Animal Research
Statistics Tasmania

ANNUAL REPORT

September 2008

This report has been compiled in accordance with Section 35 of the *Animal Welfare Act 1993* from animal usage statistics submitted by institutions licensed under the Act for the period 1 January 2007 to 31 December 2007.

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SUMMARY

This report details animal use in Tasmania from 1st January to 31st December 2007. The summaries and analyses in this report are compiled from raw project data submitted by licensed institutions. A total of 32 institutions were licensed during the reporting period, of which 17 conducted research in Tasmania including 5 interstate institutions. No overseas institutions conducted research in Tasmania during 2007.

Data was collected on live, non-human vertebrates including fully metamorphosed juveniles and complies with the nationally agreed definition for the collation of statistics of animal use for scientific purposes. This report also uses the animal category and type lists agreed during 2006. Where this impacts on comparisons, explanations are included.

During 2007, 125 individual research and teaching projects used a total of 87,344 live vertebrates. This is a substantial reduction on 2006 (170 projects using 101,650 animals), and continues the decline in the number of animals used in research and teaching in Tasmania observed for several years.

Aquatic animals were the most commonly used category (66.2%) followed by domestic mammals represented entirely by cattle and sheep (14.8 %). There was a greater than three-fold increase in the number of native mammals used and an 87% increase in the number of native mammal projects. This was due in major part to the inclusion of marine mammals in the category. These were previously reported within the aquatic animal category.

Little change was observed in the distribution of purposes or procedures during 2007 compared to the 2006 report. Notable exceptions were the 44% reduction in the number of management and production projects and a 20% increase in educational projects (Table 6). The procedures with lowest apparent welfare impacts (Observation with minor interference, Minor conscious procedure and Minor physiological challenge) were used most commonly. For the second year in a row, no project used Death as an end point as a procedure.

1. INTRODUCTION

1.1 Regulation of animal research in Tasmania

Animal research in Tasmania is regulated via several mechanisms.

(a) Animal Research Legislation

Part 4 of the *Animal Welfare Act 1993* deals with animal research. Since its proclamation on 1st April 1996, all research institutions are required to be licensed by the Minister to conduct animal research in Tasmania. Compliance with the *Australian Code of Practice for the Care and Use of Animals for Scientific Purposes* (the approved research Code of Practice) is a core condition of research licences nationally. The current edition of the Code (7th Edition 2004) was approved in November 2004 for use in Tasmania.

Provided research and teaching is properly approved and monitored within a licensed institution which complies with the Code, the use of animals for research and teaching purposes is protected from sections 8 and 9 of the *Animal Welfare Act 1993 (*Cruelty and Aggravated cruelty). Inspectors appointed under the Animal Welfare Act 1993 monitor compliance with the Code.

The research Code of Practice provides guidance for investigators, teachers, institutions, AECs and all involved in the humane use of animals and specifies safeguards. A decision to use animals must be properly justified. Animals may only be used after due consideration to the ***replacement*** of animals with other methods; the ***reduction*** in the number of animals used; and the ***refinement*** of techniques used to reduce the impact on animals (the essential "3Rs" of research).

Research project proposals are examined, approved and monitored by a duly constituted Animal Ethics Committee (AEC) of the Institution. Institutions that are too small to justify or be sufficiently resourced to have their own AEC may use the services of another institution's AEC. For instance, the DPIW AEC oversaw 18 other institutions in 2007 of which 10 used animals in the reporting period.

The Act allows animal research to be conducted by institutions in a self-regulatory environment. It is, however subject to inspection by the Inspector of Animal Research.

(b) Annual reporting

Institutions are required to provide an annual report to the Minister on their activities in relation to animal research according to section 35 of the *Animal Welfare Act 1993*. In accordance with the Act, the report is to contain *the numbers and types of animals used* and *the types of animal research carried out*. A report summarising the institutional reports is to be tabled in both Houses of Parliament annually.

(c) The Animal Research Inspector

The Minister has appointed this person in accordance with the provisions of the Act. The inspector advises the Minister on matters relating to the granting and cancellation of licenses, and monitors the conduct of the AEC's and animal holding facilities within each institution and collates annual reports.

(d) The Animal Welfare Advisory Committee

AWAC also advises the Minister on matters relating to the granting and cancellation of licences. Through their membership on the Advisory Committee, animal welfare organisations and the Australian Veterinary Association are able to have input into animal research matters.

(e) Scientific Permits for wildlife and fisheries

Institutions intending to use wildlife in research must also apply to the Resource Management and Conservation Division, DPIW and the Inland Fisheries Service for appropriate permits.

1.2 Reporting parameters used in Tasmania

The reporting parameters are covered in a statistics reporting format developed by the Code Liaison Group (CLG) of the National Health and Medical Research Council for the purpose of compiling national statistics. It was endorsed by AWAC as suitable for State reports as well, to avoid any duplication of effort.

The term 'animals' covers fully metamorphosed juveniles, embryos in the latter half of gestation, eggs in the latter half of incubation and larval fish that can feed independently. This definition complies with the National Statistics of Animal Use for Scientific Procedures. During 2007, regulators from all States agreed on an amended animal category and type list with animals grouped into more logical categories. This list was supported by the CLG and is now used nationally. It should be noted that individual States collect data on animals that fall within their legislative scope, for instance fish or cephalopods may not be reported by one or more jurisdictions.

The Tasmanian *Animal Welfare Act 1993* only includes live vertebrates, however cephalopods may be included in this report for two reasons. Firstly the approved Code of Practice for the conduct of animal research in Tasmania includes cephalopods in its scope. Secondly, their inclusion does not unduly affect the overall picture of animal use in the State for the reporting period.

Data is collated from annual project progress or final reports submitted by the responsible investigator for each project during the 2007 calendar year. The calendar year reporting period is now used by most agencies contributing to the national animal use statistics.

1.2.1 Explanation of the reporting format

The statistics format requires the selection of one option from the number of choices in each of the three main areas listed below (purposes, procedures and animals). Where animals are used in multiple projects, each project is reported separately. Where an animal undergoes multiple procedures within the same project, the procedure with the highest impact on the animal is reported.

1.2.2 Notes on the application of various categories

Purpose of Project –categorises the reason/s for the study.

Understand Biology eg comparative anatomy studies, animal physiology, adaptations of wild animals, wildlife survival studies.

Health and Welfare eg cancer research, drug therapy, residue and toxin testing, vaccine development.

Management or Production eg effect of nutrition supplements, evaluating husbandry techniques, animal production trials, drug validation tests.

Education eg classroom studies on behaviour or physiology.

Environmental Study eg population surveys, acquisition of museum specimens.

Procedures used – categorises the severity of the procedures used (ie the impact on the animal).

The aim of the study will determine the most appropriate category eg if the aim is to kill mice for teaching purposes, then that activity will be categorised as 'animal unconscious no recovery'. If animals are euthanased when they start to show distress during a study where for example, an infection has been deliberately induced, then that study will be included under 'Major physiological challenge'. It will not be a 'Death as an endpoint' procedure since the aim of the study was not to deliberately use death as a parameter.

The following procedures were used during 2007:

Observation Involving Minor Interference: studies in which the normal activities of animals are impacted on.

Examples:
Wildlife studies involving repeated spotlighting or intrusion into groups of animals or nursing animals
Feeding trial, such as Digestible Energy determination of feed in a balanced diet
Behavioural study with minor environmental manipulation
Teaching of normal, non-invasive husbandry such as handling, grooming, etc
Production of products, such as hormones or drugs, in milk or eggs from genetically modified animals that are subject to normal husbandry procedures only

Animal unconscious without Recovery: animal is rendered unconscious under controlled circumstances (ie. not in a field situation) with as little pain or distress as possible. Capture methods are not required. Any pain is minor and brief and does not require analgesia. Procedures are carried out on the unconscious animal that is then killed without regaining consciousness.

Examples:

Laboratory animals killed humanely for dissection, biochemical analysis
Teaching surgical techniques on live, anaesthetised animals that are not allowed to recover following the procedure.

Minor conscious procedure: animal is subjected to minor procedures that would normally not require anaesthesia or analgesia. Any pain is minor and analgesia usually unnecessary, although some distress may occur as a result of trapping or handling.

Examples:

Tail tipping and toe clipping for identification of new line GM animals
Injections, blood sampling in conscious animal
Minor dietary or environmental deprivation or manipulation, such as feeding nutrient-deficient diets for short periods
Trapping and release as used in species impact studies, etc
Trapping and humane euthanasia for collection of specimens
Stomach tubing, branding, disbudding, shearing, etc

Minor operative procedure with recovery: animal is rendered unconscious, with as little pain or distress as possible. A minor procedure such as cannulation or skin biopsy is carried out and the animal allowed to recover. Depending on the procedure, pain may be minor or moderate and post-operative analgesia may be appropriate.

Field capture using chemical restraint methods is also included here.

Examples:
Biopsies under anaesthesia or sedation
Cannulations under anaesthesia or sedation
Sedation/anaesthesia for relocation, examination or injections/blood sampling

Major surgery with Recovery: generally animal is rendered unconscious, with as little pain or distress as possible. A major procedure such as abdominal or orthopaedic surgery is carried out and the animal allowed to recover. Post operative pain is usually considerable and at a level requiring analgesia.

Examples:
Orthopaedic surgery
Abdominal or thoracic surgery
Transplant surgery
Mulesing, surgical castration without anaesthesia

Minor physiological challenge: animal remains conscious for some or all of the procedure. There is interference with the animal's physiological or psychological processes. The challenge may cause only a small degree of pain/distress or any pain/distress is quickly and effectively alleviated.

Examples:
Minor infection, minor or moderate phenotypic modification, early oncogenesis
Arthritis studies with pain alleviation
Prolonged deficient diets, induction of metabolic disease
Polyclonal antibody production
Antiserum production

Major physiological challenge: animal remains conscious for some or all of the procedure. There is interference with the animal's physiological or psychological processes. The challenge causes a moderate or large degree of pain/distress which is not quickly or effectively alleviated.

Examples:
Major infection, major phenotypic modification, oncogenesis without pain alleviation
Arthritis studies with no pain alleviation, uncontrolled metabolic disease
Isolation or environmental deprivation for extended periods
Monoclonal antibody raising in mice

Animal Categories used in the report

Amphibians

Aquatic animals (non-mammalian)

Birds

Domestic mammals (including livestock species)

Exotic feral mammals

Exotic zoo animals

Native mammals (including marine mammals)

Primates

Reptiles

2. LICENSED RESEARCH INSTITUTIONS

32 institutions were licensed to conduct animal research in Tasmania during 2007 and are listed below:

Applied Ecological Solutions, Victoria (no animal use in 2007)

Aquenal Pty Ltd

Australian Antarctic Division

Australian National University, Australian Capital Territory (no animal use in 2007)

Biosis Research Pty Ltd (no animal use in 2007)

Birds Tasmania (no animal use in 2007)

Central North Field Naturalists Inc. (no animal use in 2007)

CSIRO Marine and Atmospherics Division

Department of Primary Industries and Water. The licence covers research conducted by the Resource Management and Conservation Division; Primary Industries Division and Biosecurity and Product Integrity Division, Inland Fisheries Service and the Tasmanian Institute of Agricultural Research.

Richard Donaghey (independent researcher)

Forestry Tasmania

Freshwater Systems Pty Ltd

Friends of Knocklofty Bushcare Group (no animal use in 2007)

GHD Pty Ltd, Queensland (no animal use in 2007)

Hydro Tasmania

Jurox Pty Ltd, New South Wales (no animal use in 2007)

La Trobe University, Victoria

Monash University, Victoria (no animal use in 2007)

Murdoch University, Western Australia

Novartis Animal Health Australasia Pty Ltd, New South Wales (no animal use in 2007)

Pfizer Australia Pty Ltd, Victoria (no animal use in 2007)

Sinclair Knight Merz, Victoria

Tasmanian Museum and Art Gallery

Tasmanian Field Naturalist's Club Inc. (no animal use in 2007)

Tyenna Peak Nursery

University of Canterbury, New Zealand (no animal use in 2007)

University of Queensland, Queensland

University of Sydney, New South Wales

University of Tasmania

University of Western Australia, Western Australia (no animal use in 2007)

Veterinary Health Research, New South Wales (no animal use in 2007)

William Wakefield (independent researcher)

3. ANIMAL RESEARCH ACTIVITIES FOR 2007

A total of 32 institutions were licensed during the reporting period, of which 17 conducted research in Tasmania including 5 interstate institutions. No overseas institutions conducted research in Tasmania during 2007. Table 1 lists the institutions that used animals and the categories and numbers of animals involved.

The Department of Primary Industries and Water's internal animal research activities are reported under the various areas responsible for specific projects. These were the Primary Industries Division, the Diagnostic Services and Animal Health and Welfare Branches within the Biosecurity and Product Integrity Division, Inland Fisheries Service and the Tasmanian Institute of Agricultural Research.

During 2007, 125 individual research and teaching projects used a total of 87,344 live vertebrates. This is a reduction of 26% in projects and 14% in animals on 2006 figures (170 projects using 101,650 animals). While the number of animals used has been declining over several years, the number of projects using animals has varied. In 2005, 127 projects used animals compared to 170 projects in 2006 and 125 in 2007 reflecting changes in research activity levels in the State.

The University of Tasmania was the most active institution in Tasmania during 2007 with 84 projects using 29,551 animals. This represented a 41% reduction in animals used compared to 2006 (50,157).

The Department of Primary Industries and Water's Animal Ethics Committee (AEC) supervised 33 projects that reported animal use totalling 43,171 (49.4.5%) animals. Of these, 16 projects using 35,261 animals were conducted by 10 external institutions, that is those licensed institutions that do not have the resources to form their own AECs.

As has been the case for several years aquatic animals were the most commonly used category in 2007 with 57,849 head or 66.2% of all animals in 47 projects (Table 2). Fish were the only animal type reported within the aquatic animal category (Table 3). This reflects the continuing interest in aquatic animal research in Tasmania. The nature of aquatic animal projects such as large ocean surveys and aquaculture research and teaching contributes to the relatively large number of animals involved.

CSIRO Marine and Atmospherics Division were the largest users of fish (31,552) followed by the University of Tasmania (22,437). The majority of fish (22,545) were subjected to minor conscious procedures (Table 5). A significant number (14,727) were subjected to procedures rendering the fish unconscious without recovery (Table 5). These fish were part of fisheries surveys and teaching.

The second most commonly used category of animal was the domestic mammal (12,947 or 14.8 %, Table 1). Within this category, only cattle and sheep were used, and then predominantly in health and welfare or management and production projects (Table 4). The majority (12,867) were subjected to minor conscious procedures or observations with minor interference (Table 5).

The remaining animal categories used were birds (7,316 or 8.4%), native mammals (4,101 or 4.7%), laboratory mammals (3,865 or 4.4%), reptiles (1121 or 1.3%) and amphibians (145 or 0.2%) (Table 1). No exotic feral mammals or cephalopods were used in 2007.

The number of animals used declined in all categories except for native mammals. Native mammals recorded a greater than 3 fold increase from 1,274 animals in 2006 to 4,101 in 2007 (Table 1). Most of the increase in native mammal numbers was due to the inclusion of marine mammals (totalling 2,014 animals) in the native mammal category. In previous years marine mammals have been included in the aquatic animal category where they represented a very small proportion of that population. It was agreed nationally that their inclusion with native mammals was more logical.

While the proportion of projects using birds (11.2%) was similar to 2006 (10.1%), there were 33% fewer birds (7,316) in 28% fewer bird projects (14) conducted in 2007. Most bird projects are studies of specific populations conducted over several years using observation or banding, a minor conscious procedure. Thus variations in wild bird populations as well as research interest in the area will impact significantly on bird research statistics.

Comparisons of the proportion of projects within the various animal, purpose and procedure categories between 2006 and 2007 have been summarised in Table 6. It provides a snapshot of relative research interest over a two-year period. In 2007, there was a large increase in the relative number of projects using native mammals (87%) and laboratory animals (27%). Domestic mammal projects were represented by the old 'stock animal' category and declined by 31% in 2007.

Of the major changes in purposes, a 44% reduction in 'management and production' projects and a 20% increase in 'educational' projects was reported. The level of interest in 'environmental' and 'health and welfare' studies increased significantly between 2005 and 2006. In 2007 however, the proportion of projects in these areas was similar in comparison to 2006.

Within procedures in 2007, there was a 40% increase in the proportion of 'observational studies', a 30% increase in 'operative procedures with recovery' and a 12.8% increase in the 'animal unconscious without recovery' category compared to 2006.

A comparison was made of procedures broadly grouped according to apparent welfare impact with the observational, minor conscious and minor physiological procedures having less and the minor operative, major physiological, surgery with recovery and animal unconscious without recovery as having more impact. It should be noted that while several procedures may be used within a research protocol, the reported procedure used for a particular animal must be the one with highest impact if the animal was subjected to several different procedures. There was an increase in the number of animals subjected to the higher impact procedures in 2007 (40% compared to 25% in 2006).

4.TABLES

All summarised data is tabulated in this section.

Table 1. Summary of animal categories used by institutions in 2007

Institution	*Project number*	*Amphibians*	*Aquatic animals*	*Birds*	*Domestic Mammals*	*Lab Mammals*	*Native mammals*	*Reptiles*	*Total*	*%*
AAD	1						1980		1980	2.27%
AH&W	1				60				60	0.07%
Aquenal	1		63						63	0.07%
BCB	8			5843			236		6079	6.96%
CSIRO	6		31552						31552	36.12%
Donaghey	1			169					169	0.19%
DSBr	3		570			2			572	0.65%
Forestry	1						26		26	0.03%
Freshwater	1		2247						2247	2.57%
Hydro	1			24					24	0.03%
IFS	2		928						928	1.06%
LaTrobe	2			634					634	0.73%
Murdoch	1		1				4		5	0.01%
PI Div	2				51				51	0.06%
SKM	2		51						51	0.06%
TIAR	3				220				220	0.25%
TMAG	1						43		43	0.05%
Tyenna	1						858		858	0.98%
UQld	1						21		21	0.02%
USyd	1				11982				11982	13.72%
UTAS	84	145	22437	418	634	3863	933	1121	29551	33.83%
Wakefield	1			228					228	0.26%
Total	125	145	57849	7316	12947	3865	4101	1121	87344	
%		0.17%	66.23%	8.38%	14.82%	4.43%	4.70%	1.28%	100.0%	
2006 Numbers	170	0	69828	11029	13985	4178	1274	1351		
Change		N/A	-17%	-33%	-7.4%	-7.5%	+222%	-17%		

Table 2. Distribution of animal categories, purposes and procedures within projects in 2007

Part 1 ***Animal Category***	*Animals per project*	*Number of projects using each animal category*	*% Animals*	*% Projects (n=125)*
Amphibians	145	1	0.2%	0.8%
Aquatic animals	57849	47	66.2%	37.6%
Birds	7316	14	8.4%	11.2%
Domestic mammals	12947	13	14.8%	10.4%
Lab mammals	3865	23	4.4%	18.4%
Native mammals	4101	25	4.7%	20.0%
Reptiles	1121	8	1.3%	6.4%
Totals	87344	131*		

*A project may use multiple animal categories. Number of individual projects reported = 125

Part 2 ***Research purposes***	*Animals per project*	*Projects per Purpose*	*% Animals*	*% Projects (n=125)*
Education	1879	17	2.2%	13.6%
Environmental study	12682	19	14.5%	15.2%
Health and welfare	22049	25	25.2%	20.0%
Management or Production	17038	17	19.5%	13.6%
Understanding biology	33696	47	38.6%	37.6%
Totals	87344	125		

Table 2 continued.

Part 3 ***Research procedures***	*Animals per project*	*Projects per Procedure*	*% Animals*	*% Projects (n=125)*
Observation with minor interference	7072	38	8.1%	30.4%
Minor conscious procedure	45441	43	52.0%	34.4%
Minor operative procedure with recovery	13290	13	15.2%	10.4%
Minor physiological challenge	255	6	0.3%	4.8%
Major Physiological challenge	4986	5	5.7%	4.0%
Animal unconscious no recovery	16298	34	18.7%	27.2%
Surgery with recovery	2	1	0.0%	0.8%
Totals	87344	140*		

*A project may have multiple procedures. Number of individual projects reported = 125.

Table 3. Summary of animal types used by institutions in 2007

Institution	AAD	AH&W	Aquenal	BCB	CSIRO	Donaghey	DSBr	Forestry	Freshwater	Hydro	IFS	LaTrobe	Murdoch	PI Div	SKM	TIAR	TMAG	Tyenna	UQld	USyd	UTAS	Wakefield
Amphibians																				145		
Aquatic Animals - Fish					31552		570		2247		928		1		51						22437	
Birds - Exotic Wild					169																	
Native Non-endemic																				4		
Native wild				5843								634									414	228
Other birds										24												
Domestic Mammals – Cattle		60												45		220					180	
Sheep														6						11982	454	
Lab Mammals – Mice																					2794	
Rabbits						2															11	
Rats																					1058	

Table 3. Continued from last page	AAD	AH&W	Aquenal	BCB	CSIRO	Donaghey	DSBr	Forestry	Freshwater	Hydro	IFS	LaTrobe	Murdoch	PI Div	SKM	TIAR	TMAG	Tyenna	UQld	USyd	UTAS	Wakefield
Native Mammals – Bandicoots																				3		
Ceteceans				33																		
Dasyurids				190													43				555	
Echidnas																					19	
Macropods				12				19													167	
Native Rats and Mice												1								5		
Other Native Animals																		21				
Platypus													3									
Possums and Gliders								7									858			184		
Seals	1980			1																		
Reptiles – Lizards																					1120	
Snakes																					1	

Table 4. Purposes within each animal category in 2007

Purpose	**Amphibians**	**Aquatic animals**	**Birds**			
	Amphibians	*Fish*	*Native Non-endemic*	*Exotic Wild*	*Native Wild*	*Other birds*
Education		1701	3			
Environmental Study	145	4791	1	169	6698	
Health and welfare		8658				24
Management or production		16144				
Understanding biology		26555			421	

Purpose	**Domestic mammals**		**Laboratory mammals**			**Reptiles**	
	Cattle	*Sheep*	*Mice*	*Rabbits*	*Rats*	*Lizards*	*Snakes*
Education		6	105	7	17		1
Environmental Study							
Health and welfare	120	11982	60	2	110		
Management or Production	385	434	73				
Understanding Biology		20	2556	4	931	1120	

Table 4 continued.

Purpose	**Native mammals**									
	Macropods	***Native Rats and Mice***	***Possums and Gliders***	***Bandicoots***	***Dasyurids***	***Echidnas***	***Platypus***	***Seals***	***Ceteceans***	***Other Native Animals***
Education	6	5	2							
Environmental Study	124	1	155	3	583	8	3	1		
Health and welfare	12		858		190				33	
Management or Production	41		34							
Understanding Biology	15				15	11		1980		21

Table 5. **Procedures used within each animal category in 2007**

	Amphibians	**Aquatic animals**	**Birds**			
Procedure	*Amphibians*	*Fish*	*Native Non-endemic*	*Exotic Wild*	*Native Wild*	*Other birds*
Observation with minor interference		2656	4		699	24
Minor conscious procedure	145	22545		169	6413	
Minor operative procedure with recovery		13233				
Minor physiological challenge		4686			7	
Animal unconscious no recovery		14727				
Surgery with recovery		2				

Table 5 continued.

Procedure	**Domestic mammals**		**Laboratory mammals**			**Reptiles**	
	Cattle	*Sheep*	*Mice*	*Rabbits*	*Rats*	*Lizards*	*Snakes*
Observation with minor interference	301	71	117			605	1
Minor conscious procedure	144	12351	1803	2	102	300	
Minor operative procedure with recovery					24		
Minor physiological challenge	60			4	177		
Major physiological challenge			300				
Animal unconscious no recovery		20	574	7	755	215	

Table 5 continued.

Procedure	Native mammals									
	Macropods	***Native Rats and Mice***	***Possums and Gliders***	***Bandicoots***	***Dasyurids***	***Echidnas***	***Platypus***	***Seals***	***Ceteceans***	***Other Native Animals***
Observation with minor interference	57	1	66		473			1980	17	
Minor conscious procedure	141	5	983	3	300	8	3		3	21
Minor operative procedure with recovery					8	11		1	13	
Minor physiological challenge					7					

Table 6 Comparison of projects between 2006 and 2007

Part 1 Animal type	**2006**		**2007**	
2007 Animal Category	*% Projects (n=170)*	*Notes*	*% Projects (n=125)*	*Notes*
Amphibians			0.8	
Aquatic animals	40.4	Included amphibians and marine mammals	37.9	
Birds	10.1		11.3	
Domestic mammals	15.2	stock animals only	10.5	Includes stock animals
Exotic Feral animals	1.7		0	
Lab mammals	14.6		18.5	
Native mammals	10.4		20.0	Includes marine mammals
Reptiles	6.7		6.5	

Table 6 continued

Part 2.	**2006**	**2007**
Research purposes	*% Projects (n=170)*	*% Projects (n=125)*
Education	11.4	13.7
Environmental study	14.8	15.3
Health and welfare	18.1	20.2
Management or Production	18.6	13.6
Understanding biology	37.1	37.9

Part 3.	**2006**	**2007**
Research procedures	*% Projects (n=170)*	*% Projects (n=125)*
Observation with minor interference	21.9	30.6
Minor conscious procedure	34.8	34.4
Minor operative procedure with recovery	8.1	10.5
Minor physiological challenge	4.8	4.8
Major Physiological challenge	4.3	4.0
Animal unconscious no recovery	24.3	27.4
Surgery with recovery	1.9	0.8

ABBREVIATIONS

AEC	Animal Ethics Committee
Aquenal	Aquenal Pty Ltd
AWAC	Animal Welfare Advisory Committee
BCB	Biodiversity Conservation Branch
BPI	Biosecurity and Product Integrity Division, DPIW
CLG	Code Liaison Group
CSIRO	CSIRO Marine and Atmospheric Research
Donaghey	Richard Donaghey (independent researcher)
DPIW	Department of Primary Industries and Water
DSBr	Diagnostic Services Branch
Forestry	Forestry Tasmania
Freshwater	Freshwater Systems Pty Ltd, TAS
Hydro	Hydro Tasmania Consulting
IFS	Inland Fisheries Service
LaTrobe	LaTrobe University, VIC
Murdoch	Murdoch University, Western Australia
PI Div	Primary Industries Division, DPIW
SKM	Sinclair Knight Mertz
TIAR	Tasmanian Institute Agricultural Research
TMAG	Tasmanian Museum and Art Gallery
Tyenna	Tyenna Peak Nursery, TAS

UQld	University of Queensland
USyd	University of Sydney
UTas	University of Tasmania
Wakefield	William Wakefield (independent researcher)