

# **Policy on the Management of Solitary Elephants in New South Wales**

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**Exhibited Animals Protection Act, 1986**

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## **Introduction**

The occurrence of solitary elephants in New South Wales could occur due to the age demographics of the elephant population, potential difficulties in captive breeding and potential compatibility problems. The national circus industry maintains an aged, all female population while the regional zoo population is managed through a federally approved regional cooperative breeding program containing both sexes and coordinated through the Australasian Regional Association of Zoological Parks and Aquaria.

The case involving the solitary female elephant named Arna, owned by Stardust Circus, resulted in significant protests by the animal welfare community to the NSW Department of Primary Industries and included hundreds of letters of complaints. These concerns resulted in a person launching proceedings against Stardust Circus on the grounds of alleged cruelty. Stardust Circus was cleared after a lengthy court case. The highly social nature of female elephants and their high public interest highlights the need to ensure that solitary elephants are appropriately managed.

The Exhibited Animals Advisory Committee (on 10 November 2004) recognised that elephants in the wild are typically social, however elephant behaviour in captivity can differ significantly from their behaviour in the wild. The Committee agreed that it was inappropriate to have a policy of compulsory introductions of solitary elephants to other elephants due to the complexity of their behaviour, established bonds with trainers and difficulties in finding appropriate partners. The Exhibited Animals Advisory Committee's subsequent considerations outlining the major issues involved with the occurrence and holding of solitary elephants are described in this document.

## **Definitions**

Solitary – An elephant is considered solitary when it does not have physical contact with other elephants. Elephants in adjacent enclosures that have the opportunity for physical contact are not considered solitary.

## **Wild Social Behaviour**

Elephants are renowned for their close relationships, with their young being reared in a matriarchal society embedded in complex layers of extended family (Bradshaw *et al.* 2005). The family unit of the African elephant is commonly five to eight females and their offspring, although there are large variations in family size. Most females stay within the family group in which they were born, though family groups can splinter into subgroups when they become too large (Douglas-Hamilton 1975; Moss 1988).

In both Asian elephants and African elephants, the male elephants appear to spend at least some of the time in a solitary state, however the average length of time appears to be variable (Douglas-Hamilton 1975; Moss 1988). Pubertal males, 9-18 years of age, leave the natal family group through a gradual process that may take up to four years (Lee & Moss 1999). Adult male elephants are largely solitary but may associate

with female groups or form loose associations with other males (Croze 1972), depending on their age and sexual state (Poole & Moss 1981). When males are in musth they are particularly likely to be near oestrus females (Sukumar 2003).

The few observations of the social behaviour of Asian elephants suggest the basic social unit comprises the mother and dependant offspring (McKay 1973; Sukumar 1989). Male elephants however are generally solitary, spending 60-93% of the time alone (McKay 1973; Sukumar 1989) and spending an average of 23% of the time with family groups (Sukumar 1989).

Observations of African elephants reveal that maturing male elephants slowly separate from the female family unit. The information on the amount of time they spend away from the family unit is not consistent however, as one record suggests that by 14-15 years old, the young males at Amboseli in Kenya spend over 80% of their time away from families, though they may be either solitary or in the company of other bulls (Sukumar 2003).

Other observations however suggest that male African plains elephants under 20 years of age spend more than 70% of their time in association with family groups and less than 5% alone. This second study also found large adult males over 35 years old spend approximately 50% of their time in the company of males, 25% in the company of females and only 25% of their time alone (Moss in press). Though male elephants do associate with other males, the study at Amboseli suggests male elephants do not form stable groups. Another study found that the six oldest bulls at Amboseli were seen solitary 29% of the time and in association with cow groups 66% of the time on average when in musth (Sukumar 2003). In the same study African bull elephants were seen solitary on 26% of the time and in the company of other bulls on 68% of the time.

However in more closed forests African forest elephants (*L. cyclotis*) appear to exist in smaller groups, with 89% of family groups comprising only one adult cow with one, two or occasionally three offspring. The next most frequent social group category (10%) was solitary females that have passed the reproductive age. Units of two or three adult females with offspring were only rarely seen (Turkalo & Fay 1995).

### **Recommended Group Size in Captivity**

The American Zoo and Aquarium Association (AZA)(2001) states that it is inappropriate to keep female elephants singly (e.g. Sukumar 1992; Taylor & Poole 1998; EMA 1999). The AZA (2001) recommends that elephant holding facilities hold a minimum of three female elephants together (of the same species), and that all facilities establishing new groups of elephants strive for groups of the same species.

However the AZA (2001) does recognise that some anti-social adult females currently exist and these elephants can be managed singly on a case by case basis if the institution has made every effort to introduce them to a social group, and that the Species Survival Plan agrees that the anti-social behaviour is not correctable. Adult males six years or more in age can be housed alone, but not in complete isolation as

they should have tactile, olfactory visual and auditory interactions with other elephants (AZA 2001).

The AZA, which accredits and sets standards for American zoo facilities, banned the keeping of solitary elephants in 2001. Some zoo professionals hope that the ban will increase the captive elephant population by consolidating female elephants into social groups and preventing loss of individuals from the potential breeding pool.

The Australasian Regional Association of Zoological Parks and Aquaria (ARAZPA) has identified that zoos should aim to hold a group of at least four females of varying ages (ARAZPA 2004). They suggest that the management at the facility should endeavour to develop a stable, cohesive group of females. Male elephants can be introduced to the family unit as required.

### **Problems in Maintaining Groups of Elephants**

The maintenance of groups of elephants in zoos and circuses will remain difficult in Australia due to the limited number of elephants, the ageing population, the historic lack of breeding success (counterbalanced by recent pregnancies of three elephants within the ARAZPA species management program for Asian elephants) and the limited ability to import animals. As a result of these influences the occurrence of solitary elephants could occur in the future.

### **Actions to Reduce the Occurrence of Solitary Elephants**

To increase the current Asian elephant population in Australasia five elephants were imported to Taronga Zoo, and three to Melbourne Zoo, from Thailand in 2006. Currently within New South Wales, Taronga Zoo has five Asian Elephants and Taronga Western Plains Zoo in Dubbo has three Asian Elephant and two African Elephants. The circus industry currently holds five female elephants that are frequently on display interstate (Table 1). These include three at Bullen's Circus being held at Australia Zoo, Queensland and two at Perry Bros Circus. The circus industry has no plans to import elephants at this point in time.

The risk that solitary elephants may occur is due to:

- 1) the circuses that hold elephants have an elderly population and may not have access to the elephants that have been brought into the zoo system or their progeny,
- 2) elephants have never bred in Australia (though management of breeding has not been a priority previously), and
- 3) the elephant population within the Australasian region may not be sustainable in the long term unless supplemental importations or successful breeding occurs. Taronga Zoo has achieved two pregnancies, one from natural mating and the other through assisted reproduction techniques.

**Table 1. Asian Elephants held in Australia as at October 2008.**

<b>Institution</b>	<b>State</b>	<b>Number of Elephants</b>
<b>Asiatic Elephants</b>		<b>M:F:Unsexed</b>
Taronga Zoo	NSW	1:4:0
Western Plains Zoo	NSW	0:3:0
Bullen's Circus	NSW	0:3:0
Perry Bros Circus	NSW	0:2:0
Melbourne Zoo	VIC	1:4:0
Perth Zoo	WA	1:2:0
Total		3:18:0
<b>African Elephants</b>		
Western Plains Zoo	NSW	0:2:0

### **Legislative Requirements to Ensure Animal Welfare**

There is a clear need to ensure the welfare of elephants (especially females) that have become solitary as a result of their companion(s) dying. Therefore all efforts should be made by exhibitors of elephants to either find a compatible companion elephant for a solitary elephant or to introduce it into another group. The need for providing adequate social contact for elephants is required by the *General Standards for Exhibiting Animals in New South Wales*, *Standards for Exhibiting Circus Animals in New South Wales*, the *Exhibited Animals Protection Act 1986* and the *National Consultative Committee on Animal Welfare - Recommended National Circus Standards*.

Clause 54 of the *General Standards for Exhibiting Animals in New South Wales* states that animals should be housed in social groups such as typically found in wild populations. This Clause also provides the Director-General with the ability to exempt an exhibitor from this requirement in certain circumstances, for example, where the animals were housed in an appropriate social group and following the death of one or more animals the exhibitor either cannot obtain replacements or is in the process of obtaining replacements. In the case of elephants however the period allowed for finding an appropriate companion should be limited. See Appendix 1.

Clause 57 of the *General Standards for Exhibiting Animals in New South Wales* states that behavioural enrichment activities should be provided to increase activity, stimulate natural behaviours and reduce the incidence of boredom. The Note box under this Clause outlines various types of enrichment that should be considered including social enrichment, which includes providing opportunities to interact with the same or other species by keeping in pairs or groups. See Appendix 1.

Clause 16 (1.D) of the *Standards for Exhibiting Circus Animals in New South Wales* requires that “as elephants are social herd animal, they should always be able to see and touch other elephants”.

Section 28 (1) of the *Exhibited Animals Protection Act 1986* (See Appendix 1) states that an authority is subject to any terms and conditions specified in the authority when it is issued; and any terms and conditions imposed by the Director-General upon the authority in accordance with the regulations after it has been issued. Therefore a condition requiring an exhibitor to find another elephant or transfer a solitary elephant to a facility with other elephants can be imposed under this Section of the Act.

The *National Consultative Committee on Animal Welfare - Recommended National Circus Standards* makes several references to the holding of solitary elephants (e.g. 1.D, 18.D.1 & 16.D.1). The National Circus Standards suggests that as elephants are social herd animals, unless compelling reasons can be shown, they should always be housed with their own species, i.e., being able to see and touch.

### **Potential Justification for Solitary Elephants**

There appears to be a community expectation that the holding of solitary elephants is not appropriate in Australia. Despite this there are issues regarding solitary elephants that are not generally considered by the community and animal welfare groups. Firstly it is common for males of both the African and Asiatic species, especially older males, to spend much of their time alone in the wild. In captivity it is also common for strong bonds to be developed between elephants and their trainer(s) and it appears that it is not necessarily traumatic for an elephant not to have other elephant companionship if the elephant has bonded with the trainer.

The bonds demonstrated between females within a group (these groups may be related family groups in the wild and unrelated individuals in captivity) suggest that there are significant social and behavioural benefits to the animals in developing and maintaining these relationships. Social interactions with other elephants are also likely to be the most sustainable form of environmental enrichment for captive elephants (Stevenson 2002). Despite these observations it has been argued that it is not necessarily stressful for an elephant to be on its own if the elephant has strongly bonded with, and regularly interacts with, its trainer over many years. An example of this appears to be Arna, previously owned by Stardust Circus, who was without elephant contact for seven years and behaviourally appeared to cope well.

It is recognised that circuses and zoos have a commercial interest in retaining solitary elephants given their significant investment in the elephant's care and will likely seek to retain an animal which they maintain is content in its current environment. Reliable and objective measures of assessing wellbeing are still to be determined.

Issues that may arise when finding a companion for a solitary elephant can include:

- The availability of another animal.
- The compatibility of animals when placed together. Circus proprietors and zoos have experiences that have shown that elephants have individual personalities that influence their social interaction. If the elephants are not compatible this may result in fighting and injury. Therefore prior experience with introductions may dictate that an individual elephant is not suited for housing with other available elephants.

- The reluctance of a zoo or circus to relinquish an elephant from an existing group to partner a solitary elephant. Separation of bonded elephants may then become a consideration.
- The reluctance of a zoo or circus to relinquish a solitary elephant to someone who has a group of elephants.
- The extent to which an animal has been humanised
- A zoo or circus may not wish to take on an additional elephant due to resource demands.
- Facilities offering to care for elephants must be able to demonstrate that they have sufficiently trained and experienced handlers to care for the elephants.

### **Decision tree for the management of solitary elephants**

1. Did the elephant become solitary through disease impacting on its companion elephant? If yes, go to 3. If no, go to 2.
2. What sex is the elephant? If the solitary elephant is male, go to 4. If female, go to 5.
3. Is the solitary elephant ill or showing signs of disease? If yes, go to 6. If no, go to 2.
4. Male elephants over eight years of age are less reliant on companionship, as they lead more solitary lives than adult females in the wild. Is the male elephant over eight years old? If yes, go to 8. If less than eight years old, go to 7.
5. Female elephants are normally found in social groups in the wild and the legislation for captive management of elephants requires that female elephants are provided with species-specific companions. Is the female elephant a calf? If yes, go to 7. If no, go to 9.
6. The sick or diseased elephant is assessed by a qualified veterinarian and its diagnosis and prognosis determined. If the elephant requires medical treatment and needs to be maintained in a solitary situation for disease management or to prevent spread of infection then the management of the elephant in a solitary situation under veterinary management is acceptable. If the elephant does not require solitary holding for the management of its illness then go to 2.
7. A lone young elephant that is dependent on its mother must be urgently placed with another appropriate elephant. Immediate efforts must be demonstrated to DPI that the young female elephant is being placed with a suitable companion elephant. Young male elephants should be held with another elephant (which may include a bachelor group) until they are at least 8 years old or it can be demonstrated that there is aggressive or disruptive conflict in the herd or other compelling reasons not to do so. The DPI may require additional advice from personnel with appropriate elephant management and behavioural expertise to assist with determinations. If the sub-adult elephant is not provided with a social environment within three months go to 10.

8. Male elephants start to reach puberty as young as 5 years of age. A young male maintained in the herd may develop from 'play' mounting behaviour to serious breeding activity and cause disruption in the group resulting in aggression from the adult females within the herd. Physical attacks could seriously injure a young male. This may need to be resolved by moving him from the natal herd and introducing him to other males or unfamiliar females. A male elephant may be kept alone, however it must have appropriate opportunities to interact with other elephants on a regular basis.
9. A lone female elephant should be placed into a suitable social circumstance, with at least one other female elephant. Attempts to introduce and integrate the lone female must be taken within three months of her becoming solitary. This consideration does not extend to requiring keeping African and Asian elephants together in the same herd due to potential inter-specific disease risks. If the elephant is not provided with a social environment within three months go to 10.
10. If the owner of the solitary elephant demonstrates compelling reasons to EAAC (DPI) a further extension of three months (or other suitable period) may be granted to complete the elephant introduction or resolve outstanding issues. Unless compelling reasons are demonstrated to the satisfaction of the Director-General DPI, failure to comply with these requirements will mean that the DPI may institute actions to confiscate the solitary elephant and relocate the elephant to suitable alternative premises. In the event that no suitable elephant companions can be found for a solitary elephant then the use of other species as a companion may be considered.

## Conclusion

All reasonable efforts should be made to integrate solitary elephants into other groups unless compelling reasons can be provided that warrant the retention of a solitary elephant. Only in the event that all avenues for integration have been exhausted should the maintenance of a solitary elephant be contemplated.

## References

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## **Appendix 1**

### **General Standards for Exhibiting Animals in New South Wales**

#### **Clause 54**

#### **Social Behaviour**

- 1) An enclosure occupied by several animals must allow for normal patterns of group behaviour.
- 2) Animals must be housed in social groups typically found in wild populations. Exceptions: the Director-General may exempt an exhibitor from this requirement where the animals:
  - a) were housed in an appropriate social group and following the death of one or more animals the exhibitor either cannot obtain replacements or is in the process of obtaining replacements;
  - b) are being held in quarantine prior to being placed with others of the same species to form an appropriate social grouping;
  - c) are being held in a short-term management facility, a health management facility or a medium term holding facility in circumstances permitted by Clause 10; and/or
  - d) cannot be housed in groups without significant risk of serious injury.

#### **Note**

Social groups may include:

- solitary animals.
- mother with offspring.
- paired animals with or without offspring.
- single sex groups.
- single males and more than one female.
- several males and females together.

## General Standards for Exhibiting Animals in New South Wales

### Clause 57

### Behavioural Enrichment

Behavioural enrichment activities must be provided to increase activity, simulate natural behaviours and reduce the incidence of boredom.

#### Note

Behavioural enrichment includes:

- Physical Enrichment – Providing space and furniture to encourage natural behaviours. This can include planting enclosures with native species to provide additional smell and shade or providing plenty of climbing opportunities for arboreal species with the use of trees, trunks, branches and ropes.
- Occupational Enrichment – Providing objects for the animals to manipulate.
- Feeding Enrichment – Providing activity feeds and novel food items and feeding devices to increase foraging times. Examples include provision of browse for herbivores and providing live invertebrates for omnivorous and carnivorous birds, small to medium sized mammals and reptiles. It can also promote foraging behaviours by hiding food or involve varying feed times to increase activity. Care must be taken to ensure these feeds are part of the normal diet, rather than in addition, in order to decrease the likelihood of obesity.
- Senses Enrichment – Providing novel smells or noises such as vanilla, blood and peppermint or playing sounds of predators and/or prey.
- Physiological Enrichment – Providing proper temperatures, humidities and photoperiods to stimulate natural behaviour patterns.
- Social Enrichment - Providing opportunities to interact with the same or other species by keeping in pairs or groups.

## Exhibited Animals Protection Act 1986

### 28 Terms and conditions

(1) An authority is subject to:

- (a) the terms and conditions prescribed in respect of the authority,
- (b) any terms and conditions specified in the authority when it is issued, and
- (c) any terms and conditions imposed by the Director-General upon the authority in accordance with the regulations after it has been issued, as may be varied from time to time in accordance with the regulations.

(2) Without limiting the generality of subsection (1) (b), an authority may specify the number of animals of a species that may be displayed at the premises the subject of the authority or by, or under the supervision of, the holder of the authority.

(3) The terms and conditions of an authority shall continue to have effect during any suspension, and after the expiration or cancellation of the authority, if:

- (a) the terms and conditions relate to the care to be provided for the animal or animals to which the authority relates, and
- (b) the terms and conditions are expressed to have that effect.

## Appendix 2

### Elephants in Circuses and Zoos in Australia – as at 12 November 2008.

<u>Institution</u>	<u>Name</u>	<u>Sex</u>	<u>Species</u>
<u>Perry Bros Circus</u>	Minyak	F	Asian
	Saigon	F	Asian
<u>Brenton Bullen</u> (at Australia Zoo)	Sabu	F	Asian
	Siam	F	Asian
	Bimbo	F	Asian
<u>Taronga Zoo</u>	Gung	M	Asian
	Pornthip	F	Asian
	Pak Boon	F	Asian
	Tang Mo	F	Asian
	Thong Dee	F	Asian
<u>Western Plains Zoo</u>	Burma	F	Asian
	Arna	F	Asian
	Gigi	F	Asian
	Cuddles	F	African
	Yum Yum	F	African
<u>Melbourne Zoo</u>	Bong Su	M	Asian
	Mek Kapah	F	Asian
	Dokkoon	F	Asian
	Kulab	F	Asian
	Num-Oi	F	Asian
<u>Perth Zoo</u>	Permai	F	Asian
	Tricia	F	Asian
	Putra Mas	M	Asian