

Code of Practice of the Australasian Regional Association of Zoological Parks and Aquaria

Minimum standards for exhibiting wildlife in Queensland

Nature Conservation Act 1992

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Approved in accordance with section 174A of the *Nature Conservation Act 1992*.

General conditions

Ratified by Queensland Parks and Wildlife Association (now known as Australasian Regional Association of Zoological Parks and Aquaria Queensland (ARAZPAQ)) on 6 May 1994.

Approved by the Minister for Environment and Heritage on 24 March 1995.

Reviewed by ARAZPAQ and the Environmental Protection Agency (EPA) May 2006.

Prepared by ARAZPAQ and the EPA.

Introduction

Under the provisions of the *Nature Conservation Act 1992*, the keeping of wildlife for public display requires prior approval by the Director-General of the EPA.

Applications should be submitted to:

Ecoaccess Customer Service Unit
Environmental Protection Agency
PO Box 15155
City East QLD 4002
Enquiries: 1300 368 326
Facsimile: (07) 3115 9600
Email: eco.access@epa.qld.gov.au

Some key EPA requirements in reference to establishing a wildlife park are to be found in Appendix 1.

It should also be noted that some species fall under other Government Department regulations. For further information contact the President of ARAZPAQ.

1. Husbandry

1.1 General requirements

- a) Enclosures must be maintained in sufficiently good repair to ensure that they will contain the animals at all times and are to be safe for the animals, for the staff attending them and for the public.
- b) Enclosures must be well drained and have either a readily cleanable substrate or be of a material, which can be replaced to avoid the accumulation of faeces and urine.
- c) Substrate of enclosures shall be cleaned daily. Any fixtures and fittings must be replaced as necessary and be maintained in a clean and hygienic condition, free from the accumulation of faeces and urine.
- d) Clean accessible drinking water facilities must be provided. Water must be replaced at least once daily.
- e) Suitable isolation facilities must be provided for quarantine of incoming or sick animals.
- f) Animals kept in captivity are to be under the supervision of a person who has had practical experience in relevant captive animal management for a period of at least 3 years.
- g) Each establishment must develop a relationship with a qualified veterinarian or veterinary practice to provide emergency care, give advice and carry out preventative medicine programs as necessary.

- h) Control of potential pests such as wild rodents, birds and insects should preferably be under professional guidance.
- i) All articles that are likely to be dangerous if ingested must be removed from the enclosure.
- j) Public feeding of the animals must be controlled by supervision or appropriate signage.
- k) Establishments exhibiting fauna must have a dog proof perimeter fence and/or barrier which inhibits, as much as possible, the entry of vermin.
- l) Facilities must be available for the holding of surplus stock.
- m) Species noted for interspecific aggression must not be held together in the same available space.
- n) If any individual is being dangerously stressed by the aggression of other animals in the enclosure, it must be removed from that enclosure.
- o) Sufficient shelter must be provided to allow protection from extremes in temperature and to allow sufficient access to shade during the hot periods of the day.
- p) Feed and water containers must be kept in the shade wherever possible.

1.2 Food requirements

1.2.1 Facilities

- a) Adequate facilities for the storage and preparation of food must be provided.
- b) Toxic chemicals or harmful material must not be used or stored in a food preparation area other than disinfectants used in cleaning the area and food containers.
- c) Caution must be used in selecting the type of insecticide used and in its application in food preparation areas.

1.2.2 Food

- a) The food items nutritional value must be sufficient to keep animals healthy and be fed in sufficient quantities to ensure normal growth and good health unless otherwise dictated by sound veterinary practice or approved scientific research.
- b) Food should be presented in a manner to prevent contamination by wild birds or rodents, either by its location or by suspension.
- c) Food receptacles must be so designed and located that the food will not become soiled by excreta and that they are not easily moved by the animals.
- d) Should the operation not be self sufficient, wild harvesting of foliage for food provision may require a commercial wildlife harvesting licence from the EPA.

1.3 Display requirements

- a) Injured wildlife may be displayed for educational and interpretation purposes. However, they must not be displayed if unacceptably disfigured or in obvious discomfort. Where injured wildlife is displayed, signage must be provided. Signage should outline the nature and cause of their injury and should be educational to enable the public to understand the reason the wildlife is on display.
- b) All displays must be educational in content and purpose.

2. Records

2.1 Identification

Each animal must be individually identifiable by an approved method of identification specified in the species specific standards (except in the case of group managed species).

- 1) Establishments must keep records of all animals on an individual basis, as specified in the species specific standards and in a form, which can be quickly and easily examined, analysed and compared with those kept by other establishments. (See Appendix 2.)
- 2) All documents and other information pertaining to each animal, including records from previous locations, must be kept safely.
- 3) Copies of all records relevant to those animals must accompany animals moving to new locations. (Refer Appendix 2 transfer sheet.)
- 4) The records must provide for each animal at least the following information:
 - i) the method of identification, the identification number, scientific name, any personal name and any distinctive markings;
 - ii) the origin (i.e. details of the wild population or of the parents and their origin, and of any previous location)
 - iii) the dates of acquisition and disposal, with details of circumstances and addresses;
 - iv) the date or estimated date of birth, and the basis on which the date is estimated;
 - v) details of routine weighings;
 - vi) clinical data, including results of physical examination by a qualified veterinarian and details of and date when any form of treatment was given, together with results of routine health examinations;
 - vii) breeding and details of any offspring;
 - viii) the date of death and the results of any post mortem examination.

3. Transport

3.1 General requirements

- a) Animals to be transported for the purposes of stocking an authorised display must be brought to the establishment under a movement advice or other relevant permit issued by the EPA.
- b) Animals must have access to food and water as required for the length of the journey.
- c) Crates or cages used for transferring animals must be large enough to prevent cramping of the animals but not large enough to predispose to injury through excessive movement. (See individual animal recommendations.)
- d) All animals being transported by road must be appropriately contained to prevent uncontrolled movement or escape during transfer. Crates or cages should be loaded in a manner, which ensures their stability during the journey.
- e) During road transport, when required, animals should be accompanied by an experienced keeper or veterinarian.

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- f) Animals being transported by air must be accompanied by an experienced keeper or veterinarian, to the point of departure and from the point of arrival.
- g) When animals are being transported to overseas destinations, both the consigning and receiving institutions must abide by all regulations set out by Commonwealth Department of Environment, Water, Heritage and the Arts.
- h) When animals are being transported overseas IATA Standards must be observed.
- i) Animals must not be exposed to extremes of temperature or humidity during transport. If loaded on the exterior of a vehicle, animals must be sufficiently protected from wind and rain.
- j) Noise and the time from caging to destination must be kept to the absolute minimum.
- k) If animals are transported in an enclosed vehicle then the prevention of exhaust gases and circulation of fresh air must be ensured.

3.2 Consignment requirements

A person who consigns a live animal must:

- a) affix labels to the container of not less than 20cm in length and 14cm in width on which is clearly, legibly and indelibly printed in capital letters the words LIVE ANIMAL, HANDLE WITH CARE, THIS WAY UP, and KEEP COOL as well as the type of animal in the container;
- b) attach to the outside of the container an envelope in which is contained a consignment note showing the consignor's name, address and telephone number, the consignee's name, address and telephone number, the date of dispatch, the number of animals dispatched and the common name, scientific name of the species enclosed together with all relevant permits; and
- c) comply with the container specifications as itemised in the Species Specific Specifications.

4. Provisions of other Acts

The above exhibit standards of ARAZPAQ are to be regarded as being the recommended minimum standards for wildlife parks to achieve and are not in derogation of the provisions of the *Nature Conservation Act 1992* and the Regulations under that Act.

Where applicable, the Acts and Regulations of other statutory bodies must be complied with.

Appendix 1 — Some conditions relating to the establishment of a wildlife park as required under Environmental Protection Agency Policy

The following general circumstances apply to all applications to keep wildlife in captivity in Queensland.

- a) Any zoo registered in Queensland under Commonwealth Quarantine legislation making application to keep wildlife in captivity must obtain the prior approval of the Chief Quarantine Officer (Animals, Australian Quarantine and Inspection Service).
- b) Two blueprint plans of any proposed new structure, drawn to scale, are to be submitted to the relevant Regional Director with each application, including a site plan and detailed plans and specifications of all cages, enclosures, water reticulation and drainage. These plans are to have been endorsed by the appropriate local authority that all building and health requirements have been satisfied.
- c) Each cage or enclosure, the subject of an application for authorisation to keep wildlife, is to be constructed of suitable materials with all workmanship to be of tradesman standard.

- d) The issue of any subsequent Wildlife Exhibitors Licence is to be subject to the incorporation of all or any endorsements made by the Department on the plans and specifications submitted.

Appendix 2 — Suggested animal record keeping system

ARAZPAQ recommended animal record keeping standards

The following record sheets are those formulated for ARAZPAQ to act as a guideline for record keeping. Basically, record keeping does require diligence but the benefits far outweigh the work involved if you are committed to managing your collection properly.

Listed below are the recommended reports. The daily report format is based on the system that has been adopted Australia wide by the major zoos in order to get some consistency in records being kept. The monthly report format will assist with filling in your annual returns for the EPA.

Record types

- a) **Daily report:** To be filled in daily by the keepers. It should list all events, observations and notes from that day.
- b) **Monthly report:** This is a monthly summary of animal accessions, births, deaths and transactions. It can be used to assist with your annual returns to EPA.
- c) **Individual specimen report:** This is a record of the important details for each animal. For some it will need to be updated regularly according to breedings, treatments or weighings.
- d) **Species (taxon) report:** This is a summary of all individuals held for each species.
- e) **Transaction report:** This report accompanies animals being sent to another institution to provide them with the necessary information on that individual.

Explanatory note: When denoting numbers and sex of a number of individuals it is written showing numbers of males first, numbers of females second and numbers of unknowns third. For example 3 males, 4 females and 2 unknown sex animals is written 3.4.2. One male is written 1.0.0, one female 0.1.0 etc.

1) Daily reports

A sample page with explanatory codes follows. The book can be printed with the codes in the front cover and the park's name on the top. It can be set out so copies of each day's reports can go to the manager or curator while one copy remains in the book. Signature spaces on the bottom helps locate staff and might be used as a staff sign-on procedure.

Institution: Blue Moon Sanctuary

Daily report

Date: 22.1.94

Code	Sex m	f	?	Species	ID	ARKS*	Encl.	Information/notes
INT	0	0	2	Gouldian finch	Red (R)		2-21	To the hospital — Red-faced female. Fluffed and laboured breathing
W/L	1	0	0	Bilby	BQ17		B/H	Weight 2.02kg — very active eating well
DIS	0	0	5	Bearded dragon	R/H			Five released — eggs hatched in tank
BRD	0	0	0	Rose-crown pigeon			4-1	Male chasing female

Please use ARKS specimen ID if animal has no other ID.

Section:

Signatures:

Codes for use:

ACQ = acquisitions	Any public donation, external transfer or collection from institution grounds or the wild.
B/H = birth/hatching.	Birds: Generally recorded as date of leaving the nest but may be the actual hatch date. If a hatch date is used it must be noted as such under Information. Marsupials: The date on which the animal is 'permanently out of the pouch' or the day a juvenile is thrown from the pouch. Placentals: The day on which they are born.
D/30 = death within 30 days	Death/euthanasia within 30 days of birth, hatching or acquisition.
D/E = death established	Death/euthanasia of any specimen which has been resident in the collection for longer than 30 days.
DIS = disposition	Includes releases, external transfers, sales, escapes.
BRD = breeding	Any nesting, laying of eggs, oestrus, menstruations, matings, courtship, pouch checks, sexing of the previously unsexed individuals or any other reproductive matter.
INT = internal movements	Any movement of an animal from its residing enclosure, be it within a section or to a different section. This does not include transfers out of the institution.
TAG = tagging	Banding, tagging, nothing, tattooing, naming or any other method of identification.
W/L = weight/length	Weight or length measurements.
Rx = treatment	Any treatment administered to animals either by the vets or continuing treatments administered by wildlife staff.
VET = vet examination required	Notes if veterinary treatment/examination is required.
OBS = observation	Any notable observations made in reference to daily routine or animals such as behaviour, change to routine etc.
COND = conditioning	Notes pertaining to behavioural conditioning.
OTH = other	Anything else of interest that need to be passed on to curators, vets or records officer such as diet change, maintenance etc.
K/N = keeper's notes	Any notes which need to be left for staff who are working the following day, general messages etc.

White copy stays in book.
Yellow copy to records officer.
Pink copy to curator/manager.

2) Monthly reports

A sample copy follows. It is fairly easy to set up on your word processor so it can be filled in regularly as relevant things happen.

Monthly report

Institution Blue Moon Sanctuary

Month of January 1994

Accessions

Page 1

Accession no	Date	Species	Injury	Treatment & Result
A001	1.1.94	Noisy miner	Fell out of nest	Handraised — released in grounds 20.1.94
A002	3.1.94	Blue tongue lizard	Dog attack	Died
A003	3.1.94	Black duck	No visible injury	Released on pond after observation

Stock acquisitions

Page 1

Accession no	Date	Species	Acquired from	To enclosure no.
A004 -007	7.1.94	Diamond dove x 4	Dovetown	Grassland aviary
A008	12.1.94	Emu	Emu farm	Kangaroo paddock

Births

Page 1

Date	Species	No born m	f	?	Individual	Parents	Comments
2.1.94	Grey kangaroo	1	0	0	yellow tag	Lucy and Bo	Top paddock – out of pouch
6.1.94	Red winged parrot	0	0	4		C6 and C8	Breeding aviary 2

Transactions and releases

Page 1

Date	Species	No and sex m	f	?	Method of disposal	Reason
14.1.94	Boobook owl	1	0	0	To Joe Bloggs	Rehabilitation
20.1.94	Australian ibis	20	20	20	To Currumbin Sanctuary	Excess

Deaths

Page 1

Date	Species	No and sex m	f	?	Method of disposal	Reason
13.1.94	Red necked	1	0	0	Kangaroo wallaby paddock	Found dead – choked on a paper bag

3) Individual specimen report

(This format is based on the ARKS format so that it is easily read by those with and those without the ARKS system.)

Individual specimen report

INSTITUTION: Blue Moon Sanctuary
SCIENTIFIC NAME: *Columba leucomela*
COMMON NAME: Pigeon
ACCESSION NUMBER: C92003
ACQUISITION DATE: 2 Mar 1992

REPORT DATE: 12 April 1993

CURRENT STATUS>>>

DOB: 25.12.91
SEX: Unkown
TATTOO:
STUDBOOK NUMBER:
HOUSE NAME: Feral
TAG/BAND: BM23 R
ENCLOSURE: Coop

DAM ID: UNK
SIRE ID: UNK
DAM'S INSTITUTION: Blue Moon
SIRE'S INSTITUTION: Blue Moon
REARING: Parent

TRANSACTION HISTORY>>>

#	Terms/party	Their Spec. Id	Date
1	Birth		25.12.91

SPECIAL DATA & COMMENTS>>>

#	Text	Date
1	Weight 40g	3.1.92
2	Banded BM23 R	15.1.92

ENCLOSURE LOG>>>

#	Enclosure	Date
1	Coop	25.12.91

Species (taxon) report

Institution: Blue Moon Sanctuary

Report date: 2/12/93

Scientific name: *Trichorurus vulpecula*

Common name: Common brushtail possum

House_ IDs	name/tatoo/cage/studbook no.	Sex/age	Dates: Birth/in/out	Origin/party: Dam/sire/their ID
4001	Brushy	m 4yrs	Unk 6/6/89	Wild born Gold Coast
4002	Martha	f 2 yrs	Unk 7/8/91	Wild born Brisbane
4003	Joey	f 5 months	5/06/1992 5/01/1993	captive born: 4001 4002 death

Animal transfer sheet

To: Green lagoon Sanctuary

Date: 12.12.93

Common name: Pigeon

Scientific name: *Columba leucomela*

Subspecies:

Sex: female

Studbook no.:

Name/tag/distinguishing features: BM23 R

History>>>

Place of birth/origin: Blue Moon

Date: 25.12.91

Sire/dam/place of birth: Blue Moon

Date: Unk

Rearing: Parent **Weight:**

Date:

Reproductive history: None

Diet details: Pigeon mix

Special habits or problems:

Housing, compatibility, comments:

Medical history: Canker treated March 1992

Part A — Koalas *Phascolarctos cinereus*

Ratified by Queensland Parks and Wildlife Association (now known as Australasian Regional Association of Zoological Parks and Aquaria Queensland (ARAZPAQ)) on 6 May 1994.

Approved by the Minister for Environment and Heritage on 24 March 1995.

Reviewed by ARAZPAQ and the Environmental Protection Agency (EPA) May 2006.

Prepared by ARAZPAQ and the EPA.

General information

The Koala *Phascolarctos cinereus* is a highly specialised arboreal marsupial which feeds primarily on the Genus Eucalyptus. Other genera of the family Myrtaceae are also browsed (as are a variety of other non-eucalypt species) depending on the area concerned, the individual Koala and the availability of or access to preferred browse species. Free ranging populations of Koalas tend to be clustered around areas of “core” habitat (i.e. areas with variable densities of preferred food trees but usually influenced by changing edaphic features such as soil fertility). Preferred food trees also change from area to area.

Adult Koalas generally live in discrete home range areas which vary in size depending on both the sex of the individual (males tend to have larger home ranges than females) and the quality of the habitat (in terms of access to preferred browse species). Areas of “core habitat” subsequently tend to be occupied by the same animals on a year round basis in a socially stable structure of essentially mutually exclusive home ranges with varying degrees of overlap. Successful captive management of Koalas is contingent upon the provision of an adequate diet, an understanding of the social behaviour of the species at the population level and the recognition of such socio-biological considerations in captivity.

Due to the low nutrient content of their diet koalas conserve their energy by spending long periods asleep or resting. Koalas have low body fat reserves and loss of appetite for any reason leads rapidly to loss of body condition, dehydration and possibly increased susceptibility to secondary infections.

Every effort should be made to obtain koalas from existing captive stocks. Apart from bona fide scientific research or educational purposes, permits to take koalas from the wild are normally not issued by EPA.

The breeding of Koalas in captivity by persons authorised to keep the species is to be encouraged.

The standards presented here are to be read in conjunction with the general conditions section of the Code of practice of ARAZPAQ.

1. Husbandry

- a) A suitably qualified attendant must be nominated to be in charge of the proposed display. Such an attendant is to have the following minimum experience and ability:
 - i) either at least six months full time work with a koala display, during which time he/she was primarily responsible for collecting food and supplying it to koalas, or at least twelve months work as a full time animal attendant in charge of the maintenance of mammals in a zoo or similar institution. (Note that in this situation, the attendant must be capable of monitoring koala reaction to offered food and of early detection of any deterioration of koala health/condition); and
 - ii) a demonstrated ability to identify koala food trees.

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- b) Koalas require a substantial amount of fresh eucalypt leaves daily for their healthy maintenance in captivity. Unless alternative arrangements are identified, persons proposing to keep koalas must establish and control a plantation of feed eucalypts sufficient to meet the need of the proposed colony. Details of the plantation arrangements must accompany the application.
- c) The plantation must be partially established prior to the arrival of the koalas and must be capable of sustaining 50% of the colony within 5 years, and aim for total self sufficiency within 10 years.
- d) taking the date of promulgation of these conditions as the base date to comply with the 5 year recommended time span.

2. Facilities

The following minimum guidelines will apply to structures used to house koalas for display:

- a) Each enclosure is to have a wall with a minimum height of 1.2 metres and is to be constructed of a material with an internal and external surface which will prevent the escape of the koalas (and prevent entry of wild koalas) or such other minimum standard as is determined by Government legislation.
- b) Each cage or enclosure is to provide protection for the koalas against interference from other animals and the public.
- c) Where a mixed sexes exhibit is proposed, each cage or enclosure with less than 50 square metres of floor space must not contain more than two male koalas thirty months of age or older. This requirement shall apply proportionally to enclosures of up to 500 square metres of confined floor area in size.
- d) Enclosures may be of open, semi-enclosed or totally enclosed design.
- e) The size and shape of enclosures must provide freedom of movement, both vertically and horizontally.
- f) Each cage or enclosure is to be fitted with stout branches and/or tree limbs.
- g) Each cage or enclosure is to have reticulated water available for both cleansing and koala drinking purposes.
- h) Fresh soil may be provided, but not around the base of vertical supports, to provide for supplementation of mineral intake.
- i) There must be a least two resting forks per koala not less than 1.2m above the ground on a vertical support and no closer than 0.9m to the next vertical support.
- j) Horizontally aligned limbs at a minimum height of 1.2 metres off the ground may also be used to connect the resting limbs and cleaned.
- k) All supports and branches must provide sufficient traction for koalas to climb easily and safely.

3. Diet and feeding

- a) An establishment applying for a permit to exhibit koalas must satisfy the EPA that it has guaranteed access to adequate fresh supplies of eucalypt leaves that it has guaranteed access to adequate fresh supplies of eucalypt leaves from at least five suitable koala food tree species.

Known food trees growing naturally in Queensland include the species listed:

E. camaldulensis	River red gum
E. crebra	Narrow-leaved red ironbark
E. drepanophylla	Grey ironbark
E. dunnii	Dunn's white gum
E. exserta	Queensland peppermint
E. grandis	Flooded or Rose gum
E. henryi	Large-leave spotted gum
E. maculata	Spotted gum
E. major	Grey gum
E. melliodora	Yellow box
E. microcorys	Tallowwood
E. moluccana	Gum-topped or Grey box
E. nicholii	Narrow-leaved black peppermint
E. ochrophloia	Yapunyah
E. pellita	Large fruited red mahogany
E. pilularis	Blackbutt
E. populnea	Poplar or Bimble box
E. propinqua	Small-fruited grey gum
E. punctata	Large-fruited grey gum
E. resinifera	Red stringybark or Red mahogany
E. robusta	Swamp mahogany or Swamp messmate
E. saligna	Sydney blue gum
E. seeana	Narrow-leaved grey or Narrow-leaved red gum
E. sideroxylon	Red ironbark or mugga
E. signata	Scribbly gum
E. tereticornis	Queensland blue or Forest red gum
E. viminalis	Ribbon or Manna gum
L. conferta	Brush or Pink or Queensland box

- b) Fresh food in the form of acceptable browse species is to be provided within reach of koalas sitting in the resting forks. This browse must be secured with the cut ends in clean water and must be replaced at least once daily.
- c) Frequency of leaf cutting and the operation of leaf storage facilities must ensure the koalas receive palatable, uncontaminated, nutritionally adequate food leaves.
- d) A variety of different species of suitable koala food trees must be offered as a precaution against local or seasonal differences in digestibility and palatability of dietary leaf matter. Both young and mature leaves should be provided whenever possible.

4. Records

4.1 Identification

Each individual koala will be marked at all times by a serially numbered implantable transponder (or other identifying device as regulated by the EPA) affixed by a veterinary surgeon under the EPA direction.

4.2 Records

- a) Each koala must be weighed at least monthly and a permanent record of these weights maintained. (See Appendix 1.)
- b) The requirement for weighing animals monthly may not apply to koalas which are free-ranging and are not dependent on provision of hand-cut browse for nourishment.

4.3 General

All requirements for maintaining records in the general conditions section must also be compiled with.

5. Transport

5.1 General

All conditions for transport outlined on the document on general conditions will apply.

5.2 Journeys over two hours

- a) Koalas must be transported individually in solid framed cages measuring at least 55cm x 45cm x 60cm high.
- b) The cages should have removable, leakproof drop trays fitted at the base. The sides and top should be stout mesh and be fitted with light covers of hessian or shadecloth. Each cage should be fitted with a resting fork.
- c) For the trip fresh browse leaves must be placed in the cage with the koala, the amount to be determined by the qualified person in charge.
- d) Within each transport cage koalas must not be subjected to temperatures greater than 25°C or less than 10°C during the trip.
- e) The koalas must not be removed from the cages or handled in transit unless it is considered essential for the well-being of the animal by the veterinarian or accompanying keeper.
- f) The person accompanying road transported koalas must provide a detailed report to the receiving institution on the animals' behavior prior to and during transport. In the case of air transport, a detailed written report should be forwarded to the receiving institution with the koala.

5.3 Journeys of less than two hours

- a) Solid sided cages must have air holes on all sides and the top
- b) Each box must be fitted with at least one vertical support or resting fork
- c) Conditions a), c), d), e), f) of Section 5.2 also apply

6. Quarantine

- a) Koalas to be transferred between establishments must be subject to a period of 30 days quarantine at either the importing or exporting establishment unless an exemption from the quarantine period is advised and certified by a veterinarian following a thorough physical examination. The certificate must also establish that the koala is not:
 - i) in a weakened or emaciated condition, and
 - ii) is free from clinical signs of disease.

7. Photographic opportunities and handling

7.1 Types of photographic opportunities

- a) Body to body handling: This is the direct transferring of a koala from a keeper to the body of a member of the public.

- b) Keeper assisted photography: This is when the koala is held by the keeper at all times and the public stand beside them.
- c) Pole photography — animals relocated: This is where a koala is removed from its current resting fork and is placed in a low tree fork where the public can stand or be seated beside the koala for a photo.
- d) Pole photography — animals not relocated: This is when the visitor is allowed into the koalas usual enclosure and can stand beside the resting koala for a photo opportunity.

7.2 Conditions on handling for Section 7.1 a) b) c) — Types of photographic purposes

- a) All time that an individual koala is handled is to be recorded. Handling time includes any time when a koala is removed from its normal place of residence (i.e. time the disturbance of its normal routine, not just the time in contact with persons other than their keepers.)
- b) A record sheet and roster schedule, in an approved format, including all times of all koalas handled must be maintained, and be available for inspection at any time. (See Appendix 2.)
- c) The maximum period that an individual koala may be handled is 30 minutes a day.
- d) The maximum period that an individual koala may be handled is 180 minutes a week.
- e) An individual koala must not be used more than 3 days consecutively before receiving a rest day.
- f) Every individual koala must be adequately tagged to allow accurate and easy recognition by the koala keepers.
- g) Only trained koala keepers are to place onto or remove a koala from another person's body or a tree fork.
- h) Only captive bred koalas of suitable temperament, which is to be determined by the responsible koala officers, are to be handled.
- i) Only fully weaned or independent koalas are to be handled.
- j) At absolutely no time is a female koala to be handled when it has pouch young or back young.
- k) Sufficient numbers of experienced, identifiable employees must be in attendance where any koala handling occurs, to protect the koalas from abuse and harassment and to ensure that the koalas are not upset.

7.3 Conditions relating to Section 7.1 d) — Types of photographic purposes

- a) At no time are the koalas within the enclosure to be disturbed. This includes disturbance by touching, movement of resting forks or by audible distractions.
- b) Sufficient numbers of experienced, identifiable employees must be in attendance to protect the koalas from abuse and harassment and to ensure that the koalas are not upset.

8. Death of stock

Under the EPA requirements deaths of koalas must be reported in writing to the chief executive of the EPA or to the relevant Regional Director within one month. The report must be accompanied by an autopsy report prepared by a qualified veterinarian.

9. Provisions of other Acts

The above exhibit standards of ARAZPAQ are to be regarded as being the recommended minimum standards for wildlife parks to achieve and are not in derogation of the provisions of the *Nature Conservation Act 1992* and Regulations under the Act.

Where applicable, the Acts and Regulations of other statutory bodies must be complied with.

Appendix 1 — Koala monthly weighing record

Institution name:

Koala weights

Name:

ID number:

Date	Weight	Note

Appendix 2 — Koala handling time records

Institution:

Date:

Koala name	Time out	Time in	Total	Handler

Institution:

Daily time delegation sheet for koala handling

Date:

Name	Enclosure no.	Tattoo no.	Max. allowable	Actual time used	Total

Part B — Macropods (kangaroos, wallabies and allies)

Ratified by Queensland Parks and Wildlife Association (now known as Australasian Regional Association of Zoological Parks and Aquaria Queensland (ARAZPAQ)) on 6 May 1994

Approved by the Minister for Environment 24 March 1995.

Reviewed by ARAZPAQ and the Environmental Protection Agency (EPA) May 2006.

Prepared by ARAZPAQ and the EPA.

General information

Members of the Macropodoidea are characterised by powerfully developed hind limbs, long feet and an elongated fourth toe. They are such a diverse group that they fill a much broader ecological role than any other family or super family of large mammals elsewhere in the world. Macropod species make up about 40% of the marsupial fauna of Australia.

Macropods are divided into two families, the Potoroidae and the Macropodidae.

The Potoroidae includes the musky rat kangaroo, potoroos and bettongs. These are similar in appearance to Kangaroos but are much smaller in stature. Their diet varies between species but tree roots, tubers and invertebrates tend to be major components. The habitat of Potoroos range from wet sclerophyll forests to heathland while bettongs are animals of drier country ranging over dry sclerophyll forest and desert sand hills.

The Macropodidae, despite general similarities in appearance, have a wide range of adaptations. The hare wallabies, pademelons, swamp wallaby and quokka are predominantly browsing animals feeding on tender shoots or twigs of shrubs and trees. Kangaroos, typical wallabies, rock wallabies and nailtail wallabies are grazers feeding on herbage and grasses. They are typically inhabitants of open plains but often retire to forest areas to sleep during the day.

Every effort should be made to obtain macropods from existing captive stocks. Apart from bona fide scientific research or educational purposes, permits to take macropods from the wild are normally not issued by the EPA.

The standards presented here are to be read in conjunction with the general conditions section of the Code of practice of ARAZPAQ.

1. Husbandry

- a) A suitably qualified attendant must be nominated to be in charge of the proposed display. Such an attendant must be capable of:
 - i) safely handling and restraining macropods.
 - ii) minimising the likelihood of and danger of attacks on keepers and visitors by macropods.
 - iii) minimising the stress experienced by macropods resulting from keepers carrying out routine duties.
 - iv) providing adequate maintenance diets for the macropods held.
 - v) demonstrating their competency in the maintenance and husbandry of macropods.
- b) Particular attention should be paid to removing faeces from around feeding stations, watering points and resting areas.

2. Facilities

2.1 Construction

- a) The size and shape of enclosures for macropods must provide freedom horizontally and, where warranted, vertically and must not fall below the minimum requirements set forth under 2.5 a), b), c) and d).
- b) To minimise damage to display facilities, macropod enclosures may incorporate an adjoining night yard(s). A number of display enclosures may make use of the same night yard. The size of night yards must not fall below one third of the minimum requirements for display enclosures
- c) The enclosure must be well drained and the substrate predominantly compacted inert material which is non-abrasive to macropod feet. Concrete is only acceptable for short term holding/hospital enclosures.
- d) The accumulation of faeces and urine in or on the substrate around watering and feeding points must be prevented by one of the following:
 - i) providing readily cleanable substrate around fixed watering/feeding points.
 - ii) providing a readily replaceable substrate around fixed watering/feeding points.
 - iii) providing readily moveable feeding/watering points.

2.2 Fences

- a) Where a perimeter fence forms part of the boundary of a macropod display, provision must be made to protect the animals from outside disturbances through the use of visual barriers or other suitable barrier.
- b) If climbing species (Musky rat-kangaroo, rock wallabies, tree kangaroos and bettongs) are to be enclosed by unroofed fences, then the fences should either be made of a material which is not climbable (min.1.4m high; 2m for rock wallabies) or be rimmed by 45 degree outrigger 0.5m wide facing into the enclosure
- c) Fences which incorporate obstacles protruding out from the fence line into the enclosure must not be used.
- d) Support posts and straining wires for fences should be on the outside of any enclosure.
- e) Changes in the direction of fence lines must be as smooth as possible. Any fence angle change must be clearly visible to the macropods. Where there is dense planting behind changes in the angle of wire mesh fences, the fence must be of more visible construction. Bushes may be planted inside the enclosure, or loosely fitted wire mesh may be placed across corners to reduce the impact of a macropod encountering sharply angled corners.

2.3 Enclosure furniture

- a) Enclosure fixtures and fittings must be of such style and position as to prevent the likelihood of injury and, in particular, must not be placed so as to provide an obstacle which will injure a macropod running a fence line.
- b) Suitable ground cover and/or other sight barriers must be provided so that individuals can isolate themselves visually from the viewing public and other macropods sharing the enclosure.

- c) Without limiting the generality of (b), suitable ground cover for the following macropod species includes:
 - i) Musky rat-kangaroo rocks, bettong/hare wallabies grass tussocks, nailtails, dorcopsis low plants/bushes pademelons, quokka small shade trees, solid and hollow logs, dried grass, leaves to make nests, soil deep enough for burrowing species to make warrens.
 - ii) Rock wallabies, wallaroos large rocks forming a rock knoll, rock crevices, caves, overhangs, low growing shrubs/bushes, small shade trees.
 - iii) Tree kangaroos vegetation on easily climbed branches, elevated hollow logs/boxes.
 - iv) Other species shade trees — add smaller trees, bushes for Eastern grey kangaroos.
- d) Ground cover must be arranged so as to provide numerous pathways and hiding loci which serve to prevent stereotypic behavior.
- e) Enclosures for tree kangaroos must include trees which they can climb or rough-barked naturalistic climbing structures. (These may also be provided for musky rat-kangaroos and rock wallabies.) There must be 15 lineal metres of climbing structure tree for each tree kangaroo. Tree kangaroos must be able to climb to a height of at least 2.5m. Enclosure boundaries must be sufficiently distant from trees and climbing structures to prevent tree kangaroos from jumping out. The requirement for naturalistic climbing structures may be met by providing a selection of stout, forked branches, low vertical logs and inclined branches to ensure a variety of arboreal pathways.
- f) All animals must be provided with a means of sheltering from wind, rain and extremes of temperature and sunlight. (This requirement may be fulfilled by providing a combination of ground cover or external plantings.)
- g) There must be sufficient soft substrate/bedding to allow all macropods to create a hip-hole for comfortable resting.

2.4 Inter/intra-specific aggression reduction

- a) Macropod species noted for interspecific aggression must not be held together in the same enclosure.
- b) If an individual macropod is being dangerously stressed by the aggression of other animals in the enclosure, it must be removed from that enclosure.

2.5 Space requirements

The following minimum floor areas required to house up to two (2) individual macropods for display:

a) Species	Minimum floor area (sqm)
Rufous Bettong <i>Aepyprymnus rufescens</i>	15
Tasmanian Bettong <i>Bettongia gaimardi</i>	15
Burrowing Bettong <i>Bettongia leseuer</i>	15
Brushtailed Bettong <i>Bettongia penicillata</i>	15
Desert rat kangaroo <i>Caloprymnus campestris</i>	10
Musky rat kangaroo <i>Hypsiprymnodon moschatus</i>	15

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Spectacled hare wallaby <i>Lagorchestes corispicillatus</i>	20
Rufous hare wallaby <i>Lagorchestes hirsutus</i>	20
Long footed potoroo <i>Potorous longipes</i>	15
Long nosed potoroo <i>Potorous tridactylus</i>	15
Bridled Nailtail wallaby <i>Onychogales fraenata</i>	40
Northern nailtail wallaby <i>Onychogales unguifers</i>	40
Black footed rock wallaby <i>Petrogale lateralis</i>	40
Brushtailed rock wallaby <i>Petrogale penicillata</i>	40
Yellow footed rock wallaby <i>Petrogale xanthopus</i>	40
Muellers New Guinea forest wallaby <i>Dorcopsis muelleri</i>	60
Tasmanian pademelon (red-bellied) <i>Thylogale billardierii</i>	40
Reg legged pademelon <i>Thylogale stigmatica</i>	40
Red necked pademelon <i>Thylogale thetis</i>	40
Agile wallaby <i>Macropus agilis</i>	200
Antilopine wallaroo <i>Macropus antilopinus</i>	200
Black wallaroo <i>Macropus bernardus</i>	200
Black striped wallaby <i>Macropus dorsalis</i>	60
Tammar wallaby <i>Macropus eugenii</i>	30
Western grey kangaroo <i>Macropus fuliginosus</i>	200
Eastern grey kangaroo <i>Macropus giganteus</i>	200
Western brush wallaby <i>Macropus irma</i>	60
Parma Wallaby <i>Macropus parma</i>	30
Whiptail prettyface Wallaby <i>Macropus parryi</i>	200
Common wallaroo <i>Macropus robustus</i>	200
Rednecked wallaby <i>Macropus rufogriseu</i>	60
Red kangaroo <i>Macropus rufus</i>	200
Quokka <i>Setonix brachyurus</i>	30
Swamp wallaby <i>Wallabia bicolor</i>	60
Bennetts tree kangaroo <i>Dendrolagus bennettianus</i>	40
Goodfellows tree kangaroo <i>Dendrolagus goodfellowi</i>	40
Lumholtzs tree kangaroo <i>Dendrolagus lumholtzi</i>	40
Matschies Tree Kangaroo <i>Dendrolagus matschiei</i>	40

- b) An additional 25% of the area listed in 2.5 must be added to the enclosure size for each extra adult female.
- c) An additional 50% of the area listed in 2.5 must be added to the enclosure size for each extra adult male.(Note: Some species will not tolerate any additional males)
- d) Where there are more than one species per exhibit then the area required is the sum of the areas for each individual species.

- e) Where visitors are permitted to go into an enclosure with macropods, there must be an area, which at least meets the minimum size requirements for holding yards, which is designated off limits to the visitors so the enclosed macropods may escape unwanted visitor attention.

2.6 Nocturnal house

As all species of macropod are considered to be predominantly nocturnal and/or crepuscular, they may be exhibited in a reversed lighting enclosure which meets the requirements of section 2.5 a), b), c) and d).

2.7 Capture methods

- a) A macropod enclosure should include or have access to a confinement run, or well padded crush. Small macropods may be caught in a race made of nets.
- b) Other methods of capture include deep hoop nets, capture bags and darting with an appropriate sedative under veterinary supervision.

3. Diet and feeding

- a) Supplementary food must be available in addition to the vegetation growing in the enclosure.
- b) Omnivorous species (potoroos, bettongs, *Hypsiprymnodon*) must be provided with the opportunity to obtain animal-based food appropriate to the species in addition to vegetation-based food.
- c) The available space at feed and water receptacles must be sufficient to ensure easy access to food and water by each individual.
- d) Suitable fibrous material must be a component of all macropod diets.
- e) Dry food containers (pellets must be kept clean, dry and free from pellet dust accumulation.)
- f) A water trough must be provided which is sufficiently large to allow each macropod to immerse its forelegs for cooling purposes.

4. Records

4.1 Identification

- a) Approved methods of ID include eartags, microchips, tattoos (only where ventral surface of ear or inside of hind leg is relatively hairless)
- b) Large numbers of individuals in free-ranging populations need not be individually identified.

5. Transport

5.1 General

For all transport trips, macropods should, whenever possible, be transported individually in a container constructed from fibre board, hardboard, wood/plywood or other appropriate material to the design requirements of section 5.2. The specifications of materials to be used in transport box construction are detailed in appendix 1.

5.2 Journeys over two hour

- a) Macropod transport containers should not have internal framing.

- b) Bottom and fixed sides should be glued and screwed.
- c) Macropod transport containers must not have slatted floors.
- d) The end is to be closed by a sliding door of 6mm (13mm for macropods weighing more than 20kg) plywood which, once in place, must be secured at each end.
- e) Ideally, the ceiling must not be solid. It must, if possible, consist of flexible chicken wire mesh, padded on the underside with hessian to protect the animal's head should the animal become agitated and jump.
- f) The container must be large enough for the animals to turn around, to lie and to stand comfortably. Dimensions should not exceed these criteria as no room for exercise is needed and animals may hurt themselves by jumping if too much room is provided.
- g) A transport container for macropods should not allow the entry of direct light, except through ventilation holes. The ventilation holes should be 50mm below the internal roof height and 50mm above the absorbent material used on the floor of the container to prevent spillage. The ventilation holes of 15mm diameter should be pierced at no greater than 100mm centres at the top and bottom of each side.
- h) Spacing rails of 25mm thickness must be fixed to the outside of the box on all fixed sides.

5.3 Journey under two hours

For transport trips of less than 2 hours duration, macropods may be transported in bags made of hessian or similar open weave material. The animals should be accompanied by a person described in Section 1.(a) who should monitor their condition.

5.4 Sedation

If required, macropods may be sedated with an appropriate drug administered under the direction of a registered veterinarian before being enclosed in transport containers.

5.5 Release from container

- a) An enclosure in which macropods are to be released must have any wire fences made more visible by hanging hessian or similar material.
- b) Macropods must not be disturbed for at least three hours after release into their new enclosure to allow familiarisation with their surroundings. They must not be disturbed until all sedation has worn off.

6. Walk-through enclosures

All macropods must be monitored for aggression towards the public or staff and aggressive animals removed from a walk-through situation. It is not desirable to have hand-raised male macropods of any species housed in a walk-through area.

7. Provisions of other Acts

The above exhibit standards of ARAZPAQ are to be regarded as being the recommended minimum standards for wildlife parks to achieve and are not in derogation of the provisions of the *Nature Conservation Act 1992* and the Regulations under the Act.

Where applicable, the Acts and Regulations of other statutory bodies must be complied with.

Appendix 1 — Specifications of materials to be used in macropod transport box construction

Macropod weight	Frame (mm)	Side walls (mm)
Over 20kg	25 × 25	13
Under 20kg	20 × 20	6

Part C — Raptors

Ratified by Queensland Parks and Wildlife Association (now known as Australasian Regional Association of Zoological Parks and Aquaria Queensland (ARAZPAQ)) on 4 November 1994.

Approved by the Minister for Environment and Heritage on 24 March 1995.

Reviewed by ARAZPAQ and the EPA.

Prepared by ARAZPAQ and the EPA.

General information

The word raptor comes from the Latin word for a plunderer, stemming from raptare ‘to seize and carry away’. These birds are active predators and are collectively known as birds of prey. In Australia raptors are members of four families — Accipitridae, Falconidae, Tytonidae and Strigidae (eagles, kites, hawks, falcons and owls).

The owls (strigids) are specialised raptors for crepuscular and nocturnal predation. They have an advanced design to their eyes, ears and soft plumage which adapt them well to their nocturnal habits.

The diurnal birds of prey, which are the majority of raptors, have been traditionally grouped into one big order, the Falconiformes. They share a number of physical and behavioural characteristics. All have hooked beaks, strong feet and large eyes. They additionally have a well-developed crop. Most species adopt a characteristic posture when drying out after rain or sunbathing, with the wings fully extended and the body upright.

Raptors show marked uniformity in breeding biology despite the wide variation in sexual dimorphism and dietary habits. Most species breed as pairs within a defended territory. Both sexes take part in the selection and preparation of the nest.

Every effort should be made to obtain raptors from captive stock or through the acquisition of suitable unreleaseable injured birds.

The standards presented here are to be read in conjunction with the general conditions section of the Code of practice of ARAZPAQ.

1. Husbandry

1.1 Staff qualifications

Raptors shall be under the supervision of a person capable of:

- a) safely handling and/or restraining raptorial birds;
- b) minimising the likelihood of, and danger of, attacks on keepers by raptors;
- c) minimising the stress experienced by raptors;
- d) providing adequate maintenance diets for the raptorial birds held; and
- e) recognising aberrant behaviour and indicators of ill health in the species under their supervision.

1.2 Tethering

Tethering is an important tool in the training and maintenance of free flying raptors. 24 hour tethering is acceptable during the initial training phase of raptors though is not suitable for the long term. The period of 24 hour tethering may be variable and as conditioning progresses birds should be moved to free lofting facilities.

- a) If raptors are tethered on display, it shall only be for educational demonstration or other purposes approved by the chief executive, EPA. The tethered raptors shall be under constant supervision to protect them from the public and animal predators. Birds normally used for demonstrations may remain jessed. Note: EPA guidelines must also be followed.
- b) If raptors are to be tethered, then the person wishing to handle the birds shall have received adequate training in the manufacture and use of the following falconry equipment:
 - Aylemerie leather jesses
 - gloves
 - jess swivels
 - hoods
 - leashes
 - perches
- c) Tethered birds must have access to fresh water and shade at all times that they are not under immediate supervision.
- d) Birds must be tethered on a non-abrasive surface; concrete or similar surfaces must be covered with an appropriate matting to lessen impact and eliminate abrasion.
- e) When using a bow perch the tethering leash must be long enough to be carried over the highest point of the perch and reach the ground on the opposite side to avoid hanging.
- f) The tethering leash should be no longer than necessary to satisfy 1.2e) and to allow access to water and shade. Long leashes may give the bird the illusion that they are untethered, resulting in undue stress.
- g) Tethering perches shall be of a design to allow for the free movement of the leash, swivel, and jesses. There must be minimal chance of entanglement.
- h) Bow and similar perches must be bound or covered with a low impact material to minimize pressure points on the bird's feet.
- i) The diameter and surface of the tethering perch should be varied weekly to avoid pressure points on the bird's feet.
- j) Non-handled, nervous or new birds should be tethered with a bumper leash attached between the perch and the tethering leash to lessen the impact on the legs when the bird baits.
- k) All tethering equipment (e.g. anklets, jesses, swivels and leashes) must be regularly checked for wear or damage and be well maintained and replaced when necessary.

1.3 Diet and food collection

- a) General
 - i) Suitable whole animals shall provide at least 50% of the nutritional and energy requirements of raptors, noting that for piscivorous species at least 25% of the dietary requirements shall be fish and for birds of the Accipiter and Erythrotriorchis genera and bird-hunting species of the Falco genera at least 60% of their diet shall be suitable bird species

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- ii) Suitable whole animals will depend upon the species and will include: mammals such as guinea pigs (for Condors); domestic mice, rats, rabbits (for mammal eating species); fish (for piscivorous species); insects (for insectivorous species); birds, such as coturnix quail, domestic chickens (for bird eating species) and any natural prey species which can be legally obtained.
 - iii) An establishment applying for a permit to exhibit raptors must have guaranteed access to adequate fresh and/or frozen supplies of suitable whole animals.
 - iv) Mammal and bird specimens less than six (6) weeks of age shall not form more than 50% by weight of the diet fed to raptors in any one week.
 - v) Except on starve days, a sufficient quantity of food shall be provided daily so that there is some left over each day.
 - vi) Raptors may be given no more than one starve day a week and there shall be at least three days between any two starve days.
 - vii) Food items shall be placed on a non-contaminated surface.
- b) Quality of food
- i) Food supplied to raptors shall be clean and fresh, obtained from a reliable source and, preferably, bred under laboratory conditions.
 - ii) Before carcasses are offered as food, they shall be cut open and observed for gross lesions suggestive of disease.
 - iii) The following shall not be fed to raptors:
 - any animal that had died, or is suspected of dying from any toxic material, including insecticides, rodenticides, and euthanasing chemicals (carbon dioxide is acceptable).
 - animals showing clinical signs of being infected by disease (especially trichomoniasis protozoa in pigeons and doves).
 - birds which have not undergone treatment to remove the risk of trichomoniasis infection. (Preferred treatment: freeze for at least 24 hours at a temperature equal to or below -18°C or remove upper gastro-intestinal tract directly after euthanasia).
 - laboratory mice and rats that have been used in those research programs which lead to the food animals containing chemicals different from those of normal laboratory fed mice and rats.
 - fatty meat.
 - meat which has not been supplemented with an appropriate calcium additive.
 - animals which have been killed by lead shot.

1.4 Hygiene

- a) Substrate of enclosures shall be cleaned at least weekly. The substrate and fixtures and fittings shall be maintained in a clean and hygienic condition, free from the accumulation of faeces and urates.
- b) Excrement, left-over food, fur, feathers and castings shall be removed at least twice weekly to avoid unhealthy and unsightly accumulation of these matters.

- c) Solid surfaces within the enclosure shall be disinfected at least bi-annually. These surfaces shall first be washed with soap and water, or steam. Disinfected surfaces shall be rinsed before raptors come in contact with them again. Use of suitable disinfectants shall be under veterinary instruction.
- d) Enclosure fixtures and fittings made from wood shall be replaced after a period of no more than two years. The items replaced shall be destroyed by burning. In reference to nest boxes and logs these shall be assessed and/or cleaned or destroyed at the end of each breeding season and replaced as necessary.
- e) Entry of potential pests, such as wild rodents, birds and insects shall be controlled.
- f) The use in or around raptor enclosures of insecticides containing chlorinated hydrocarbons and animal poisons, e.g. rodent baits, shall be under veterinary instruction in view of the known toxicity of these substances to raptorial birds.

2. Facilities

2.1 General requirements

- a) Enclosures shall include a covered shelter, enclosed by weatherproof walls which provide roost security and protection from wind, rain and extremes in temperature and sunlight.
- b) Enclosures for raptors shall include access to water for bathing.
- c) Enclosures shall be well drained and have either a readily cleanable substrate or be of a material which can be replaced to avoid the accumulation of faeces, urates, fungi and moulds.
- d) Mesh netting surfaces for raptor enclosures shall be flexible to reduce the impact of birds colliding with it. Wire roof surfaces should be as near to horizontal as possible.
- e) The size and shape of enclosures for raptors shall provide freedom of movement, both vertically and horizontally and should not fall below the minimum requirements set forth under section 2.5.
- f) Access to raptor enclosures should be through a double door safety entrance.

2.2 Treatment facilities

Suitable low light, warm isolation facilities shall be available for treatment of sick animals.

2.3 Inter- and intra-specific interaction (aggression reduction)

- a) Raptor species of similar size and hunting capacity may be held together in the same enclosure if they are not noted for inter-specific aggression.
- b) If a raptor is being dangerously stressed by the aggression/presence of other raptor(s) causing the stress

2.4 Enclosure fixtures and fittings

- a) The total number of perches and/or ledges shall outnumber the number of birds in an aviary. In addition a number of stumps may also be provided.
- b) Perch(es)/ledge(s) in the covered shelter shall be placed so that a raptor resting on one of these may avoid visual contact with raptors in adjoining enclosures. All perches should be placed so that birds in adjoining enclosures cannot perch within reach of each other through cage wire.

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- c) Perches/ledges should be placed so as to encourage the raptors to make maximum use of the flight possibilities within the enclosure. At least one perch should be no less than two (2) metres from the ground making sure to take into consideration the requirements of section 2.4 (j) and (k)
- d) Competition for the highest vantage point shall be avoided by providing a number of perches at that height.
- e) Enclosures containing raptors which are incapable of normal flight should include rough-barked branches which permit the birds to climb to perches from the substrate.
- f) All perches/ledges/tree stumps shall be placed so that birds can perch comfortably without their plumage coming into contact with walls or fixtures.
- g) Perches shall be constructed from uncontaminated natural branches and vary in diameter and cross-section so that at least some shall have circumferences not less than the talon span of the species to be housed.
- h) Each nocturnal hole-nesting owl shall be provided with at least a darkened corner to hide from the light and provide roost security. Provision of a suitable hollow log is recommended.
- i) Where enclosures contain male and female raptors, sight barriers shall be provided so that the sexes can isolate themselves visually where appropriate to the species.
- j) Perches must be no closer to the roof of the enclosure than that distance which is needed for the bird's wing to go through its natural arc during take-off and landing.
- k) Perches in breeding enclosures should be positioned so that there is sufficient overhead clearance for copulation.
- l) An aviary for the housing of raptors shall contain a bathing pond/container of a cleanable material with an appropriate diameter and depth to allow normal bathing behaviour.
- m) The pond/container shall have a non-slip, cleanable surface and no sharp edges.
- n) The pond/container shall be kept filled with clean fresh water or where the length of the legs of the shortest bird is less than 15cm to a depth equal to the length of that bird's legs.

2.5 Minimum space requirements

- a) An exhibit aviary for the housing of raptors shall be of the following minimum size standards:

Name	Width (m)	Length (m)	Height (m)
Order Accipitriformes			
Family: Pandionidae			
Osprey <i>Pandion haliaetus</i>	3.5	6	3
Family: Accipitridae			
Black-shouldered kite <i>Elanus notatus</i>	2.5	4.5	3
Letter-winged kite <i>Elanus scriptus</i>	5.4	5	3
Black kite <i>Milvus migrans</i>	2.5	6.3	
Square-tailed kite <i>Lophoictinia isura</i>	3	6	3
Black-breasted kite (Buzzard)			
<i>Hamirostra melanosternon</i>	3	6	3
Brahminy kite <i>Haliastur indus</i>	3	6	3
Whistling kite <i>Haliastur sphenurus</i>	3	6	3

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Collared sparrowhawk <i>Accipiter cirrhocephalus</i>	3	6	3
Brown goshawk <i>Accipiter novaehollandiae</i>	3	7	3
Grey goshawk <i>Accipiter novaehollandiae</i>	3	7	3
Red goshawk <i>Erythrotriorchis radiatus</i>	3	7	3
Little eagle <i>Hieraaetus morphnoides</i>	3	6	3
Wedge-tailed eagle <i>Aquila audax</i>	4	8	3.5
White-breasted sea eagle <i>Haliaeetus leucogaster</i>	4	8	3.5
Spotted harrier <i>Circus assimilis</i>	3	6	3
Swamp harrier <i>Circus aeruginosus</i>	3	6	3
Crested hawk (Pacific baza) <i>Aviceda subcristata</i>	2	4	2.5
Family: Falconidae			
Australian hobby <i>Falco longipennis</i>	2	5	5.3
Peregrine falcon <i>Falco peregrinus</i>	3	8	3
Black falcon <i>Falco subniger</i>	2.5	8	3
Grey falcon <i>Falco hypoleucos</i>	3	8	3
Brown falcon <i>Falco berigora</i>	3	8	3
Australian (Nankeen) kestrel <i>Falco cenchroides</i>	2	4	2.5
Family: Strigidae			
Rufous owl <i>Ninox rufa</i>	3	5	3
Powerful owl <i>Ninox strenua</i>	3	5	3
Boobook owl <i>Ninox novaeseelandiae</i>	2	4	2.5
Barking owl <i>Ninox connivens</i>	2	5	2.5
Family: Tytonidae			
Barn owl <i>Tyto alba</i>	2	4	2.5
Masked owl <i>Tyto novaehollandiae</i>	2.5	5	2.5
Grass owl <i>Tyto longimembris</i>	2	4	2
Sooty owl <i>Tyto tenebricosa</i>	2.5	5	2.5

- b) Off exhibit housing and free lofting enclosures for raptors must be at a ratio of at least 60% of each dimension (width, length, height) of exhibit minimum sizes, provided the following:
- the bird's wingspan is not restricted;
 - the width shall not be less than 1.5 metres;
 - the height shall not be less than 2 meters;
 - the minimum width for wedge-tailed eagles and white-breasted sea eagles shall be 2.6 meters;
 - the minimum height for wedge-tailed eagles and white-breasted sea eagles shall be 2.4 meters.

3. Records

- a) Each raptor shall be individually identified by an approved method of identification — a leg band or microchip.
- b) Normal diet (including supplement) and feeding routine should be recorded in the records.

4. Veterinary care

A veterinary monitoring program must take place and include monitoring for:

- overgrowth of beaks and talons (to avoid bumblefoot)
- the level of internal parasites
- incidence of avian tuberculosis

5. Transport

5.1 General

- a) A transport container for raptors shall not allow the entry of light except through ventilation holes. Ventilation holes shall be pierced around the lower half on all sides of the container, about 10cm above the internal floor height and about 7.5cm apart. Two holes shall be pierced on all four sides 10cm below the internal roof height.
- b) The dimensions of the transport container shall be at least 30cm longer and wider than the length of the bird from beak tip to tail tip and shall provide at least 15cm head clearance for the bird when standing at rest on the floor of the container or on any perch in the container.
- c) A perch consisting of a block of wood of sufficient size to allow the bird a firm grip may be firmly fixed to the floor of the container if desired.
- d) If the container includes no perch, the floor of the container shall be lined firmly with a resistant material which will provide grip for the birds' talons. (Non-looped artificial grass is recommended)
- e) Access to the container shall be from a hinged or sliding door/lid on the top side of the container. The door/lid shall be well secured during carriage of the bird. The transport container may be constructed of sturdy cardboard, polystyrene, or wood.
- f) In situations where the bird will not be accompanied by an experienced raptor handler at all times during its transport, the transport container shall be constructed of wooden sheets and framing sturdy enough to withstand damage in transport.
- g) No more than one raptor shall be enclosed in a compartment of a transport container unless all the birds in the container are young fledglings from the same nest.
- h) It is recommended that the attending veterinarian or an approved raptor rehabilitator be consulted on conditions of transportation before transporting injured or sick raptors for medical treatment or diagnosis.
- i) Raptors must not be subjected to temperatures greater than 30°C or less than 10°C during transport.

5.2 Journeys over 24 hours

For journeys greater than 24 hours, transport containers must include access to food. Birds should be fed once they have been in transit for 24 hours.

5.3 Journeys under 24 hours

For journeys less than 24 hours duration, the birds to be transported shall not be fed within four hours of departure. Provision shall be made for feeding on arrival at the destination point. Provisions 5.2 and 5.3 do not

apply to nestlings; feeding of these birds shall be under the direction of a suitably qualified raptor keeper or a veterinarian.

5.4 Release into new enclosure

Raptors that are to be released into a new enclosure (from the wild or from another enclosure/transport container) should be released at a suitable time, i.e. owls at dusk, diurnals early morning, so as to avoid heat/cold stress and allow time for orientation in a new surrounding. Release should be carried out away from public view (using screens) and separate from other birds when applicable (using partitions).

6. Security and public safety

- a) Raptors shall not be enclosed in walk-through aviaries. If the EPA is satisfied that visitors will not be attacked, exemption to this regulation may be granted.
- b) Any raptor taken from its enclosure for show or performance purposes shall have been trained to accept being tethered and shall at all times be under the control of an experienced handler. The raptor shall be belled and be fitted with jesses which have the owner's name and contact address on them.
- c) Members of the public are not permitted to handle raptors except when the birds are fully staffed and are under the strict supervision of an experienced handler.
- d) A safety fence shall be provided to keep visitors from coming into contact with enclosures containing white-breasted sea eagles or wedge-tailed eagles or species that are imprinted on people and known to attack.

7. Rehabilitation

Birds that are released to the wild following a long period in captivity or captive bred should be suitably rehabilitated under the guidelines set out by the Australasian Raptor Association Queensland Region and the EPA.

8. Provisions of other Acts

The above exhibit standards of ARAZPAQ are to be regarded as being the recommended minimum standards for wildlife parks to achieve and are not in derogation of the provisions of the *Nature Conservation Act 1992* and Regulations under the Act.

Where applicable, the Acts and Regulations of other statutory bodies must be complied with.

Part D — Wombats

Ratified by Queensland Parks and Wildlife Association (now known as Australasian Regional Association of Zoological Parks and Aquaria Queensland (ARAZPAQ)) on 4 November 1994.

Approved by the Minister for Environment and Heritage on 24 March 1995.

Reviewed by ARAZPAQ and the EPA May 2006.

Prepared by ARAZPAQ and the EPA.

General information

There are three species of wombat found in Australia. These are the common wombat *Vombatus ursinus*, the southern hairy-nosed wombat *Lasiorhinus latifrons* and the northern hairy-nosed wombat *Lasiorhinus krefftii*. Only the common wombat and southern hairy-nosed wombat are found in captivity. The northern hairy-nosed wombat is endangered with only around 70 individuals believed to remain in Epping Forest National Park in central Queensland.

Although similar in build, the hairy-nosed wombats and common wombats are very different in their social habits and preferred habitats. Common wombats have a preference for dry sclerophyll forest of temperate climate which is a fairly moist habitat. The hairy-nosed wombats are adapted to a drier climate and live in semi-arid tussock grassed plains or sparse woodlands. While common wombats are considered to be solitary animals having distinct home ranges, the hairy-nosed wombats are thought to be more communal animals sharing home ranges. They are among the world's largest burrowing animals.

Wombats are grazing animals and eat a wide range of grasses, sedges and rushes. They have the lowest dietary maintenance requirements for energy and protein of any herbivorous marsupial. Both the incisor and molar teeth are rootless and grow throughout the animal's life, an adaptation to the fibrous character of the natural diet.

Every effort should be made to obtain wombats from existing captive stocks. Apart from bona fide scientific research or educational purposes, permits to take wombats from the wild are normally not issued by the EPA.

The breeding of wombats in captivity by persons authorised to keep the species is to be encouraged.

The standards presented here are to be read in conjunction with the general conditions section of the Code of practice of the ARAZPAQ.

1. Husbandry

- a) Common wombats are naturally solitary and diligent observations is required when introducing more than one animal to an enclosure irrespective of enclosure size. If fighting occurs, individuals should be removed from an enclosure before any substantial wounds are inflicted.
- b) No enclosure should contain more than one mature male unless a free range area exists of sufficient size for each male to establish its own territory. It is unlikely that this can be achieved in an area of less than one hectare in size.
- c) Where wombats are housed with other species, diligent observation is required to ensure compatibility. Wombats have been known to be aggressive to other species.

2. Facilities

The following minimum guidelines will apply to structures used to house wombats for display:

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- a) Enclosures may be of open, semi-enclosed or totally enclosed design.
- b) Each cage or enclosure is to provide protection for the wombats against interference from other animals and the public.
- c) Any part of the exhibit where the public has access must be constructed in such a way to prevent the placing of body appendages into the enclosure.
- d) Each enclosure is to have a 1m-high escape-proof barrier or such other minimum standard as approved. Water filled moats should be avoided due to the high incidence of mortality, which has been associated with water barriers in the past.
- e) Being a nocturnal, burrowing animal, wombats prefer cooler temperatures and may become distressed in temperatures above 30°C. Therefore in open enclosures or hotter climates, there must be provision for shade at all times within the enclosure. This shaded area must have soil to a depth of at least 30cm to allow the animals to partially cover their bodies if so desired, to facilitate cooling.
- f) To prevent escape, the floor of the enclosure must be constructed of a material which prevents burrowing or must have a barrier which prevents the burrowing escape from the enclosure. These burrowing barriers may be covered with a suitable substrate of soil, leaf litter, mulch or sand.
- g) Each enclosure must contain at least one artificial burrow or hollow log for each individual animal within an enclosure. The variety of exhibit furniture such as mounding, logs and rocks will ensure natural behaviour is maintained.
- h) Minimum sizes to be followed for wombat enclosures should be:

- i) minimum surface area for up to two wombats:

Species	Current Minimum Floor area
Wombat	50 sq.m

- ii) Where possible, to prevent destruction of the day display, a night yard should be provided. This should be a minimum of half the size of the minimum surface area of the display enclosure specified above.

3. Diet and feeding

- a) Captive diets should be based on fresh-cut grass and/or palatable but low quality hay ad lib. This may be supplemented with lucerne cubes or chaff, or fruits and vegetables such as apple, sweet corn, carrots, sweet potato and potato. The latter foods however, are likely to be too high in energy and protein and too low in fibre to be used for long-term maintenance. All diets should contain fresh-cut grass as often as possible.
- b) Foods which may contain inappropriately high dietary levels of Vitamin D, calcium and phosphorus (e.g. dog kibble and rat cubes) should be avoided or only fed occasionally to reduce the possibility of captive animals developing tissue calcification (sometimes referred to as *calcinosis circumscripta*)
- c) Provision of branches allows bark chewing which may help prevent any overgrowth of the teeth.

4. Records

Each individual animal must be marked at all times with an approved method of identification. For wombats, this may be an implantable transponder, tattoo or other method recommended by the EPA.

5. Transport

- a) Wombats must be transported individually in solid framed cages measuring at least the length of the individual and with enough width to allow the animal to lie comfortably on it's side.
- b) The cage must have removable, leak proof trays fitted at the base.
- c) Wombats must not be subjected to temperatures greater than 25°C or less than 5°C during transport.

6. Quarantine

Wombats transferred between establishments must be subjected to a 30-day quarantine period at either the importing or exporting establishment unless an exemption from the quarantine period is advised and certified by a veterinarian following a thorough physical examination.

This certificate must establish that the wombat is not:

- i) in a weakened or emaciated condition,
- ii) is free from clinical signs of disease, and
- iii) is free from internal and external parasites including sarcoptic mites.

7. Provisions of other Acts

The above exhibit standards of ARAZPAQ are to be regarded as being the recommended minimum standards for wildlife parks to achieve and are not in derogation of the provisions of the *Nature Conservation Act 1992* and Regulations under the Act. Where applicable, the Acts and Regulations of other statutory bodies must be complied with.

Part E — Australian crocodiles

Ratified by Queensland Parks and Wildlife Association (now known as Australasian Regional Association of Zoological Parks and Aquaria Queensland (ARAZPAQ)) on 26 April 1996.

Approved by the Minister for Environment on 13 November 1996.

Reviewed by ARAZPAQ and the Environmental Protection Agency (EPA) May 2006.

Prepared by ARAZPAQ and the EPA.

General information

There are two species of Australian crocodiles, the estuarine crocodile *Crocodylus porosus* and the freshwater crocodile *C.johnstoni*. They are the last survivors of the ruling reptiles known as the Archosaurs.

Crocodiles as reptiles are poikilothermic — unable to maintain a constant body temperature by physiological means. They are often referred to as ‘cold-blooded’. By their behaviour of moving between warm and cool areas in their environment/enclosure, they try to maintain a preferred body temperature of approximately 30oC to 33oC. The natural range of crocodiles in Queensland is from the far north to the Mary River (Maryborough) in southeast Queensland. The extent to which crocodiles can live in cold areas is limited by body temperature regulation.

Crocodiles are opportunistic feeders and catch the majority of their prey at the water's edge. They are very powerful animals and are capable of very fast movement over short distances. Their diet consists of insects, molluscs, crustaceans, fish, birds, reptiles and mammals. They are most active at night but will feed during the day. During winter months, they eat very little or not at all and must bask for prolonged periods.

Crocodiles usually reproduce annually. *C.johnstoni* is a ‘hole nester’ while *C.porosus* is a ‘mound nester’. Nesting females can become aggressive. Breeding of crocodiles in captivity should occur only if progeny can be placed in a zoo or crocodile farm or introduced into the wild. However, mating and nesting should not be discouraged as this is an important part of their natural behaviour. If progeny cannot be placed, eggs should not be incubated.

Estuarine crocodiles are extremely territorial. Fights, particularly between adult males, can cause extreme stress, physical damage and sometimes death. Freshwater crocodiles are more gregarious and will co-exist in small populations.

Both species of Australian crocodile are protected under the *Nature Conservation Act 1992* and are therefore subject to the provisions of that Act.

These standards are designed to set minimum guidelines for wildlife exhibitors, displaying crocodiles under a wildlife exhibitor licence issued by the EPA. All parks should strive to ensure all animals are displayed in exhibits which replicate their natural environment and promote their natural history, behaviour and biology to ensure the viewing public gains the most educational and interesting experience possible.

Standards presented here are to be read in conjunction with the general conditions in the publication Code of practice of ARAZPAQ — minimum standards for exhibiting wildlife in Queensland, and are additional to those conditions.

A biological definition of size is as follows:

- | | |
|-----------|---|
| Adult | – any crocodylian of any species above 2m; |
| Sub-adult | – any crocodylian of any species from 1.2 to 2m; |
| Juvenile | – any crocodylian of any species from hatching to 1.2m. |

Note: In the following information, the general terms crocodile/s refers to two species of crocodylian covered in this document. Information about particular species will be stated as such — freshwater crocodile or estuarine crocodile.

In this document, where reference is made to adequate experience, knowledge or competency, this will be deemed adequate in the opinion of the chief executive of the EPA, on advice of the Executive Officer of ARAZPAQ.

In this document, reference is made to the Workplace Health and Safety Guidelines For Working With Crocodiles in Captivity 2005. This was produced by the Department of Employment and Industrial Relations under provisions of the *Workplace Health and Safety Act 1995* and is administered by that department.

1. Husbandry

1.1 Keeper qualifications

A suitably qualified wildlife keeper must be nominated to be in charge of displays, and must have a demonstrated knowledge of the Workplace Health and Safety Guidelines For Working With Crocodiles in Captivity 2005 (available at the Department of Employment and Industrial Relations website www.deir.qld.gov.au), and must have the following minimum experience and skills:

- a) To be in charge of hatchlings or juvenile crocodiles, a wildlife keeper must have:
 - i) at least 12 months' full-time work with a reptile display and a demonstrated knowledge of heating and/or basking requirements, and basic reptile husbandry;
 - ii) a knowledge of the relationship between air and water temperatures and crocodile digestion; and
 - iii) experience and competency in safe handling methods, minimising danger to attendants and stress to animals.
- b) To be in charge of sub-adult crocodiles, a wildlife keeper must have:
 - i) at least six months' full-time work with a crocodile display;
 - ii) experience and competency in heating and/or basking requirements and basic reptile husbandry;
 - iii) a knowledge of the relationship between air and water temperatures and crocodile digestion;
 - iv) experience and competency in the capture and transportation procedures for crocodiles, and a demonstrated knowledge of the safety zones specified in the Workplace Health and Safety Guidelines For Working With Crocodiles in Captivity 2005.
- c) To be in charge of adult crocodiles, a wildlife keeper must have:
 - i) at least 12 months' full-time work with a crocodile display;
 - ii) experience and competency in the heating and/or basking requirements, basic reptile husbandry and territoriality and aggression in adult crocodiles;
 - iii) a knowledge of the relationship between air and water temperatures and crocodile digestion;
 - iv) a demonstrated ability to identify obese, emaciated or stressed specimens; and

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- v) experience and competency in the capture and transportation procedures for crocodiles, and a demonstrated knowledge of the safety zones specified in the Workplace Health and Safety Guidelines For Working With Crocodiles in Captivity 2005.

1.2 Thermoregulation

- a) Crocodiles are thermophilic and their immediate environment must provide opportunities for thermoregulation within their preferred optimum temperature zone (POTZ) approximately 25°C–32°C
- b) Juvenile crocodiles are particularly susceptible to changes in environmental temperature and should be kept within their POTZ, approximately 28°C–32°C.
- c) A temperature gradient is required on land and water to allow crocodiles to maintain their preferred body temperature.
- d) On the land, there must be shade in the summer and sun in the winter. In colder climates or colder months, additional artificial heat may be required in the form of hot rocks, heating pads or heat lamps.
- e) Water temperatures should be maintained within the POTZ. This will vary depending on the season, daily climatic conditions, geographic location and size of crocodile being housed. (Smaller animals conserve body heat less efficiently than larger animals).
- f) Where crocodiles are kept within their normal geographical distribution without artificial heating, enclosures should be positioned to allow at least 4–6 hours of direct sun during winter on land areas.
- g) Where crocodiles are kept outside their normal geographical range and/or natural temperature range, artificial heating must be provided.

1.3 Stocking requirements

- a) All crocodile species are territorial, with varying intensity depending on the age, species and size of the crocodile. Territorial behaviour will be influenced by the size, design and environment of the enclosure. In general, stocking rates in any given pen should be at a level where simultaneously and without conflict:
 - i) all crocodiles have access to water areas;
 - ii) all crocodiles have access to land areas;
 - iii) all crocodiles have access to a heat source; and
 - iv) there is minimal detrimental effect on the well-being of the crocodiles resulting from territoriality or overcrowding.
- b) The recommended sex ratio for adult *C.johnstoni* is one male to every three females. The ratio can be varied depending on enclosure size and stocking density. Individuals should have the ability to escape from dominant crocodiles by the appropriate use of complex habitat, visual and/or physical barriers.
- c) The number and ratio of adult *C.porosus* housed in an enclosure depends on the size of the enclosure and the aggressiveness of the individual animals within the enclosure. The enclosure must be designed to reduce aggressive interaction between adult males and other males, as well as

adult females and other females by the appropriate use of complex habitat, visual and/or physical barriers.

- d) Only one species of crocodile should be housed in each enclosure.

2. Facilities

2.1 Ponds

- a) Crocodile ponds can be built using earth, concrete, fibreglass or other suitable material which is non-damaging to crocodile health.
- b) All ponds must be built of smooth non-abrasive materials to prevent injury to the feet of animals.
- c) Ponds must be designed such that escape is not possible via excavation (such as digging or tunneling)
- d) Design of ponds must allow the animals easy access to and from water.
- e) The length of crocodile ponds must be at least twice as long as the longest crocodile's snout-vent length.
- f) The width of crocodile ponds must be sufficient to permit the crocodiles to turn around in the water area.
- g) When totally submerged, the largest crocodile must be covered by at least 15cm of water.
- h) All specimens in the enclosure must be able to submerge simultaneously without touching each other.
- i) Ponds should have a supply of water piped directly into the pond. The delivery pipe should be visible above the high water level of the pond or contain a non-return valve.
- j) Each pond should have a flow and discharge control.
- k) Enclosures should be serviced by a tap and hose, or other suitable mechanism for cleaning purposes.
- l) Water flow to and from the pond should be controlled by a valve/tap situated outside the enclosure, or at least 4m from the pond edge.
- m) Ponds must have overflow provisions to prevent enclosure flooding from heavy rain or pond overflow. Overflow points should be designed to prevent blockage by debris.

2.2 Water quality

- a) Crocodile pond water should be aesthetically pleasing and must be maintained to a quality which promotes animal health and welfare.
- b) Crocodile pond water can be turbid unavoidably in earth ponds.
- c) As required, all crocodile ponds should be significantly flushed or dropped and refilled to maintain good animal health. All pond water should be free from:
 - i) floating debris, oil and any other objectionable matter;
 - ii) substances that produce undesirable colour, odour or foaming; and
 - iii) undesirable aquatic life such as algal blooms.

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- d) Animals kept in saline conditions must have access to fresh water for drinking.
- e) Excess food must be removed from the water before fouling occurs.
- f) Other than for normal husbandry practices, crocodiles must have access to water at all times unless instructed otherwise by a veterinarian or a suitably qualified wildlife keeper as described in section 1.1.
- g) Where waste water from a crocodile pond discharges from the property, the wildlife park must comply with the requirements of the Environmental Protection Act 1994.
- h) As a guide, crocodile pond water should have the following parameters:
 - i) Ammonia — This exists in two forms in water, ionised and un-ionised. The unionized form is toxic to fish but not necessarily to crocodiles. However, ammonia is a product of urinary waste and for health and aesthetic reasons, ammonia levels should not exceed 4.0mg/L.
 - ii) pH — This is a measure of the acidity or alkalinity of water. The pH in saltwater crocodile ponds should be maintained between 7.2 and 8.3, and in freshwater ponds between 6.5 and 7.4.
 - iii) Dissolved oxygen (DO)— This is the amount of oxygen that can be dissolved into water or ‘oxygenation’, and primarily occurs at the air-water interface. DO levels depend on salinity and temperature. Non-saline waters have a higher DO level than saline water and cooler waters have a higher DO level than warmer waters. Crocodile pond water should be maintained between 4.0–8.0ppm
 - iv) Faecal coliform bacteria — Harmful faecal coliform bacteria must be kept at a minimum in pond water to prevent disease. Faecal coliforms in crocodile ponds should not exceed 1000 organisms/100mL.
 - v) Water quality testing — Water quality testing should be carried out regularly (such as weekly in a closed water system, monthly in a system which is flushed regularly) to detect trends in a pond which might become a health risk to the inhabitants. Initial testing should also cover heavy metals. Water quality test results should be recorded and made available to the Environmental Protection Agency if requested

2.3 Land

- a) Land in a crocodile enclosure must be large enough to allow the largest animal in the enclosure to lie to its full length and width uninhibited.
- b) All specimens in the enclosure must be able to bask or rest on the land simultaneously without touching each other.
- c) The land must not be solely concrete.

2.4 Fencing

- a) Each new crocodile facility must be inspected by the relevant authority before the display is open to the public.
- b) To prevent escape by climbing, wire mesh fences of juvenile alligator and freshwater crocodile enclosures must have a gusset at the top of each corner.

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- c) Enclosure fence lines must be solidly built, not easily lifted and must follow the contour of the land. They should be secured in the ground to a depth of 60cm, or attached to a concrete wall 10cm wide and 30cm below ground level.
- d) All fences must be built from robust materials — concrete block, timber, wire or other suitable material — to securely contain the animals.
- e) Wire fences enclosing crocodiles less than 2.4m must be no less than 2mm gauge wire. Wire fences enclosing crocodiles greater than 2.4m must be at least 2.5mm gauge wire.
- f) Minimum fence heights are:
 - i) Crocodiles (less than 1.2m)— 1m high with a 300mm internal return or overhang, or 1.2m non-climbable internal wall.
 - ii) Crocodiles (more than 1.2m)— 1.5m high.
- g) All crocodile enclosures must be built so that no part of the body of any visitor can be put within reach of any crocodile.
- h) An inward return or barrier is not required where the viewing public are on a fenced walkway which is higher than half the total length of the longest crocodile above ground or water level.
- i) All glass incorporated into an enclosure must be certified by an engineer to withstand water pressure and impact pressure from any crocodiles to be housed in the enclosure.
- j) Crocodile enclosures can be indoor and/or outdoor. Indoor enclosures must have adequate UV lighting. All animals must be able to share such lighting at the same time. In the case of fluorescent blacklights, access to within 35cm–40cm of lights is necessary, particularly for hatchlings and juveniles.
- k) Keeper access points into any crocodile enclosure containing adult and sub-adult crocodiles should be a minimum of 2m from any pond edge, and should be placed in such a way as to eliminate the risk of surprise attack. Where possible, exhibit access points should be located at the shallow end of the pond.

3. Diet and feeding

3.1 General

- a) The diet of crocodiles should be nutritionally adequate to maintain health and vitality.
- b) Wherever possible, the diet should be regularly varied.
- c) Fresh food is to be provided in the form of whole food items. Fur, feathers, bone and entrails are essential for healthy crocodiles and should be included in the diet as often as possible. Rancid food items should never be offered.
- d) Uneaten food items must be removed from the enclosure after feeding, when it is safe to do so.
- e) Live food items must never be offered, except in the case of small live crustaceans, fish or insects being offered to hatchling crocodiles to stimulate feeding behaviour.
- f) All diets should be as lean as possible. As a general rule, fat should not exceed 9 percent. Suitable diet items could be chickens (whole or parts), kangaroo steaks, fish, feral pig, beef or horse.

- g) Many diets need to be supplemented with vitamins and minerals. It is especially important to add calcium and phosphorus to diets of boneless meat.
- h) In enclosures where more than one animal is kept, a sufficient number of 'feed areas' should be set up so that all animals are able to partake.

3.2 Feeding hatchlings and juveniles

- a) Hatchling and juvenile crocodiles should be offered food at least five days a week. As the animals grow, the frequency of feeding can decrease.
- b) The diet for hatchlings should be a lean diced meat such as lean kangaroo or chicken with calcium diphosphate and a mineral/vitamin supplement added. Appropriate live insects, fish or crustacea can also be given to stimulate feeding behaviour.

3.3 Feeding adults

- a) Adult crocodiles should be fed according to the needs of the animal and the season.
- b) When feeding adult crocodiles daily, for example show animals, one large feed should be given each week with smaller feeds in between. The amount of food fed at each feed will depend on the individual animal's demeanor and general body condition.
- c) Food should be offered only if the specimens show interest and are active.

4. Breeding crocodiles

4.1 Collection of eggs

- a) All eggs must be collected from the nest to prevent escape into the wild of any naturally incubated hatchling
- b) Wildlife parks which hold breeding crocodiles and are not licensed as commercial crocodile farms should not encourage egg production surplus to their needs, unless prior arrangements have been made with a licensed crocodile farm for the disposal of the fertile eggs. (Note: The prior approval of the chief executive of the EPA is required to dispose of eggs and other wildlife to a farm.)
- c) Crocodile eggs to be incubated should be carefully removed from the nest, preserving their orientation in the horizontal plane.
- d) Where possible, eggs should be collected and moved as soon as possible after laying, ideally within the first 24 hours.
- e) Regardless of embryo age, the eggs must not be overheated or dehydrated during collection and transport.
- f) Wildlife parks which breed crocodiles continually should have a separate enclosure for rearing.
- g) Where crocodiles are nesting close to a fence or areas of public visiting, visual barriers might be required to reduce stress to the animals during the period of the females' protective behavior.

4.2 Incubation

- a) Crocodile eggs should be incubated at temperatures between 30oC–33oC.
- b) Crocodile eggs need to be incubated under conditions of high humidity (99%+),but should never be incubated in direct contact with water.

- c) Availability of air to the eggs should not be restricted. Regular gas exchange in the incubator is a necessity.

4.3 Hatchling care

- a) To optimize metabolic rate, hatchling should be held at temperatures between 30oC–34oC.
- b) Obvious stress factors, such as fluctuating temperatures, dehydration, noise, movement and handling, should be avoided. Simple, low, wooden structures, pieces of floating matting, or other forms of shelter should be provided for security.

5. Transport

The restraint of crocodiles for transport can be achieved using a variety of methods, some of which are listed below. Which ever method is chosen, the principles stated in section 5.1 must be followed.

All staff involved in crocodile capture and transport must be fully aware of the Workplace Health and Safety procedures for crocodile capture, specified in its Guidelines For Working With Crocodiles in Captivity 2005.

5.1 General

- a) Crocodiles are adept at escape and great care must be taken during transport to prevent escape and injury to the animal and/or attendants.
- b) Persons who are boxing, restraining and preparing animals for transport must have an understanding of blindfolding, drug administration and regurgitation before any transportation.
- c) Stress levels and thermoregulation must be considered. Crocodiles in transport must not be subjected to temperatures below 15oC or higher than 35oC. The optimum transport temperature is 20oC–25oC.
- d) Crocodiles should not be transported with food in their stomachs. A fasting/starvation period of approximately three days should be imposed before an animal is transported to allow the crocodile's stomach to empty. Where an emergency situation arises and this is not possible, a block should be placed in the animal's mouth if the animal's jaws are to be tied.
- e) During transport, crocodiles should have their eyes covered or be contained in such a way as to restrict vision.
- f) A written description of the restraints in place on each crocodile which is transported must be placed in a prominent position on the outside of the box and marked **IMPORTANT**.
- g) Removal of the crocodile must be by a suitably qualified wildlife keeper as specified in section 1.1.
- h) Road transport longer than six hours or along bumpy roads is not recommended. If this has to occur, then the animal must be accompanied by a suitably qualified wildlife keeper as specified in section 1.1.
- i) Containers used to transport crocodiles must be labelled with instructions clearly stating **KEEP OUT OF DIRECT SUNLIGHT, THIS WAY UP, LIVE ANIMAL, HEAD END** and similar advices.

5.2 Transport methods

- a) Cotton or calico bags:

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- i) Not suitable for large crocodiles.
 - ii) Small crocodiles can be placed in these bags with their mouths unrestrained, and the bag can then be padded and placed in a solid transport container with adequate ventilation.
 - iii) All bags must have the bag seams outside to prevent the possibility of animals becoming entangled in cotton threads.
- b) Other methods:
- i) Other containers for transporting crocodiles should be of a solid nature and such that the animal cannot see out. No wire or other abrasive material should be used. Any containers used must have adequate ventilation.
 - ii) Dimensions of containers should be such that the specimen is restricted in its movement and cannot turn around.
 - iii) Access must be available from both ends of a container.
 - iv) Containers must not be opened while in transit, except in an emergency by a suitably qualified wildlife keeper as specified in section 1.1.
 - v) Maximum time in containers must not exceed 48 hours unless a suitably qualified wildlife keeper, as specified in section 1.1, accompanies the transport.
 - vi) Crocodiles longer than 1.2m must be transported in individual containers or compartments.
 - vii) If a crocodile's jaws are to be tied during transport, then a block should be placed between the jaws, and the eyes covered at all times with a damp towel. Materials used to tie the jaws must not damage the animal's skin.
 - viii) When rope restraints are used to immobilise a crocodile, care must be taken to ensure that there is padding between the rope and the animal's body and that injury does not occur from ropes tied too tightly.
 - ix) When using a board, the snout of the crocodile must not protrude beyond the front of the board and padding must be in place between the animal's cloaca and the board.
- c) Immobilisation using drugs:
- i) Drugs should be used only when necessary such as transporting large crocodiles by air or when, in the opinion of a suitably qualified wildlife keeper as specified in section 1.1, the size and/or temperament of the animal is a threat to the safety of keepers
 - ii) Animals under the influence of drugs:
 - can have their thermoregulation compromised;
 - should not be released in the presence of other crocodiles that might be a physical threat; and
 - can drown. Shallow water should be provided to allow the animal time to metabolise the drugs from its system.
 - iii) Chemical sedation must be administered only under the direction of a registered veterinarian.

6. Demonstrations and handling

Wildlife parks play a valuable role in educating their visitors about crocodiles and their habitat, especially the dangers associated with living in or visiting areas where crocodiles occur.

- a) During a demonstration for the public, a crocodile's natural behavior such as feeding behavior, thermoregulation, locomotion, mating and nesting should be emphasized at all times.
- b) Hand-feeding of crocodiles of any size for educational shows should be undertaken only by an accredited wildlife keeper as specified in the Workplace Health and Safety Guidelines For Working With Crocodiles in Captivity 2005.
- c) Over-dramatisation and sensationalism of crocodile behaviour has a negative impact on community perceptions of crocodiles and is not to be undertaken.
- d) Basic ecological and biological information is necessary to present an accurate picture of a crocodile's life history and how it interacts with its environment.
- e) Information about the risks associated with living in or visiting a crocodile habitat is essential to help visitors behave safely.
- f) Park visitors should not be presented with examples of inappropriate behaviour that might be copied by some people. Explain that the presenter is an experienced handler and that it would be unsafe for a member of the public to copy the actions of the presenter.
- g) Only crocodiles under 1.2m in total length should be used in mobile displays. The crocodile must at all times be under the supervision of an experienced crocodile keeper and, when not being used in a demonstration, must be returned to its display or transport box. Sufficient individuals should be maintained to accommodate rotation when necessary for animal health.
- h) At no time can a park visitor be granted access to a crocodile enclosure, or be permitted to feed a crocodile over a fence.
- i) Entry to crocodile exhibits by authorised people other than keepers is permitted, provided the following conditions are observed:
 - i) In the opinion of the employer, the risk of crocodile attack has been minimised;
 - ii) The person is accompanied at all times by a guard;
 - iii) The person has been instructed in relevant safety issues and has indicated that the or she understands the instructions and agrees to conform to all safety directions given by the employer or company representative while in the enclosure; and
 - iv) Entry follows all procedures stated in the Workplace Health and Safety Guidelines For Working With Crocodiles in Captivity 2005.

7. Health and safety

Refer to the Workplace Health and Safety Guidelines For Working With Crocodiles in Captivity 2005.

8. Provisions of other Acts

The above exhibit standards of the ARAZPAQ are to be taken as the recommended minimum standards for wildlife parks to achieve, and are not in derogation of the provisions of other relevant Acts and Regulations including the Nature Conservation Act and Workplace Health and Safety Act.

Part F - Ratites

Ratified by Queensland Parks and Wildlife Association (now known as Australasian Regional Association of Zoological Parks and Aquaria Queensland (ARAZPAQ)) on 15 May 1997.

Approved by the Minister for Environment on 5 October 1997.

Reviewed by ARAZPAQ and the Environmental Protection Agency May 2006.

Prepared by ARAZPAQ and the EPA.

General information

Ratites form a group of flightless birds which include the cassowaries *Casuarius* spp., emu *Dromaius novaehollandiae*, ostrich *Struthio camelus*, rhea *Rhea* spp. and *Pterocnemis* spp. and the kiwi *Apteryx* spp. The name ratite comes from the large cartilaginous plate-like keel or breast bone which is thought to resemble the shape of a raft. The lack of a deep muscle for keel attachment and the poorly developed wings compared to body size, prevent the ratites from flying.

The southern cassowary and the emu are the two species of Australian ratite. Emus can be found in all habitats on the Australian mainland except rainforest, the only habitat where cassowaries can be found. Emus tend to be gregarious and partly nomadic while the southern cassowary is a solitary animal and is territorial over an extensive home range. Both species of Australian ratite reach 1.6-2.0 metres in height and weigh 45-60kg. Cassowaries are also found in New Guinea and adjacent islands.

The ostrich, the largest of all living birds, may stand up to 2.4 metres tall and weigh more than 160kg. They can be found over most of Africa on open and arid plains. They are gregarious and often form small groups of a single male with several females. The ostrich is unusual in that it has only two toes on each foot.

Rheas are only found in South America. They are gregarious within a loosely cohesive social structure. Rheas may reach a height of 1.5 metres and weigh up to 38kg. Both rheas and ostriches have well developed wings which they use for courtship and aggressive displays.

Ratites compensate for their lack of flight by having large and powerful legs. Ratites can become aggressive during the breeding season and, as such, require large amounts of space to reduce intra-species and human directed aggression.

Male ratites have a large penile organ that places semen into the female's cloaca in a manner similar to other birds. In emus, cassowaries and rheas, the male incubates the eggs and cares solely for the young, while ostriches share this responsibility. Female ratites are generally larger than the males.

Both species of Australian ratite are protected under the *Nature Conservation Act 1992* and are therefore subject to the provisions of that Act. The ostrich and rhea, although not protected under that legislation, still require a wildlife movement permit under the Act to enter Queensland.

Standards presented here are to be read in conjunction with the document Code of practice of the ARAZPAQ - Minimum standards for exhibiting wildlife in Queensland and are intended to be additional to that document.

Note: Due to the unique behaviour, captive housing and husbandry requirements of the four species of kiwi, they will not be addressed in this document. Any institution wishing to display kiwis should contact Auckland Zoo to obtain a copy of their kiwi husbandry manual.

These standards are designed to set minimum guidelines for wildlife exhibitors displaying ratites under a wildlife exhibitor licence granted by the EPA. All parks should strive to ensure animals are displayed in exhibits which replicate their natural environment and promote their natural history, behaviour and biology, to ensure that the viewing public gains the most educational and recreational experience possible.

1. Husbandry

1.1 Supervisor qualifications

- a) A suitably qualified supervisor must be nominated to be in charge of displays, and must have the following minimum experience and skills:
 - i) At least 12 months' full-time work with a bird display or section, or six months' full-time work as a keeper working with ratites.
 - ii) Experience and competency in safe handling methods, minimising danger to attendants and stress to animals.
 - iii) Experience with and knowledge of the social requirements of the species he/she is in charge of and the ability to identify abnormal behaviour or behaviour indicating a sick or stressed individual.
 - iv) A working knowledge of the dietary requirements of the ratites he/she is responsible for.
 - v) A clear working knowledge of this code of practice and all other documents referred to within this code of practice.

1.2 Keeper qualifications

A wildlife keeper working with ratites should have a clear working knowledge of this code of practice and all other documents referred to within this code of practice. He/she must also be fully aware of the potential danger that all ratites pose to keeper and/or visitor safety and must have an intimate working knowledge of the institution's safety procedures.

1.3 Stocking requirements and sex ratios

- a) All ratite species are territorial, with varying intensity depending on the age, species and size of the animal. Territorial behaviour will be influenced by the size, design and environment of the enclosure.
- b) The following stocking rates are recommended for each species:
 - i) Cassowaries: Single animals or a maximum of one pair per enclosure.
 - ii) Emus: Single animals, pairs, trios (one male to two females) or communal groups with equal numbers of both sexes in large enclosures.
 - iii) Ostriches: Single animals, one breeding pair or a communal group of one mature male to several females per enclosure.
 - iv) Rheas: Single animals, pairs, trios (one male to two females) or communal groups with equal numbers of both sexes in large enclosures.
- c) Large groups of juveniles can be housed together until the birds reach sexual maturity. This age varies for each species and is described in section 6 of this document.

- d) All ratite species can be housed with other compatible species of animal but must be closely observed for inter-species aggression.

1.4 Hygiene

- a) Ratites tend to be messy feeders and are capable of passing large quantities of faeces in a short period of time. Enclosure substrates must be of a material that is easily cleaned and all faeces must be removed daily to prevent fouling of the enclosures.
- b) Feeding stations must be kept clean of faeces at all times to prevent contamination of dropped food.
- c) Drinking water must be always clean and free of faecal contamination. Fresh drinking water must always be provided separately from ponds used for bathing.

2. Facilities

2.1 Enclosure ponds and water quality

- a) All ratites, particularly cassowaries and emus, like to swim or wallow in water so all ratite enclosures should be equipped with a pond.
- b) Ponds for ratites can be constructed from a suitable material which is non-damaging to the bird's health and provides a non-slip surface with adequate grip for the bird's feet.
- c) Design of ponds must allow the animals easy access to and from the water. These access points must have secure footings to prevent the birds from slipping.
- d) Enclosures should be serviced by a tap and hose, or other suitable mechanism for cleaning purposes.
- e) The recommended depth of water in a ratite pond should be between 200mm and 1 metre.
- f) Pond water should be aesthetically pleasing and must be maintained to a quality which promotes animal health and welfare.
- g) As required, all ponds should be significantly flushed or dropped and refilled to maintain good animal health. All pond water should be free from:
 - i) floating debris, oil and any other objectionable matter,
 - ii) substances that produce undesirable colour, odour or foaming, and
 - iii) undesirable aquatic life such as algal blooms.

2.2 Enclosure design and furnishings

- a) Due to the potential danger that ratites can pose to keeper safety, all enclosures must be designed so that the animals can be isolated while the enclosure is being serviced or cleaned.
- b) Enclosures should be designed and fitted to reflect the specific habitats of the different species of ratite, for example cassowaries require a lot of cover while ostriches require a large amount of uninterrupted space for running.
- c) Recommended furnishings for enclosures are:
 - i) Cassowaries: A shady heavily planted enclosure with at least one large tree trunk, rock pile or soil mound to provide security for nesting.

- ii) Emus and rheas: An open planted enclosure with large amounts of grasses and low shrubs and open areas for running.
- iii) Ostriches: Sparsely planted enclosure with low shrubs or grasses. Large open areas for running.
- d) Enclosures must be designed to reduce aggressive interactions between individuals by the appropriate use of complex habitat, visual and/or physical barriers.
- e) Floors and substrates of enclosures for ratites of all ages must be designed, constructed and maintained so that they are non-slip, provide support and minimize the risk of injury and disease.
- f) Shelter must be provided in enclosures to protect the animals from climatic extremes and to provide adequate shade and protection from the elements.
- g) Enclosure fittings and fixtures must be of such style and position as to prevent the likelihood of injury.
- h) No ratite other than quiet emus are to be housed in a public walk through exhibit. Emus that show any form of aggression must be removed from an exhibit that has public access.

2.3 Enclosure sizes

- a) Hatching ratites (0-90 days) being artificially raised, have no minimum cage size. However, to promote leg muscle development, daily exercise should be given to animals from at least 7 days of age.
- b) Juvenile ratites (3-6 months) can be housed in groups or individually with a minimum floor space of 20 square metres per animal.
- c) Sub-adult ratites (6-18 months) can be housed in groups or individually in enclosures with a minimum floor space of 60 square metres per animal.
- d) The minimum enclosure sizes for adult ratites are:
 - i) Cassowaries: 200 square metres for an individual animal with 100 square metres added for each additional animal.
 - ii) Emus: 200 square metres for an individual animal with 100 square metres added for each additional animal.
 - iii) Ostriches: 1000 square metres for an individual animal with 500 square metres added for each additional animal.
 - iv) Rheas: As for emus.
- e) Where ratites are housed with other compatible species, the above minimum enclosure sizes are cumulative to the minimum enclosure sizes required for the other species.

2.4 Fencing

- a) All fences must be constructed from robust materials and must be free of obstacles that may snag birds' legs or necks.
- b) Changes in the angles of ratite fences must be clearly marked so that they are visible to the birds within the enclosure.

- c) To minimise injury to animals, wherever possible, fence support posts, stays and straining wires should be positioned on the outside of the enclosure.
- d) Where a park perimeter fence forms part of the boundary of a ratite display, provisions must be made to protect the birds from outside disturbances by the use of visual or other suitable barriers.
- e) The barriers used in all capture yards must have smooth, solid sides with no footholds or projections out from the fence and should be such that the birds cannot see outside the yard.
- f) Juveniles should be housed in enclosures with solid fences or fences with a small wire size to prevent injury.
- g) The maximum recommended mesh size for all species of adult ratite is 50mm x 50mm.
- h) The minimum internal fence heights for adult ratites are:
 - i) cassowaries - 1.8 metres
 - ii) emus - 1.5 metres
 - iii) ostriches - 2.0 metres
 - iv) rheas - 1.5 metres.

3. Diet and feeding

3.1 General

- a) The diet of ratites must be nutritionally adequate to maintain good health and vitality and, wherever possible, should be regularly varied to stimulate appetite.
- b) Containers, dishes or trays used to feed ratites should be of soft material to prevent beak injury.
- c) Several feed stations should be provided in enclosures with a large number of birds.
- d) All diets, particularly those for juveniles and egg-laying hens, should be supplemented with calcium carbonate and multivitamins. Diets should aim for a calcium to phosphorus ratio of 2:1.
- e) As a general rule, juveniles and sub-adults should be fed diets that are low in protein to prevent excessive weight gain with the associated leg disorders.
- f) Diets with a high fibre content can cause proventricular impactions in young ratites and should be avoided.
- g) Granite grit should be offered to ratites which require grinding in the gizzard. Limestone or shell grit should be avoided as it is generally too soft and may adversely influence the calcium/phosphorus ratio.
- h) Exercise from an early age is important in the overall health of ratites and plays an important role in preventing leg problems, compactions and other health problems.

3.2 Cassowary diet

- a) Cassowaries are mainly frugivorous. Captive diets should reflect this with fruit and cooked vegetables comprising at least 95 percent of the diet.
- b) Suitable fruits and vegetables for cassowaries includes apples, banana, papaw, pear, figs, melons, tomato, carrot, sweet potato and any other soft fruit or vegetable.

- c) The protein component of the diet can be in the form of mice, rats, insects, fish, lean meat and mince.

3.3 Emu diet

- a) Emus are omnivores feeding on almost any organic item they encounter.
- b) A suitable diet for emus includes a mix of commercial chicken pellets, lucerne hay, chopped vegetables and greens (lettuce) and grains.
- c) Emus can be maintained solely on commercial ratite pellets. These pellets should have a protein content of 16-22 percent and a fibre content of 5-10 percent.
- d) Rodents, day old chicks and insects are not essential for the well-being of emus but can be fed occasionally as a treat.

3.4 Ostrich and rhea diet

- a) Ostriches and rheas are primarily foragers and grazers of grasses. They will consume succulent plants, fruits and any insects or small vertebrates that they encounter.
- b) A suitable diet for ostriches and rheas includes commercial ratite pellets, chopped greens, vegetables, wheat and other grains.
- c) Ostriches and rheas can be maintained solely on commercial ratite pellets. These pellets should have a protein content of 16-22 percent and a fibre content of 5-10 percent.
- d) Rodents, day-old chicks and insects are not essential for the well-being of these birds but can be fed occasionally as a treat.

4. Capture and restraint

- a) Manual restraint of ratites is potentially dangerous to both the handler and the bird. All species of ratite can kick forward and to the side when frightened, and will jump flailing their legs.
- b) Personnel involved in the manual restraint of ratites must have clear instructions as to the procedures to be followed during capture and escape routes if required.
- c) The manual restraint of ratites must only occur under the direct supervision of a suitably qualified person as described in section 1.1.
- d) Manual restraint of ratites usually involves jumping the bird from behind and applying enough downward pressure to make the bird sit down with its legs folded directly underneath it. Boards or padded shields can be used to manoeuvre the bird into a suitable position for capture.
- e) Birds should never be allowed to jump up or fall to one side while being held.
- f) Where necessary, hoods should be used to cover the bird's head during restraint.
- g) Chemical immobilisation and sedation must only be administered under the direction of a registered veterinarian.
- h) As much as possible, young ratites should be conditioned to being handled by keepers. This may make capture and restraint easier when the birds become larger.

5. Transport

- a) All journeys for ratites should be as short as possible to limit stress.
- b) Road transport longer than four hours or along bumpy roads is not recommended. If this has to occur, then the animal must be accompanied by a suitably qualified wildlife keeper as described in section 1.2.
- c) All ratites must be protected from chilling and extremes of temperature during transport.
- d) Boxes being used for transport must be of solid construction, dark, well ventilated and have a padded roof.
- e) Boxes used for transporting adult and sub-adult ratites must have sliding doors at both ends of the box.
- f) Boxes or containers should have external framing and should be free of any protrusions which could cause injury during transport.
- g) Boxes should be just higher than the height of the bird and wide enough to allow the bird to sit comfortably during the journey.
- h) Trailers or vehicles used for transporting ratites should be dimly lit and should provide sufficient ventilation for the comfort of the birds.
- i) Trailers or vehicles used for transporting ratites must be designed to prevent the entry of exhaust fumes.
- j) The floor surface of boxes, containers and/or trailers used for transport must provide a soft, absorbent, non-slip surface with adequate grip for the bird's feet.
- k) Young ratites up to 12 weeks of age can be transported in small uncrowded groups in boxes, containers or trailers. Overcrowding must be avoided.
- l) Ratites older than 12 weeks of age must be transported in individual boxes. An exception to this is where a small, uncrowded group of emus or rheas is transported in the back of a suitable vehicle or trailer.
- m) As much as possible, mature ratites should not be transported during the breeding season as birds may be more aggressive and prone to higher levels of stress at this time.
- n) Boxes or containers used for transport must be labelled with instructions clearly stating Keep out of Direct Sunlight, This Way Up, Live Animal etc.

6. Breeding ratites

6.1 General

- a) Separation facilities must be available during the breeding season to isolate individual birds or sexes if aggression occurs.
- b) Fauna parks which hold breeding ratites and are not licensed as commercial farms should not encourage egg production surplus to their needs, unless prior arrangements have been made with a licensed farm for the disposal of the fertile eggs. (Note that the prior approval of the chief executive of the EPA is required to dispose of eggs and other wildlife to a farm.)

6.2 Cassowaries

- a) The breeding season for cassowaries is traditionally June to December.
- b) Sexual maturity is reached around three years of age.
- c) The male usually starts incubation after the fourth egg is laid. The standard clutch size is four eggs with a maximum of eight. There is usually a 4-5 day period between eggs being laid. Incubation periods are 49-57 days.

6.3 Emus

- a) The breeding season for emus is from May to September.
- b) Sexual maturity is reached from 18 months to three years of age.
- c) Eggs are laid every 3-4 days with an average clutch size of 7-10 eggs. It is possible for a female to lay 30 eggs in a season. The male alone incubates. Incubation periods for emus are 46-56 days.

6.4 Ostriches

- a) The breeding season for ostriches is from September to April.
- b) Female ostriches reach sexual maturity at two years of age. Males can take 4-5 years.
- c) Eggs are laid every other day with 12-15 eggs being a typical clutch. The incubation period is 40-42 days. Both sexes incubate the eggs with the male sitting of a night and the dominant female during the day.

6.5 Rheas

- a) The breeding season for rheas is from September to April.
- b) Rheas reach sexual maturity from 18 months to two years of age.
- c) Eggs are laid every other day. The incubation period for rheas is 30-43 days with an average of 37-38 days. Males totally dominate the breeding process and alone incubate the eggs.

6.6 Artificial incubation

- a) Artificial incubation of ratite eggs require specialist bird incubation skills and should only be attempted if natural incubation of the eggs cannot occur. As a guide, incubation settings for ratite eggs are:
 - i) Cassowaries: Temperature (35.8-36°C);
Relative humidity incubation (55%)
Relative humidity hatching (55%)
 - ii) Emus: Temperature (35.25-36. °C);
Relative humidity incubation (50%);
Relative humidity hatching (75-80%)

- iii) Ostriches: Temperature (36.4-36.9°C);
Relative humidity incubation (35-40%);
Relative humidity hatching (83-88%)
- iv) Rheas: Temperature (35.6-36.7°C);
Relative humidity incubation (62-65%);
Relative humidity hatching (80%)

7. Records and identification

- a) All individual animals must be able to be clearly identified.
- b) Approved methods of identification include wing tags and microchips. Microchips which should be placed sub-cutaneous at the back of the neck or in the left lateral thigh when the bird is at least three months of age. Photographs of the head casques of cassowaries may also be useful for identification.

8. Health and Safety

- a) No ratites other than quiet emus are to be housed in a public walk-through exhibit. Emus that show any form of aggression must be removed from an exhibit that has public access.
- b) Entry to ratite exhibits by authorised personnel other than keepers is permitted, provided the following conditions are adhered to:
 - i) In the opinion of the supervisor, the risk of possible attack has been minimised.
 - ii) The person is accompanied at all times by a supervisor.
 - iii) The person has been instructed in relevant safety issues and has indicated that he/she understands the instructions and agrees to conform to all safety directions given by the supervisor while in the enclosure.
- c) A double fence or other suitable barrier will be required along an enclosure fence line or at a viewing area if individual animals become aggressive to or are agitated by members of the public.
- d) A suitable first aid kit and qualified first aid officer must be present whenever there is reason to manually restrain adult ratites.

9. Provisions of other Acts

The above exhibit standards of the ARAZPAQ are to be regarded as being the recommended minimum standards for fauna parks to achieve, and are not in derogation of the provisions of other relevant Acts and Regulations including the Workplace Health and Safety Act.

Part G — Self-assessment

Ratified by Queensland Parks and Wildlife Association (now known as Australasian Regional Association of Zoological Parks and Aquaria Queensland (ARAZPAQ)) on 10 December 1998.

Approved by the Minister for Environment and Heritage on 7 January 1999.

Reviewed by ARAZPAQ and the Environmental Protection Agency May 2006.

Prepared by ARAZPAQ and the EPA.

Background

At the then Queensland Parks and Wildlife Association conference at Sea World in November 1995 and Port Douglas in October 1996, members participated in workshops with the objective of finding a consensus as to how we as an Association might meet standards set in the code of practice for exhibiting wildlife in Queensland.

On reviewing this outcome, the Executive Committee considered this a reactive approach. Rather than put out fires, the Association required procedures to prevent damaging situations from occurring. An internal mechanism for setting priorities for our goals and operations with a view to upgrading all exhibits where practical over time was thought to be a better solution.

At the Port Douglas conference *Striving for tomorrow*, the matter was discussed further in a workshop Self-assessment and how we achieve it. The code of practice presented in Part 1 - Minimum standards for exhibiting wildlife in Queensland has been formulated from this conference's recommendations.

Self-assessment or self-administration ultimately might form part of the Queensland Parks and Wildlife Service (QPWS) wildlife licence renewal system. From the QPWS perspective, this would be a most suitable outcome by helping alleviate its role in zoological management and reducing any tendency for confrontation between institutions and QPWS staff.

The trial period for self-assessment ended on 31 December 2001. Like all ARAZPAQ codes of practice, this document is dynamic and requires constant review. The latest review took place in May 2006.

Foreword

The self-assessment code of practice has been designed by ARAZPAQ for holders of a wildlife exhibitor licence issued by QPWS.

The code is designed for use as an internal mechanism for setting priorities for the goals and operations of all wildlife parks.

A major ARAZPAQ objective is to encourage all members to upgrade wildlife exhibits to comply with the general and specific codes of practice — under the definition of code in the *Nature Conservation (Wildlife Management) Regulation 2006* — within a reasonable period of time.

This document has been produced by ARAZPAQ members and QPWS staff in consultation.

The key to success for self-assessment lies with the integrity of all personnel and operators of wildlife parks in Queensland and their willingness to commit to strive for excellence.

A trial period of three years was set to evaluate the procedures and outcomes of this document. Following this trial, a workshop was conducted where the standards were reviewed and finalised.

Since February 2006 ARAZPAQ members were consulted to review the code of practice. In May 2006 at the Port Douglas ARAZPAQ Standards Committee meeting an extensive review of all members' comments was undertaken and comments were incorporated in the May 2006 code of practice review.

When reading the code, please understand this is an industry document and therefore an appreciation of ownership must be recognised.

Our future lies within our grasp to meet the changing attitudes and expectations of our guests.

1. Self-assessment committee

The ARAZPAQ Standards Committee and ARAZPAQ President will oversee the operation of the self-assessment process. The Standards Committee will report back to the ARAZPAQ Management Committee on any issues arising out of the self-assessment process.

2. Self-assessment forms

- a) Self-assessment forms have been written to complement all ARAZPAQ codes of practice. Where a code does not exist for a specific species, a general assessment form is to be used. Species' specific self-assessment forms will be written for each code of practice as it is ratified by the ARAZPAQ Management Committee.
- b) Self-assessment documents must be completed and sent to the ARAZPAQ Management Committee by the 31st December each year.
- c) The self-assessment forms must be completed by the full time or consultant veterinarian, curator or other personnel of similar stature in the member institution. The person completing the forms must have a good knowledge of captive wildlife management.
- d) All completed self-assessment forms must be verified and signed off by the chief executive officer or authorised executive officer of the institution before being forwarded to the ARAZPAQ Management Committee.
- e) Every two years self-assessment forms are to be completed using two people, one as described in section 2c plus EITHER another curator OR wildlife manager OR QPWS officer OR RSPCA officer OR independent veterinarian. People completing the forms must have a good knowledge of captive wildlife management.
- f) All completed self-assessment forms sent to the ARAZPAQ will be held for a period of five years. These forms will remain confidential documents. In the event a QPWS Regional Service Director wishes to inspect the self-assessment forms of a particular institution, the ARAZPAQ Management Committee can permit such access only where the institution has provided the ARAZPAQ Management Committee with its written consent. The institution must provide a response signed by the chief executive officer within 48 hours of a request. Note: A court can subpoena documents.
- g) The self-assessment code's intent is that enclosures in a wildlife exhibitor facility which do not meet all the requirements of the relevant code, as outlined on the self-assessment form, should be brought to the attention of the institution's management by the person described in section 2c so the situation can be rectified within an agreed time frame.
- h) The ARAZPAQ Management Committee will be responsible for inspecting completed self-assessment forms to ensure they have been filled out correctly. If the forms of a particular institution are not correct, the Management Committee will advise the institution of the anomalies promptly. The institution can then correct its forms and resubmit them to the ARAZPAQ.

3. Facility summary sheet

- a) Every second year to coincide with peer review of the institution, a facility summary sheet is to be completed by the chief executive officer or authorised executive officer of the institution.
- b) The facility summary sheet is an opportunity for the chief executive officer or authorised executive officer to give an executive summary of the operational progress of the institution and to outline remedial action and time frames for enclosures which do not meet ARAZPAQ standards as outlined in codes of practice.
- c) The completed facility summary sheet is to be sent to the ARAZPAQ Management Committee with the self-assessment forms.
- d) The facility summary sheet will remain a confidential document. On request, the sheet can be viewed by QPWS Regional officers with 48 hours' written notice to the relevant institution and the ARAZPAQ Management Committee. Note: A court can subpoena documents.

4. Licence renewal

- a) The facility summary sheet and the self-assessment forms might assist the process of QPWS licence renewal of that park.
- b) Before approving the renewal of a wildlife exhibitor licence for a particular institution, QPWS might write to the ARAZPAQ Management Committee requesting confirmation that self-assessment forms and facility summary sheets for that institution have been filled out correctly.
- c) ARAZPAQ membership forms and self-assessment forms will be forwarded to ARAZPAQ members at the same time each year.
- d) QPWS staff will assess all institutions in accord with a common standard.

5. Conflict resolution

- a) QPWS has a legislative mandate to conduct facility inspections of any wildlife exhibitor licensee at any reasonable time.
- b) If a problem is continually recognised through self-assessment, public complaint or a QPWS officer, notification must be given to the ARAZPAQ Management Committee and QPWS Regional centre. Note: Irrespective of this document, a conservation officer or another authorised person might decide to take action in particular circumstances.
- c) Subject to any rule of law and client confidentiality, the institution involved is to refer matters of concern to QPWS in relation to any wildlife park to the ARAZPAQ Management Committee before corrective action is begun by QPWS. The time allowed for a response to QPWS is to be negotiated and agreed on by the institution, QPWS and the ARAZPAQ Management Committee.
- d) Action to be taken and the time allowed will be dealt with on a case by case basis considering the nature and severity of the issue.
- e) To the greatest extent possible, action to rectify the situation within a suitable time must be agreed to by the three parties.
- f) If for any reason a suitable time or action cannot be agreed on, the ARAZPAQ President is proposed to act as arbitrator.

6. Completing the forms

Each species or group of animals that has had a code of practice ratified by ARAZPAQ and EPA has a specific self-assessment form that is to be filled out each year.

For each species or group of animals that does not have a code of practice a general form is to be filled out.

When filling out each form, consult the code to check the requirements for that species.

Every enclosure must have an assessment form filled out covering all species held in the enclosure.

When a code of practice exists for each of two or more species sharing an enclosure, a separate form should be filled out for each species. For free range macropod and ungulate enclosures with multiple species, a single form can be filled out with the space requirements totalled.

The summary statement on the front sheet of each form is to be filled out at the end of each assessment. This should be used to give an overall assessment of the condition of the enclosure and will be used for quick reference to the specific enclosure.

Under every specific enclosure requirement is a comments/improvements section which is to be used to make notes on that particular aspect of the enclosure.

ARAZPAQ Self-assessment form

Institutional summary

(To be filled out only ONCE each year.)

Institution: _____
Licence no: _____ Date of assessment: ___ / ___ / ___
Name of person/s conducting assessment: _____
Position/organisation: _____

Summary statement: (overview of enclosure/areas needing attention)

• Drinking water supplied to all enclosures: Yes No

Comments/Improvements: _____

• Boundary fences in good condition: Yes No

Comments/Improvements: _____

• Qualified veterinarian on staff or consultant: Yes No

Comments/Improvements: _____

• Adequate quarantine/off-display facilities: Yes No

Comments/Improvements: _____

• Suitable hygienic food preparation area: Yes No

Comments/Improvements: _____

• Pest control program in place: Yes No
Comments/Improvements: _____

• All enclosures with educational signs: Yes No
Comments/Improvements: _____

• Records for all animals and activities present: Yes No
Comments/Improvements: _____

• All animals free from illness or injury: Yes No
Comments/Improvements: _____

• All injured animals on display have explanatory signs present: Yes No
Comments/Improvements: _____

• Comments/Improvements: _____

Signed CEO: _____ Date of assessment: ___ / ___ / ___

ARAZPAQ Self-assessment form

Exhibits without a specific code of practice

(To be filled out for each enclosure holding animals not covered by a specific code of practice.)

Institution: _____

Licence no: _____ Date of assessment: ____ / ____ / ____

Name of person/s conducting assessment: _____

Position/organisation: _____

Summary statement: (overview of enclosure/areas needing attention)

Enclosure ID/name: _____

Species within enclosure: _____

• Drinking water supplied and changed daily: Yes No

Comments/Improvements: _____

• Enclosure fences in good condition: Yes No

Comments/Improvements: _____

• Enclosure substrate clean and free of faeces: Yes No

Comments/Improvements: _____

• Is sufficient shelter provided: Yes No
Comments/Improvements: _____

• Enclosure general appearance hygienic: Yes No
Comments/Improvements: _____

• Enclosure free of vermin/pests: Yes No
Comments/Improvements: _____

• Facilities available off-display: Yes No
Comments/Improvements: _____

• Feed provided in hygienic condition: Yes No
Comments/Improvements: _____

• All animals free from illness or injury: Yes No
Comments/Improvements: _____

• If injured animals on display, are explanatory signs present: Yes No
Comments/Improvements: _____

• Are all species in enclosure identified by suitable signs: Yes No
Comments/Improvements: _____

Minimum standards for exhibiting wildlife in Queensland

- Is the enclosure supervisor suitably qualified: Yes No

Comments/Improvements: _____

Signed CEO: _____ Date of assessment: ___ / ___ / ___

ARAZPAQ Self-assessment form

Exhibits for Koalas

(To be filled out for each enclosure holding koalas.)

Institution: _____

Licence no: _____ Date of assessment: ___ / ___ / ___

Name of person/s conducting assessment: _____

Position/organisation: _____

Summary statement: (overview of enclosure/areas needing attention)

Enclosure ID/name: _____

Other species within enclosure: _____

• Drinking water supplied and changed daily: Yes No

Comments/Improvements: _____

• Enclosure fences in good condition: Yes No

Comments/Improvements: _____

• Eucalyptus plantation providing leaf, %: Yes No

Comments/Improvements: _____

• Fresh leaf provided daily: Yes No
Comments/Improvements: _____

• Records kept of handling for photo opportunities: Yes No
Comments/Improvements: _____

• Enclosure substrate clean and free of faeces: Yes No
Comments/Improvements: _____

• Is sufficient shelter provided: Yes No
Comments/Improvements: _____

• Enclosure general appearance hygienic: Yes No
Comments/Improvements: _____

• Enclosure free of vermin/pests: Yes No
Comments/Improvements: _____

• Enclosure size suitable for number/sex of animals: Yes No
Comments/Improvements: _____

• Two forks per animal 1-2m off ground: Yes No
Comments/Improvements: _____

• Facilities available off-display: Yes No
Comments/Improvements: _____

• All animals free from illness or injury: Yes No
Comments/Improvements: _____

• If injured animals on display, are explanatory signs present: Yes No
Comments/Improvements: _____

• Suitable signs on enclosure: Yes No
Comments/Improvements: _____

• Is enclosure supervisor suitably qualified: Yes No
Comments/Improvements: _____

Signed CEO: _____ Date of assessment: ___ / ___ / ___

ARAZPAQ Self-assessment form

Exhibits for Macropods

(To be filled out for each enclosure holding macropods.)

Institution: _____	
Licence no: _____	Date of assessment: ___ / ___ / ___
Name of person/s conducting assessment: _____	
Position/organisation: _____	

Summary statement: (overview of enclosure/areas needing attention)

Enclosure ID/name: _____

Species and number in enclosure: _____

• Enclosure size suitable for number of animals: Yes No

Comments/Improvements: _____

• Drinking water supplied and changed daily: Yes No

Comments/Improvements: _____

• Enclosure fences in good condition: Yes No

Comments/Improvements: _____

• Enclosure substrate clean and free of faeces: Yes No
Comments/Improvements: _____

• Is sufficient shelter provided: Yes No
Comments/Improvements: _____

• Enclosure general appearance hygienic: Yes No
Comments/Improvements: _____

• Enclosure free of vermin/pests: Yes No
Comments/Improvements: _____

• Facilities available off-display: Yes No
Comments/Improvements: _____

• Feed provided in hygienic condition: Yes No
Comments/Improvements: _____

• All animals free from illness or injury: Yes No
Comments/Improvements: _____

• If injured animals on display, are explanatory signs present: Yes No
Comments/Improvements: _____

Minimum standards for exhibiting wildlife in Queensland

- Are all species in enclosure identified by suitable signs: Yes No

Comments/Improvements: _____

- Is enclosure supervisor suitably qualified: Yes No

Comments/Improvements: _____

Signed CEO: _____ Date of assessment: ____ / ____ / ____

ARAZPAQ Self-assessment form

Exhibits for Raptors

(To be filled out for each enclosure holding raptors.)

Institution: _____

Licence no: _____ Date of assessment: ___ / ___ / ___

Name of person/s conducting assessment: _____

Position/organisation: _____

Summary statement: (overview of enclosure/areas needing attention)

Enclosure ID/name: _____

Species in enclosure: _____

• Enclosure size suitable: Yes No

Comments/Improvements: _____

• Drinking water supplied and changed daily: Yes No

Comments/Improvements: _____

• Enclosure fences in good condition: Yes No

Comments/Improvements: _____

• Enclosure substrate hygienic: Yes No
Comments/Improvements: _____

• Is sufficient shelter provided: Yes No
Comments/Improvements: _____

• Enclosure general appearance hygienic: Yes No
Comments/Improvements: _____

• Enclosure free of vermin/pests: Yes No
Comments/Improvements: _____

• Facilities available off-display: Yes No
Comments/Improvements: _____

• Feed provided in hygienic condition: Yes No
Comments/Improvements: _____

• All animals free from illness or injury: Yes No
Comments/Improvements: _____

• If injured animals on display, are explanatory signs present: Yes No
Comments/Improvements: _____

Minimum standards for exhibiting wildlife in Queensland

- Are all species in enclosure identified by suitable signs Yes No

Comments/Improvements: _____

- Is enclosure supervisor suitably qualified: Yes No

Comments/Improvements: _____

Signed CEO: _____ Date of assessment: ____ / ____ / ____

ARAZPAQ Self-assessment form

Exhibits for Wombats

(To be filled out for each enclosure holding wombats.)

Institution: _____	
Licence no: _____	Date of assessment: ___ / ___ / ___
Name of person/s conducting assessment: _____	
Position/organisation: _____	

Summary statement: (overview of enclosure/areas needing attention)

Enclosure ID/name: _____

Species in enclosure: _____

Number of animals in enclosure: _____

• Enclosure size suitable: Yes No

Comments/Improvements: _____

• Drinking water supplied and changed daily: Yes No

Comments/Improvements: _____

• Enclosure fences in good condition: Yes No
Comments/Improvements: _____

• Enclosure substrate clean and free of faeces: Yes No
Comments/Improvements: _____

• Is sufficient shelter provided: Yes No
Comments/Improvements: _____

• Enclosure general appearance hygienic: Yes No
Comments/Improvements: _____

• Enclosure free of vermin/pests: Yes No
Comments/Improvements: _____

• Facilities available off-display: Yes No
Comments/Improvements: _____

• Feed provided in hygienic condition: Yes No
Comments/Improvements: _____

• All animals free from illness or injury: Yes No
Comments/Improvements: _____

• If injured animals on display, are explanatory signs present: Yes No
Comments/Improvements: _____

• Are all species in enclosure identified by suitable signs: Yes No
Comments/Improvements: _____

• Is enclosure supervisor suitably qualified: Yes No
Comments/Improvements: _____

Signed CEO: _____ Date of assessment: ____ / ____ / ____

ARAZPAQ Self-assessment form

Exhibits for Crocodiles

(To be filled out for each enclosure holding crocodiles and alligators.)

Institution: _____

Licence no: _____ Date of assessment: ___ / ___ / ___

Name of person/s conducting assessment: _____

Position/organisation: _____

Summary statement: (overview of enclosure/areas needing attention)

Enclosure ID/name: _____

Species and number in enclosure: _____

• Enclosure size and stocking suitable: Yes No

Comments/Improvements: _____

• Enclosure provides adequate temperature: Yes No

Comments/Improvements: _____

• Pond suitable size for animals displayed: Yes No

Comments/Improvements: _____

• Pond water quality meets standards: Yes No
Comments/Improvements: _____

• Enclosure fences in good condition: Yes No
Comments/Improvements: _____

• Enclosure substrate clean and free of faeces: Yes No
Comments/Improvements: _____

• Land area large enough: Yes No
Comments/Improvements: _____

• Is sufficient shelter provided: Yes No
Comments/Improvements: _____

• Enclosure general appearance hygienic: Yes No
Comments/Improvements: _____

• Feed provided in hygienic condition: Yes No
Comments/Improvements: _____

• All animals free from illness or injury: Yes No
Comments/Improvements: _____

Minimum standards for exhibiting wildlife in Queensland

- If injured animals on display, are explanatory signs present: Yes No

Comments/Improvements: _____

- Suitable signs present: Yes No

Comments/Improvements: _____

- Is enclosure supervisor suitably qualified: Yes No

Comments/Improvements: _____

Signed CEO: _____ Date of assessment: ____ / ____ / ____

ARAZPAQ Self-assessment form

Exhibits for Primates

(To be filled out for each enclosure holding primates.)

Institution: _____	
Licence no: _____	Date of assessment: ___ / ___ / ___
Name of person/s conducting assessment: _____	
Position/organisation: _____	

Summary statement: (overview of enclosure/areas needing attention)

Enclosure ID/name: _____

Date enclosure was built/primates first displayed: ___ / ___ / ___

Other species in enclosure: _____

• Drinking water supplied and changed daily: Yes No

Comments/Improvements: _____

• Enclosure fences in good condition: Yes No

Comments/Improvements: _____

* Fresh food provided daily: Yes No

Comments/Improvements: _____

• Enclosure substrate clean and free of faeces: Yes No
Comments/Improvements: _____

• Is sufficient shelter provided: Yes No
Comments/Improvements: _____

• Does the size of the enclosure meet standards: Yes No
Comments/Improvements: _____

• Enclosure general appearance hygienic: Yes No
Comments/Improvements: _____

• Enclosure free of vermin/pests: Yes No
Comments/Improvements: _____

• Adequate climbing branches provided.: Yes No
Comments/Improvements: _____

• Facilities available off-display: Yes No
Comments/Improvements: _____

• All animals free from illness or injury: Yes No
Comments/Improvements: _____

• Suitable signs on enclosure: Yes No
Comments/Improvements: _____

• Is enclosure supervisor suitably qualified: Yes No
Comments/Improvements: _____

• Do all staff working in section have current vaccinations: Yes No
Comments/Improvements: _____

Signed CEO: _____ Date of assessment: ____ / ____ / ____

ARAZPAQ Self-assessment form

Exhibits for Ratites

(To be filled out for all enclosures holding ratites.)

Institution: _____

Licence no: _____ Date of assessment: ____ / ____ / ____

Name of person/s conducting assessment: _____

Position/organisation: _____

Summary statement: (overview of enclosure/areas needing attention)

Enclosure ID/name: _____

Species in enclosure: _____

• Drinking water supplied and changed daily: Yes No

Comments/Improvements: _____

• Enclosure fences in good condition: Yes No

Comments/Improvements: _____

• Enclosure size meets standards: Yes No

Comments/Improvements: _____

• Is sufficient shelter provided: Yes No
Comments/Improvements: _____

• Enclosure can be serviced with birds isolated: Yes No
Comments/Improvements: _____

• Enclosure general appearance hygienic: Yes No
Comments/Improvements: _____

• Enclosure free of vermin/pests: Yes No
Comments/Improvements: _____

• Facilities available off-display: Yes No
Comments/Improvements: _____

• Feed provided in hygienic condition: Yes No
Comments/Improvements: _____

• All animals free from illness or injury: Yes No
Comments/Improvements: _____

• If injured animals on display, are explanatory signs present: Yes No
Comments/Improvements: _____

Minimum standards for exhibiting wildlife in Queensland

- Are all species in enclosure identified by suitable signs: Yes No

Comments/Improvements: _____

- Is enclosure supervisor suitably qualified: Yes No

Comments/Improvements: _____

Signed CEO: _____ Date of assessment: ____ / ____ / ____

ARAZPAQ Self-assessment form

Exhibits for Ungulates

(To be filled out for each enclosure holding ungulates.)

Institution: _____

Licence no: _____ Date of assessment: ____ / ____ / ____

Name of person/s conducting assessment: _____

Position/organisation: _____

Summary statement: (overview of enclosure/areas needing attention)

Enclosure ID/name: _____

Species in enclosure: _____

• Drinking water supplied and changed daily: Yes No

Comments/Improvements: _____

• Enclosure fences in good condition: Yes No

Comments/Improvements: _____

• Enclosure size meets standards: Yes No

Comments/Improvements: _____

• Is sufficient shelter provided: Yes No
Comments/Improvements: _____

• Enclosure ponds if present meet minimum standards: Yes No
Comments/Improvements: _____

• Enclosure general appearance hygienic: Yes No
Comments/Improvements: _____

• Enclosure free of vermin/pests: Yes No
Comments/Improvements: _____

• Facilities available off-display: Yes No
Comments/Improvements: _____

• Feed provided in hygienic condition: Yes No
Comments/Improvements: _____

• All animals free from illness or injury: Yes No
Comments/Improvements: _____

• If injured animals on display, are explanatory signs present: Yes No
Comments/Improvements: _____

Minimum standards for exhibiting wildlife in Queensland

- Are all species in enclosure identified by suitable signs: Yes No

Comments/Improvements: _____

- Is enclosure supervisor suitably qualified: Yes No

Comments/Improvements: _____

Signed CEO: _____ Date of assessment: ____ / ____ / ____

ARAZPAQ Self-assessment form

Exhibits for Fish

(To be filled out for each tank holding fish.)

Institution: _____	
Licence no: _____	Date of assessment: ___ / ___ / ___
Name of person/s conducting assessment: _____	
Position/organisation: _____	

Summary statement: (overview of enclosure/areas needing attention)

Tank ID/name: _____

Species and number in tank: _____

• Tank size adequate for number and size held: Yes No

Comments/Improvements: _____

• Water quality maintained at optimum conditions and records kept: Yes No

Comments/Improvements: _____

• Quarantine facilities available off-display: Yes No

Comments/Improvements: _____

• Any sick, injured or dead fish on display: Yes No
Comments/Improvements: _____

• Waste food and faeces removed daily: Yes No
Comments/Improvements: _____

• Tank general appearance hygienic: Yes No
Comments/Improvements: _____

• Is lighting adequate and appropriate for the species held: Yes No
Comments/Improvements: _____

• Is food type and quality appropriate for species held: Yes No
Comments/Improvements: _____

• Is food stored in an hygienic condition: Yes No
Comments/Improvements: _____

• Are sufficient niches provided for all individuals: Yes No
Comments/Improvements: _____

• Suitable signs present for all species: Yes No
Comments/Improvements: _____

Minimum standards for exhibiting wildlife in Queensland

• Is enclosure supervisor suitably qualified: Yes No

Comments/Improvements: _____

Signed CEO: _____ Date of assessment: ___ / ___ / ___

ARAZPAQ Self-assessment form

Exhibits for Cetaceans

(To be filled out for each enclosure holding cetaceans.)

Institution: _____

Licence no: _____ Date of assessment: ____ / ____ / ____

Name of person/s conducting assessment: _____

Position/organisation: _____

Summary statement: (overview of enclosure/areas needing attention)

Enclosure ID/name: _____

Species and number in enclosure: _____

• Enclosure size and stocking suitable: Yes No

Comments/Improvements: _____

• Pool water quality maintained at optimum recommended level: Yes No

Comments/Improvements: _____

• Pond water quality test results maintained: Yes No

Comments/Improvements: _____

• Enclosure substrate and general appearance hygienic: Yes No
Comments/Improvements: _____

• Enclosure fences in good condition: Yes No
Comments/Improvements: _____

• Are off-display facilities available: Yes No
Comments/Improvements: _____

• Is the enclosure constructed from suitable material: Yes No
Comments/Improvements: _____

• Is the food type and quality appropriate: Yes No
Comments/Improvements: _____

• Is food provided in hygienic condition: Yes No
Comments/Improvements: _____

• Enclosure free of vermin and pests: Yes No
Comments/Improvements: _____

• All animals free from illness or injury: Yes No
Comments/Improvements: _____

Minimum standards for exhibiting wildlife in Queensland

- If injured animals on display, are explanatory signs present: Yes No

Comments/Improvements: _____

- Suitable signs present: Yes No

Comments/Improvements: _____

- Is enclosure supervisor suitably qualified: Yes No

Comments/Improvements: _____

Signed CEO: _____ Date of assessment: ____ / ____ / ____

ARAZPAQ Self-assessment form

Exhibits for Pinnipeds

(To be filled out for each enclosure holding pinnipeds.)

Institution: _____
Licence no: _____ Date of assessment: ___ / ___ / ___
Name of person/s conducting assessment: _____
Position/organisation: _____

Summary statement: (overview of enclosure/areas needing attention)

Enclosure ID/name: _____

Species and number in enclosure: _____

• Enclosure size and stocking suitable: Yes No

Comments/Improvements: _____

• Pool water quality maintained at optimum recommended level: Yes No

Comments/Improvements: _____

• Pond water quality test results maintained: Yes No

Comments/Improvements: _____

•

• Enclosure substrate and general appearance hygienic: Yes No
Comments/Improvements: _____

• Enclosure fences in good condition: Yes No
Comments/Improvements: _____

• Are off-display facilities available: Yes No
Comments/Improvements: _____

• Is enclosure constructed from suitable material: Yes No
Comments/Improvements: _____

• Is food type and quality appropriate: Yes No
Comments/Improvements: _____

• Is food provided in hygienic condition: Yes No
Comments/Improvements: _____

• Enclosure has sufficient shelter and ventilation: Yes No
Comments/Improvements: _____

• All animals free from illness or injury: Yes No
Comments/Improvements: _____

• If injured animals on display, are explanatory signs present: Yes No
Comments/Improvements: _____

• Suitable signs present for all species: Yes No
Comments/Improvements: _____

• Is enclosure supervisor suitably qualified: Yes No
Comments/Improvements: _____

Signed CEO: _____ Date of assessment: ____ / ____ / ____