

# **WILDLIFE REHABILITATION IN SOUTH EAST QUEENSLAND**

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## **1. Introduction**

Thousands of animals are rescued and taken into care throughout Australia each year and considerable time and resources are invested in rehabilitating them and then releasing many back into the wild. The vast majority of the people engaged in this work are volunteers dedicated to supporting wildlife conservation and animal welfare. As a result of their efforts wildlife rehabilitation has developed over the last thirty years to become an increasingly widespread, scientific and disciplined practice.

However, such activities naturally involve human intervention in the lives of wild animals. They raise emotional, political and ethical issues of importance to humans, as well as veterinary, welfare and ecological issues of importance to the animals.

The aim of this paper is to catalogue and evaluate the current level of wildlife rehabilitation in south east Queensland and to make recommendations regarding future policy and practice. In it we use the definition of “rehabilitation and relocation” of wildlife employed by Begg and Brown (1998): “Taking wild animals that are injured, sick, diseased or orphaned, and providing veterinary core support, with the goal of restoring them to their natural state, in the habitat from which they came”.

## **2. Wildlife Rehabilitation in South East Queensland**

South East Queensland is Australia's fastest growing and urbanising region, and the rescue and rehabilitation of wildlife is undertaken by a number of carer groups and three major wildlife hospitals.

Wildlife rehabilitation activities within South East Queensland were evaluated using four years of admittance records from the three largest wildlife hospitals in the region: the Australia Zoo Wildlife Hospital (AZWH), the Royal Society for the Prevention of Cruelty to Animals Queensland (RSPCA) Wildlife Hospital at Wacol and Currumbin Wildlife Sanctuary Hospital (CWS). Admissions records from each wildlife hospital were collected for the four years between January 1st 2009 to December 31st 2012. These records included the species, animal class, date of admission, cause of admission (COA), outcome and date of outcome.

The data was then collated and analysed into five main areas: wildlife admissions, cause of admission, times in care and outcomes.

## **2.1 The Wildlife**

The total number of animals admitted to the three wildlife hospitals for each of the four years is shown in Figure 1.

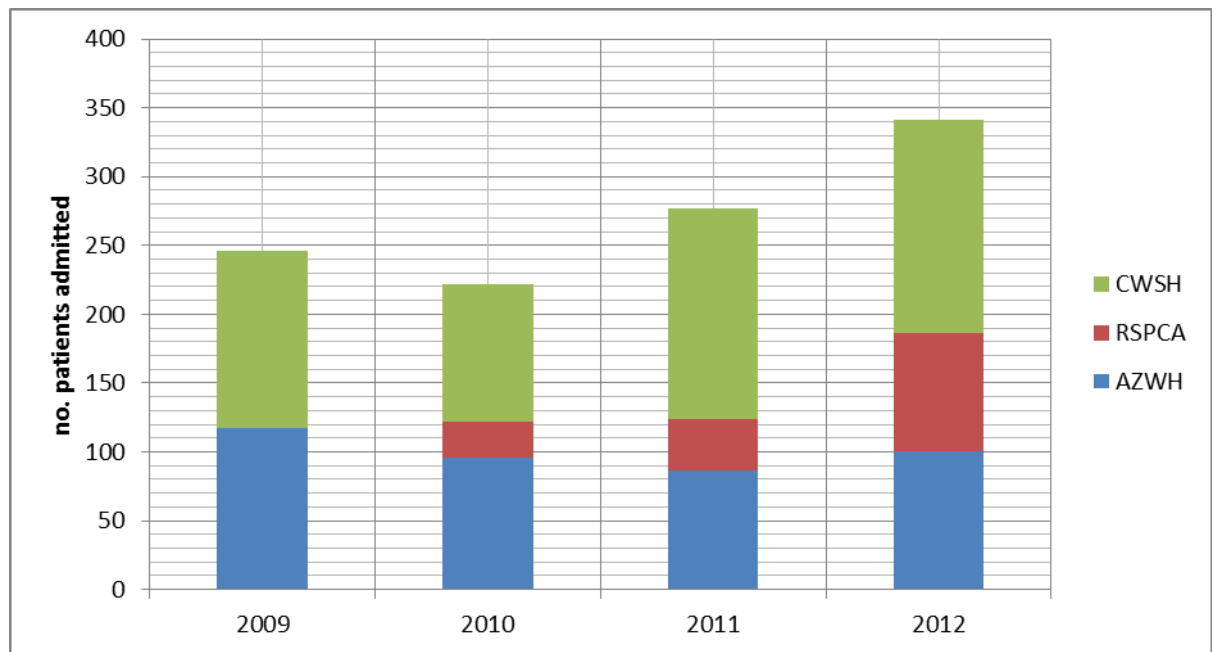


Figure 1 Number of wild animals taken to the three wildlife hospitals in south east Queensland for the years 2009 to 2012.

These results show that each year more than 22,000 animals were taken into care with some 34,000 being admitted in 2012.

Birds were the most common taxon group taken into care, representing 57% of the total admissions, with 34% mammals and 9% reptiles. The species most frequently admitted for these three taxa (mammals, birds and reptiles) are shown in Figures 2, 3 and 4

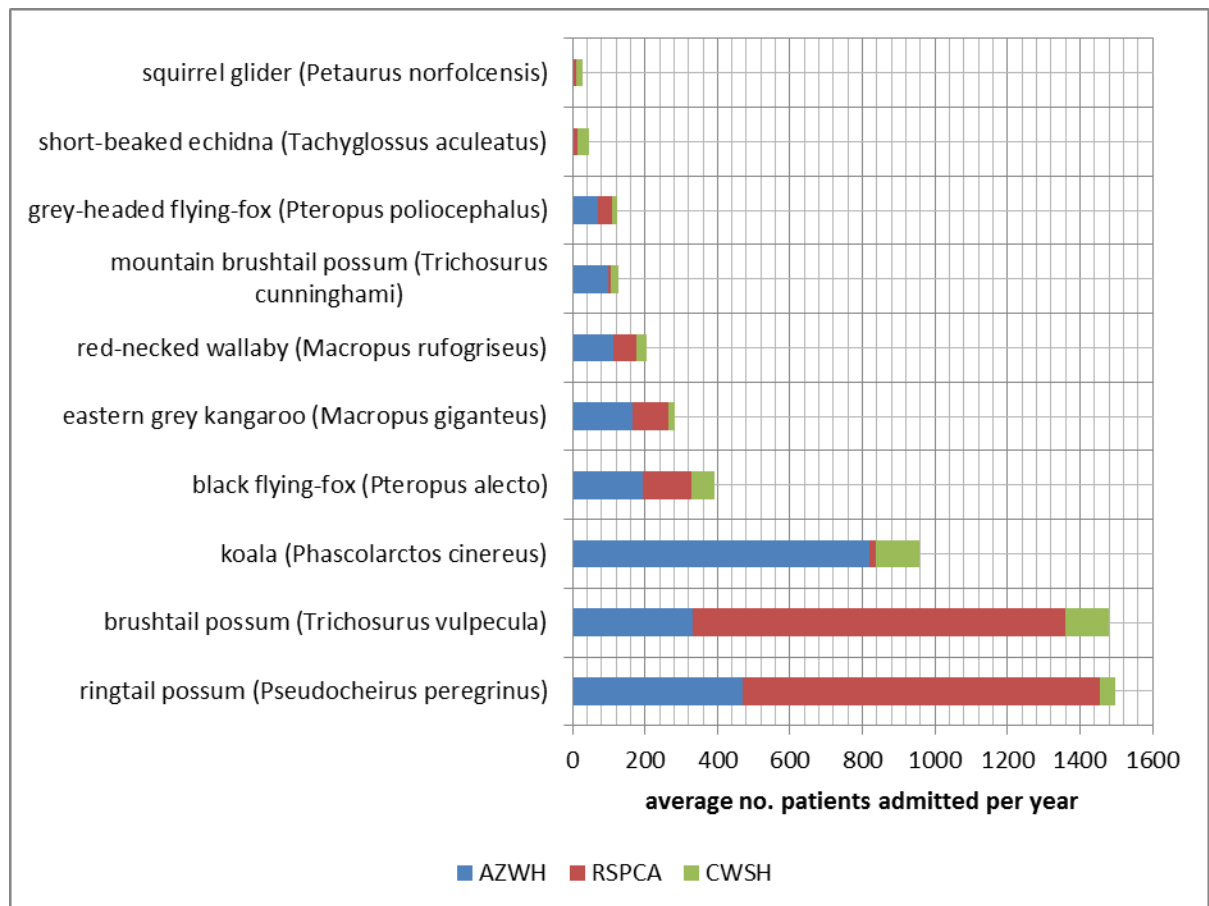


Figure 2 The ten mammal species most frequently admitted to the three wildlife hospitals in south east Queensland for the years 2009 to 2012.

Of particular note for mammals is the disproportionate number of brushtail and ringtail possums (*Trichosurus vulpecula* and *Pseudocheirus peregrinus*) received by RSPCA. An explanation for this is Wacol's proximity to the urbanised Brisbane area compared to the other wildlife hospitals. Possums occur in greater densities within urbanised environments (Statham & Statham 1997; Russell et al. 2009; Eymann et al. 2013) where they are also more likely to come into conflict with humans and be brought into care. Koalas were received in greater numbers by AZWH, since this organisation has specialised in this species (Australia Zoo Wildlife Warriors n.d.).

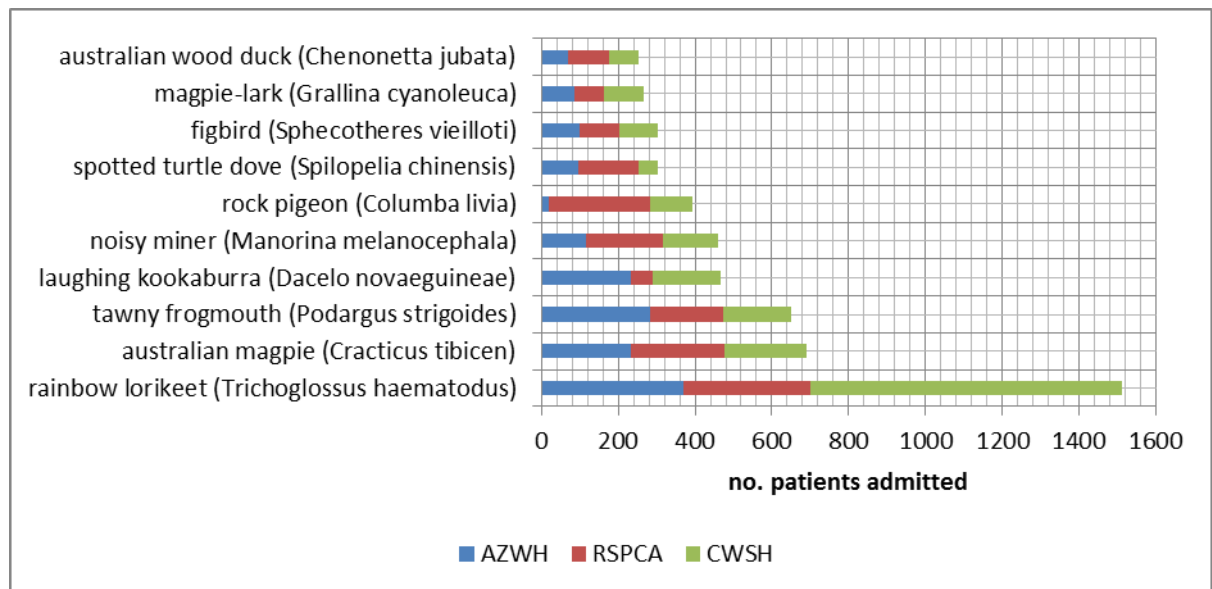


Figure 3 The ten bird species most frequently admitted to the three wildlife hospitals in south east Queensland for the years 2009 to 2012.

Rainbow lorikeets were the most commonly admitted bird species with approximately half being admitted by CWH. Conversely, kookaburras were received in a disproportionately small number by RSPCA, while the urban living species rock (feral) pigeon was received primarily by the RSPCA, again attributable to its proximity to urban Brisbane. Rock pigeons are recognised for their global colonisation of urbanised environments (Ryan 2011).

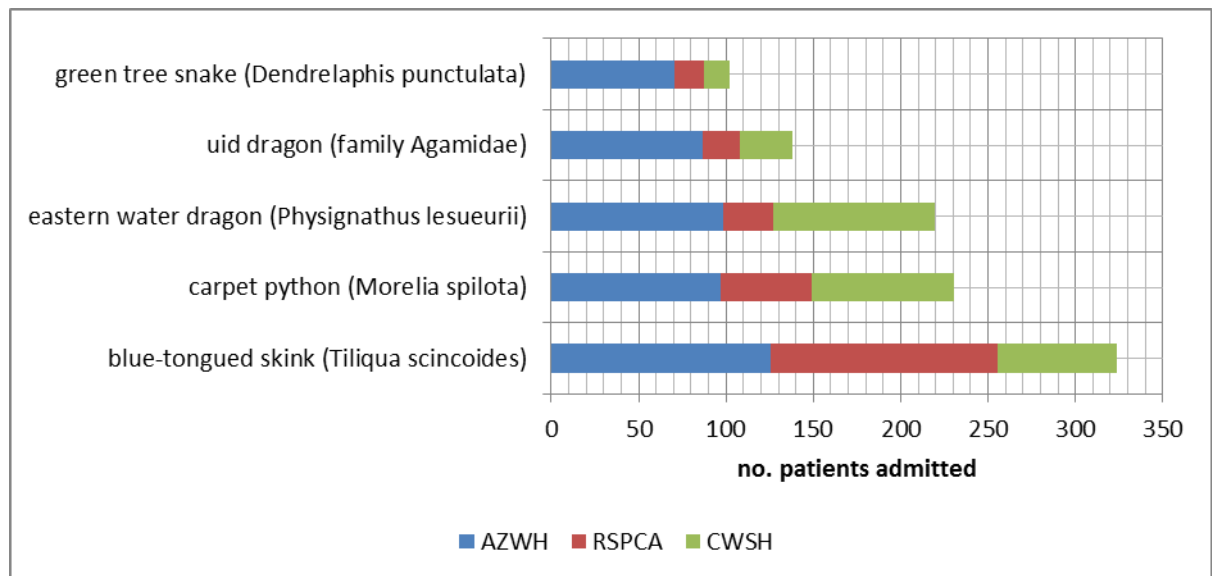
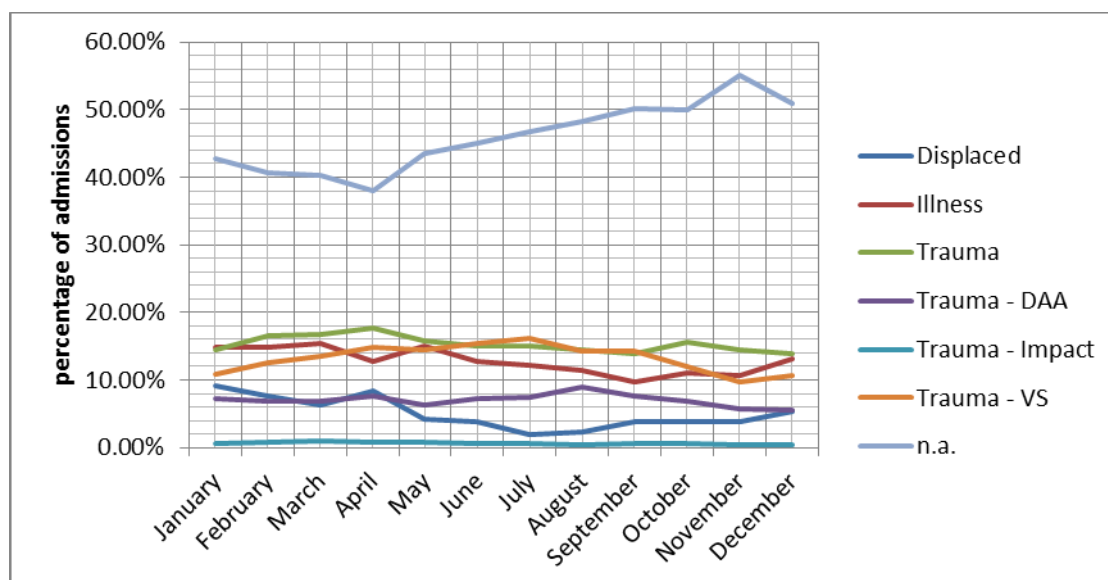


Figure 4 The reptile species most frequently admitted to the three wildlife hospitals in south east Queensland for the years 2009 to 2012.

With the exception of blue-tongued skinks, the RSPCA was the least represented hospital for reptiles. However, it can be assumed that a significant number of the unidentified ('uid') dragons were actually eastern water dragons, and thus this species may be the most frequently admitted reptile.

## 2.2 Cause of Admission

The reasons for which animals were admitted to the wildlife hospitals are shown in Figure 5 together with an explanation of the admission categories. This data indicates that while "natural causes" such as illness were important, many animals admitted had suffered from some previous human intervention. This included trauma from vehicle accidents, attacks by dogs and cats (introduced predators), collisions with human made objects, and displacement particularly during habitat clearing. The data also shows that by far the largest admission category was 'n. a', where there was insufficient information to be able to determine the real cause.



**Cause of Admission    Definition**

**Displaced**                      Wildlife in conflict with humans and removed from its environment, e.g. due to habitat destruction, removal from a hazardous environment, removal of dangerous or problem wildlife

**Illness**                              Patients with a specific and diagnosed disease (such as psittacine beak and feather disease or chlamydiosis) or in a general depressed state with no other recorded history

**Trauma**                              All types of undetermined physical trauma and injury

**Trauma – DAA**  
(domestic animal attack)                      Patients that have come into conflict with animals associated with humans particularly domestic cats and dogs

**Trauma – Impact**                      Generally collision with buildings and windows plus other (non-vehicle) collisions

**Trauma – VS (vehicle strike)**                      Wildlife known to have been hit by a vehicle or been found by a road with injuries classically associated with this type of trauma

**n.a.**                                      Entries that have either unknown, undiagnosed or unrecorded history fields

Figure 5 Causes of admission to the wildlife hospitals per month for all wildlife together with an explanation of the admission categories.

Of all wildlife admitted, the smallest number of animals was admitted for ‘Impact’ followed by ‘Displacement’ and ‘Domestic Animal Attack’.

These were similar throughout the year at around 10%. 'Vehicle Strike' peaked in winter while all other types of trauma (at 10%-20%) varied less through the year. There was a similar number of animals admitted for 'Illness', with this number dropping in both April and September. All other were lumped into the 'n.a.' class, meaning that this was easily the most frequent at around 50%.

However, considerable variation and omissions were found in the records relating to cause of admission for each wildlife hospital. Usually, this was derived from information provided by the rescuer and described the circumstances in which the animal was found, for example "hit by car", "attacked by dog", "found on the ground" or "fell from nest". This cause was then entered by the staff member or volunteer responsible for recording the information. Consequently there may have been different interpretations of the cause of admission, and these sources of variations could not be controlled or assessed in this project. Similarly the cause "illness" was very general and did not indicate why the animal was sick or depressed requiring rescue.

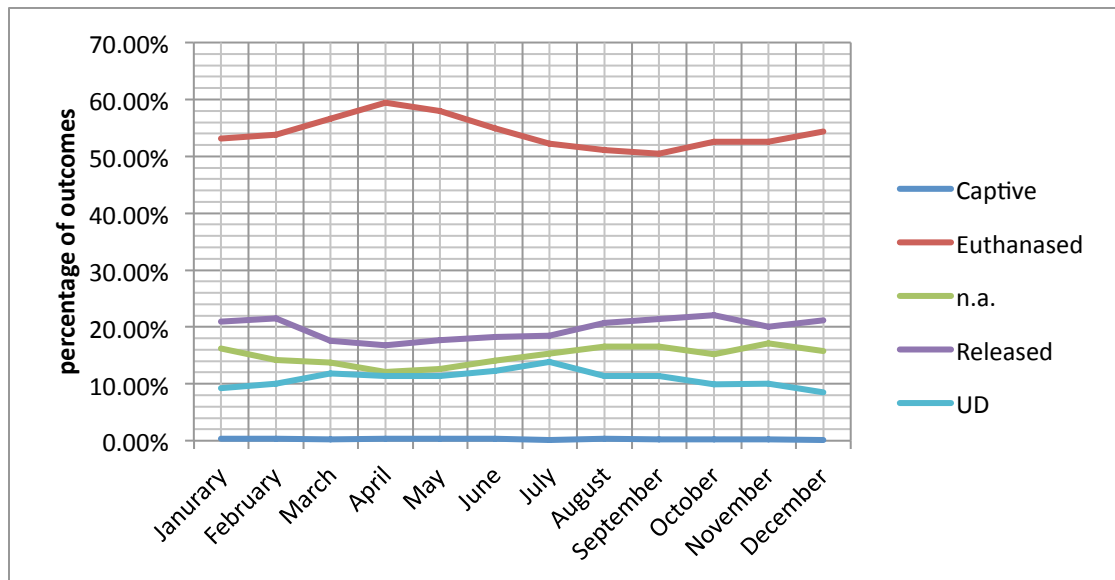
### **2.3 Time In care**

Once admitted to a hospital an animal's length of stay will obviously depend on a number of factors, particularly the severity of its problems and its speed of recovery. Nevertheless the data from this project showed that vast majority of cases were decided by the end of day two in care (68% patients). Of the remaining animals the majority were resolved within six weeks, and very few remained in care beyond this time.

### **2.4 Outcomes**

Patient outcomes (as a percentage of cases for that month) are shown in Figure 6, together with an explanation of the outcome categories.





Outcome	Definition
<b>Captive</b>	Wildlife that had been legally kept in captivity and is unsuitable for release
<b>Euthanased</b>	Deliberate intervention to end the life of patients diagnosed either as unviable, unlikely to survive treatment or unsuitable for release
<b>n.a.</b>	Animals that had either unknown or unrecorded outcomes
<b>Released</b>	Patients that were returned to the wild after rehabilitation.
<b>UD (unassisted death)</b>	Patients that died whilst in care usually as a result of their cause of admission

Figure 6 Wildlife outcomes from the wildlife hospitals per month for all wildlife together with an explanation of the outcome categories.

The results show that while euthanasia was the most common outcome for admitted wildlife (around 50%), approximately 20% of animals were eventually released back to the wild. This means that in 2012 some 6,800 wild animals were released from the three wildlife hospitals in south east Queensland.

This peaked in April and was lowest in September. Other outcomes varied from 10 to 20%. 'Released' and 'n.a.' both decreased in April, October and November, while unassisted deaths peaked in July. The outcomes for the taxa mammals and birds are shown in Figures 7 and 8.

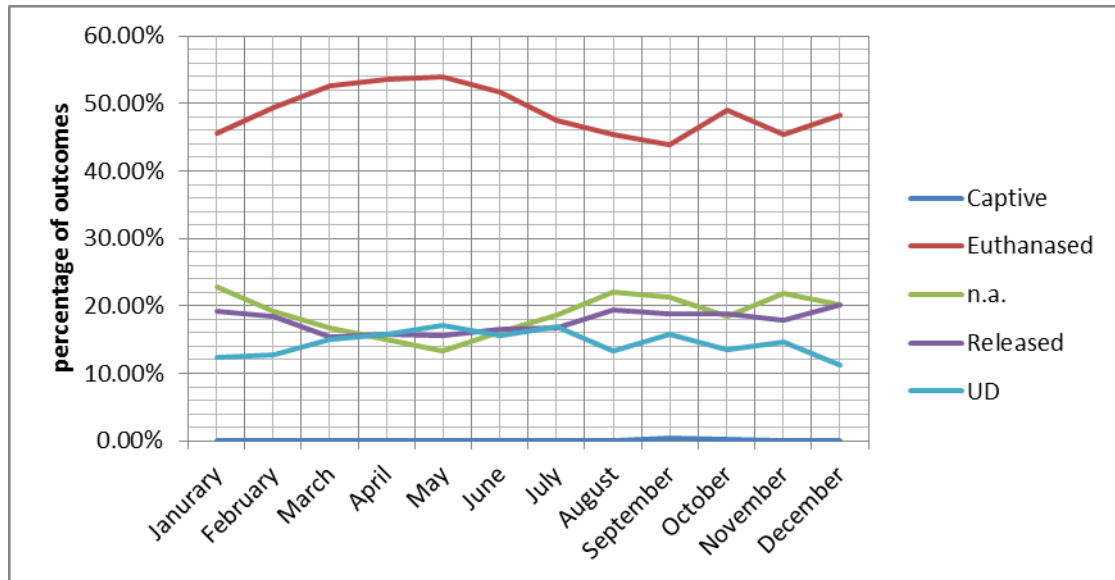


Figure 7 Wildlife outcomes from the wildlife hospitals per month for mammals.

For mammals there was a less distinctive peak in euthanasia rate in April a more pronounced one during October. 'Release' showed less variation over the year with the same overall rate of 18% as for birds. There was also greater variation in 'unassisted death', with mammals twice as likely to have this outcome compared to birds.

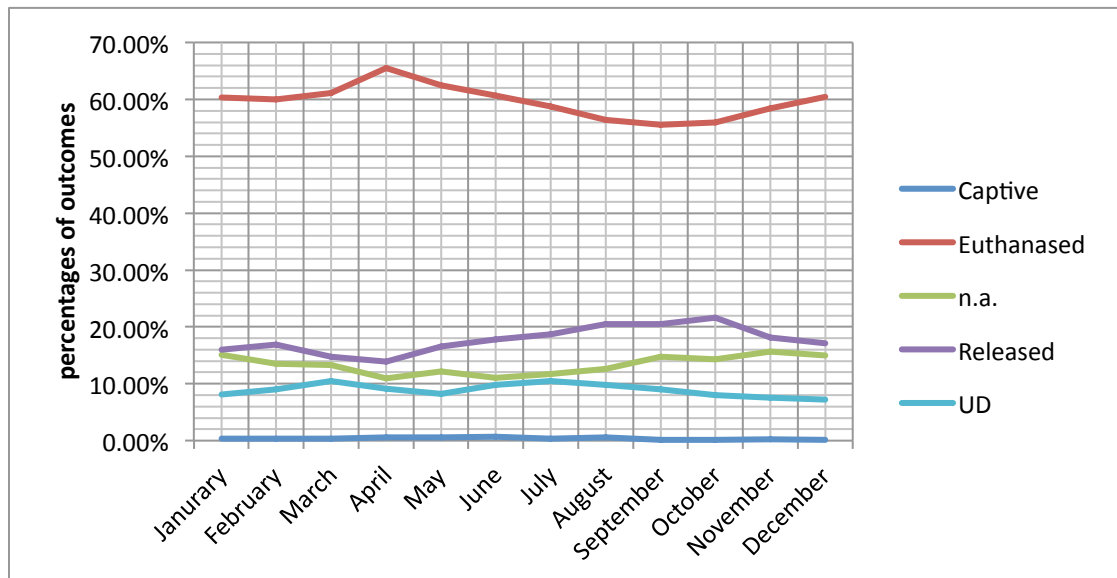


Figure 8 Wildlife outcomes from the wildlife hospitals per month for birds.

The seasonal trend for bird histories followed a similar pattern to that for all wildlife, except that there was a more distinctive peak in the number of euthanasias in April, and a greater proportion of birds were released in the spring - the 'baby bird' season. 'Unassisted death' and 'n.a.' followed similar patterns while coming into permanent 'captive' was again a rare outcome.

### 3. Conclusions and Recommendations

Overall, this study suggests that great numbers of wild animals are being rehabilitated in south-east Queensland and considerable effort is being invested in releasing many thousands back into the wild. However, admission records gathered by wildlife hospitals showed numerous inconsistencies and inaccuracies indicating that record keeping is not necessarily a priority in the practice of wildlife rehabilitation. Considerable improvements can and should be made in order to maintain comprehensive and consistent records of wildlife admissions, their management while in care and their final outcomes. These can then become a valuable resource for the further development of

rehabilitation and release practices and for the identification of future research priorities.

For instance, this study was limited by the variation in the information quality of the dataset, and in particular this referred to the recorded causes of admission. This variation was discussed in Section 2.2.

These differences in recording and interpreting the data made the records inconsistent and it is recommended that new categories or standards providing uniformity are developed, according to those described in previous studies (Tribe & Brown, 2000; Harden et al. 2006; Kelly & Bland, 2006; Neese et al. 2010; Wimberger & Downs, 2010; Kelly et al. 2011) and following the hospitals' own standards for how they interpret and classify their information.

The development of better admittance record keeping systems (particularly databases) and protocols is one of the greatest areas that would facilitate both higher quality and broader scope research and help to develop better management practices.

An example format could be a universal database accessible from an online webpage (stored using cloud technology). Use of drop-down menus is highly recommended rather than typed entry to facilitate analysis and report functions although the option to add notes, especially if a value of other/unknown/n.a. or equivalent were selected would be useful. Context sensitive language and features would help increase usability.

It is also recommended that multiple entry fields be utilised for cause of arrival/history to better account for causation, an example could be:

- History/Surrounding environment
- Proximate cause of arrival
- Ultimate cause of arrival
- Diagnosis

This technology could even be developed into mobile application software so that it could easily be used in the field. It could be further developed with tools such as identification keys either integrated into the database itself or accessible from the same webpage.

Further research is also recommended to determine the factors that are important in predicting whether a wild animal will survive to be released, such as weight on admission, age (juvenile, sub-adult, adult), type of injury or illness among other factors. These factors will be useful for improving triage and early prognosis and will lead rehabilitators to focus efforts on those individuals with a greater chance of survival.

Making wildlife rehabilitation and release a desirable and effective part of wildlife conservation will not be easy, but it is incumbent upon all of us – ecologists, zoologists, wildlife carers and veterinarians – to continually evaluate current practices to improve the effectiveness our wildlife rehabilitation practices and the welfare of the animals that come into our care.

#### **4. References**

Begg, R. and Brown, P. R. (1998) Wildlife rehabilitation and relocation: should we or shouldn't we intervene? 1998 RSPCA Australia Scientific Seminar, Canberra.

Eymann, J, Cooper, DW & Herbert, CA 2013, 'Brushtail possums (*Trichosurus vulpecula*) in metropolitan Sydney: population biology and response to Suprelorin contraceptive implants', *Australian Journal of Zoology*, 61, 78-86.

Harden, J, Dickerman, RW & Elliston, EP 2006, 'Collection, value and use of wildlife rehabilitation data', *Journal of Wildlife Rehabilitation*, 28(1), 10-28.

Kelly, A and Bland, M 2006, 'Admissions, diagnoses, and outcomes for Eurasian sparrowhawks (*Accipiter nisus*) brought to a wildlife rehabilitation center in England', *Journal of Raptor Research*, 40(3,) 231-235.

Kelly, A. Halstead, C. Hunter, D. Leighton, K Grogan, A, and Harris, M 2011, 'Factors affecting the likelihood of release of injured and orphaned woodpigeons (*Columba palumbus*)', *Animal Welfare*, 20, 523-534.

Neese, MR, Seitz, J, Nuzzo, J & Horn, DJ 2010, 'Cause of admittance in raptors at Illinois Raptor Center', *Journal of Wildlife Rehabilitation*, 30(1), 17-20.

Russell, TC, Herbert, CA & Kohen, JL 2009, 'High possum mortality on urban roads: implications for the population viability of the common brushtail and the common ringtail possum', *Australian Journal of Zoology*, (59), 391-7.

Ryan, AC 2011, 'The distribution, density, and movements of feral pigeons *Columba livia* and their relationship with people', *Master of*

Science in Ecology and Biodiversity thesis, Victoria University of Wellington.

Statham, M & Statham, H 1997, 'Movements and habits of brushtail possums (*Trichosurus vulpecula* Kerr) in an urban area', *Wildlife Research*, (24), 715-26.

Tribe, A & Brown, P 2000, 'The role of wildlife rescue groups on the care and rehabilitation of Australian fauna', *Human dimensions of wildlife: An international journal*, (5), 69-85.

Wimberger, K and Downs, CT 2010 'Annual intake trends of a large urban animal rehabilitation centre in South Africa: a case study', *Animal Welfare*, (119), 501-513. ,

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Dr Tribe is currently investigating the rehabilitation and release of native wildlife in collaboration with the RSPCA Qld, and is also involved in animal welfare research projects studying the effectiveness of environmental enrichment in improving animal management and husbandry. He has been senior lecturer at UQ since 2000 and prior to this was Director of the University's Veterinary Science Farm for eight years after arriving in Queensland in 1992. Dr Tribe was the Senior Veterinarian at the Royal Melbourne Zoological Gardens from 1985 to 1991.

