PROJECT PURPOSE AND PROJECT BENEFIT, 2015

Overall purpose	Project benefit														Total
	Biological products	Biology/ physiology	Demonstration	Diseases, animal	Diseases, human	Diseases, zoonotic	Domestic animal management	Environment	Pest management	Regulatory testing	Technique development	Training	Wildlife management	Xenotransplantation	
Educational objectives	205	1705	2969	160	16		385	663			4443	93 218	13 610		117 374
Environmental objectives		667	154	104				265 821	1431			68	37 090		305 335
Improvement of animal management / production	207	1058	16	1284	1221		45 854	424	120	2649	1887		14 723		69 443
Maintenance/ improvement of human/ animal health/ welfare	8681	8121	11	21 115	111 163	1017	59 777	20		5902	1456	168	544		217 975
Understanding of human/animal biology	307	187 497	31	6420	151 625	1701	1167	6171			180	25	1033	1750	357 907
Total	9400	199 048	3181	29 083	264 025	2718	107 183	273 099	1551	8551	7966	93 479	67 000	1750	1 068 034

TABLE 8: NUMBER OF ANIMALS USED, BY PROJECT PURPOSE AND PROCEDURE IMPACT, 2015

Overall purpose	Procedure impact							Total	
	Animal unconscious without recovery	Observational study, minor interference	Minor intervention, no anaesthesia	Minor operative procedure with recovery	Minor physiological challenge	Surgery with recovery	Major physiological challenge		Death as an end point
Educational objectives	6673	95 458	12 731	727	88	56	1641		117 374
Environmental objectives	2159	106 292	195 392	155	628	89	620		305 335
Improvement of animal management/production	2445	22 253	25 222	11 787	6627	1047	62		69 443
Maintenance/improvement of human/animal health/welfare	29 563	62 497	27 420	17 385	23 582	19 583	29 796	8149	217 975
Understanding of human/animal biology	79 162	44 880	80 975	28 245	59 342	25 272	40 031		357 907
Total	120 002	331 380	341 740	58 299	90 267	46 047	72 150	8149	1 068 034

TABLE 9: NUMBER OF ANIMALS USED, BY PROJECT PURPOSE AND PROCEDURE, 2015

Overall purpose	Procedure														Total	
	Aversive stimuli	Central nervous system	Genetic modification	Immuno-modulatory methods	Infection induction	Ionising radiation	Long term attachment /insertion	Monoclonal antibody production	Neoplasia	Neuro-muscular block, electro-immobilisation	Other disease	Polyclonal antibody production	Skin irritancy	Toxicity		Other
Educational objectives	36	12	206	15	32		105				2				116 966	117 374
Environmental objectives	448				398		3990			345				200	299 954	305 335
Improvement of animal management/ production	2580		2132	809	2821		2638					11	19		58 433	69 443
Maintenance /improvement of human/ animal health/ welfare	581	1586	29 359	8724	34 138	4131	734	75	10 965		20 020	779	160	2821	103 902	217 975
Understanding of human/ animal biology	3264	6399	65 526	17 297	29 659	8080	3735	448	31 693	23	38 730	664		834	151 555	357 907
Total	6909	7997	97 223	26 845	67 048	12 211	11 202	523	42 658	368	58 752	1454	179	3855	730 810	1 068 034

TABLE 10: NUMBER OF ANIMALS USED BY PROJECT PURPOSE AND ANIMAL SOURCE, 2015

Overall purpose	Animal source										Total
	Specified animal supplier	Other specified animal source	Animals in their natural habitat	Animals removed from natural habitat	Colony/ zoo	Commercial supplier	Own derivation	Private donation	Private animals on farm	Other	
Educational objectives	10 488	242	17 962	551	98	2887	3827	348	79 505	1466	117 374
Environmental objectives	24		284 425	2366	166	17 489	22		500	343	305 335
Improved animal management/production	8798	22	386	4498	141	14 030	9131		31 887	550	69 443
Maintenance/improvement human/animal health/welfare	122 700	617	1268	384	70	35 247	11 970	61	44 220	1438	217 975
Understanding of human/animal biology	292 373	3547	4110	6000	71	4480	45 489	3	774	1060	357 907
Total	434 383	4428	308 151	13 799	546	74 133	70 439	412	156 886	4857	1 068 034