

AN INVESTIGATION INTO THE WELFARE STANDARDS OF ZOOS IN MALAYSIA

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by
ACRES
(ANIMAL CONCERNS RESEARCH AND EDUCATION SOCIETY)

in collaboration with
WSPA
(WORLD SOCIETY FOR THE PROTECTION OF ANIMALS)

for
**myZOO - A coalition of Malaysian NGOs dedicated to a Vision of a
future where all zoo animals experience optimal welfare in Malaysia**

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ACRES is a Singapore-based animal protection charity, dedicated to a
Vision of a world where animals are treated with compassion and
respect.

Our approach is **Scientific, Creative, Practical** and **Positive**.



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EXECUTIVE SUMMARY

- In 2009, following an investigation into the welfare standards at thirty-nine zoos in Peninsular Malaysia, ACRES identified the ten zoos of most concern from an animal welfare perspective. The primary purpose of this report on those ten particularly problematic zoos is as a resource for myZOO, a coalition of Malaysian NGOs formed in July 2010 who are dedicated to tackling zoo animal welfare issues (with ACRES and WSPA playing an advisory role). It is meant to provide direction to myZOO's Malaysian zoo animal welfare work by focussing attention on the highest priority zoos.
- A total of 159 enclosures in ten zoos were surveyed.
- Overall, the standards at these zoos fell far short of meeting the ACRES Acceptable Standards for the Well-being of Animals, which are based on international guidelines and legislation.
- At all ten zoos, the living conditions of the animals were no better, and in some cases were worse, than those observed during the previous investigation in 2009. Some of the zoos had new animals on display who were not seen in 2009, whilst some animals appeared to have gone from some of the zoos since 2009. Saleng zoo in particular appeared to have acquired several more big cats since our last visit in 2009.
- At all of the zoos, most or all of the animals were housed in wholly substandard conditions. At every zoo most or all enclosures and husbandry practices failed to meet the minimum international standards listed in Section 2.3.
- In 44.7 percent of enclosures, animals were housed in a constantly noisy environment.
- In 22.0 percent of enclosures, animals were not provided with sufficient shelter to give protection from inclement weather and excessive sunlight.
- Some animals were housed in old-style enclosures, such as oppressive cages and pits, which are known to be detrimental

to an animals' welfare. Some animals were housed indoors, with no outdoor view. In 23.3 percent of the enclosures, animals were not provided with sufficient view beyond the enclosure.

- 87.4 percent of enclosures had unsuitable substrates, namely wire mesh, concrete or hard wooden or metal floors. These substrates are known to be detrimental to welfare. Wire mesh floors can cause discomfort, pain, infection and injury. Hard surfaces such as concrete can be uncomfortable or physically damaging to animals and are inherently boring. They may also increase the thermal load that animals experience, by absorbing heat during the daytime and radiating heat at night.
- 94.3 percent of the enclosures were rusty or contained harmful items. Many enclosures were in a state of disrepair with extensive areas of rust. This posed a safety and health risk for the animals.
- 64.2 percent of enclosures had poor drainage, with many enclosures having extensive algal growth on the floors.
- Poor hygiene was a widespread problem, with several enclosures having dirty floors covered in food and faeces, excessive algal growth on floors and fixtures, filthy bathing pools and dirty food and water receptacles. This lack of good hygiene can cause severe health problems for the animals and lead to a spread of disease.
- 8.2 percent of enclosures contained litter, which can be harmful to animals if ingested
- 98.7 percent of enclosures did not have sufficient furniture and many were essentially featureless. Most lacked species-specific furniture. Some enclosures were completely barren. A lack of complexity results in an unstimulating environment, which is detrimental to the psychological well-being of animals. In addition, impoverished environments give little opportunity to the animals to make choices, which is essential to satisfying their behavioural needs. Few enclosures resembled the animals' natural habitats, for example animals from forest environments usually did not have sufficient trees or vegetation.

Naturalistic environments are generally better for animals as they typically provide a far greater range of behavioural opportunities.

- 100 percent of enclosures had little or no enrichment and there was no evidence of any kind of ongoing behavioural enrichment programmes at any facility. Many animals were inactive, indicating a need for more stimulation. Behavioural/environmental enrichment is essential for captive animals as, even in the best of circumstances, they live in environments far removed from the natural, inherently complex and stimulating environments they are adapted to. Enrichment is also essential to encourage physical activity and exercise, both of which are severely limited in captive settings.
- In 28.9 percent of enclosures, animals were housed in inappropriate social groupings. For example social animals were sometimes housed alone, which is detrimental to their welfare, or territorial animals were housed in overcrowded conditions.
- 92.5 percent of enclosures failed to offer any or sufficient private areas for the animals to escape from visitor view or from the view of animals in neighbouring enclosures. This lack of private areas can be highly stressful for animals. Some enclosures also did not provide private areas for animals to retreat to retreat from the view of enclosure mates, which can be an additional major source of stress.
- For 75.4 percent of the enclosures, members of the public could easily come into contact with the animals. Members of the public were observed feeding, touching and harassing animals. This is likely to be very stressful for the animals, and physical contact between animals and visitors could lead to zoonoses spread both ways. The lack of adequate stand-off barriers to prevent contact between visitors and the animals was a widespread problem. In many zoos there were not enough staff members to monitor visitor behaviour. In most zoos there were no signs instructing visitors not to touch, tease or feed the animals.

- 90.6 percent of enclosures were undersized. Most enclosures provided extremely small living spaces for the animals they housed; in some cases the area provided severely restricted the animals' movement. This lack of space prevented animals from engaging in natural movements and behaviours, which are essential for their well-being.
- Many animals were inactive. This is presumably an indication that many animals are bored from lack of stimulation and, in some cases, may have degenerated into a state of "learned helplessness", where, in an effort to cope with frustration, boredom and other chronic stressors, they have gradually closed themselves off from their environment, rather than interact with it.
- Many animals were also found to be exhibiting abnormal behaviours such as stereotypies. These are widely recognised as a clear indication that an animal is living in or has been living in suboptimal conditions. Most stereotypic behaviours occur when animals have failed to cope with or remove themselves from stressful situations.
- At some zoos, wounded and apparently sick animals were on display, instead of receiving treatment away from visitor view.
- Some animals did not have access to drinking water- one of their most basic needs.
- Food was often seen to be fed in inappropriate ways, for example food for arboreal gibbons and lorises was often seen to be fed on the ground. It was also common to see food placed in only one or two locations in enclosures, leading to possible monopolisation of the food resource by dominant individuals.
- At some zoos, public feeding of the animals by visitors was actively encouraged and generally did not appear to be closely regulated. Unregulated feeding of the animals by visitors could have severe health implications for the animals.
- Overall, the animals had little or no control over their environments and little opportunity to make choices. Both these elements are essential to satisfying the behavioural needs of animals, and, if lacking, will lead to poor welfare.

- A major concern encountered at some zoos was the use of neck tethers, leg chains and leashes for elephants, gibbons and macaques. Chaining of animals in this way is detrimental to their welfare as it restricts normal movement, thwarts their ability to engage in natural behaviours, and gives them little control over their environment. Such chaining can also cause physical discomfort and possibly injury.
- A major concern was the fact that at Danga Bay Petting Zoo animals were made to perform unnatural behaviours in a circus-style animal show. This show clearly demeaned and trivialised the animals, and was thus completely in contravention of the World Association of Zoos and Aquariums (WAZA) Code of Ethics and Animal Welfare. Furthermore, such use of animals is counter-educational, as it gives the public a misleading impression of the true nature of animals.
- Some zoos used animals for public photography session, which posed welfare concerns for the animals, as well as physical harm risks to zoo visitors and the potential for disease transfer between animals and humans because of close or direct contact.
- Some animals were handled with excessive force or in a cruel way, for example at Danga Bay Petting Zoo a tiger used for photography sessions was handled forcefully and beaten around the face with sticks to make him pose for photographs. Malayan sun bears used in the circus-style show at Danga Bay Petting Zoo were handled roughly and appeared to be in pain from tight ropes tied around their delicate muzzles which were constantly being pulled on.
- ACRES looks forward to working together with myZOO and PERHILITAN to eradicate the worst conditions in Malaysia's zoos to improve the welfare of captive animals in Malaysia and to raise the standards of its zoos.

CHAPTER 1: INTRODUCTION

1.1. Introduction to the zoos and the investigation

Peninsular Malaysia is home to a large number of facilities housing captive wild animals for public viewing. These range from large zoos housing thousands of animals, to mini zoos housing just a few individuals, and include government-operated facilities, private menageries and commercially-focussed zoos. In March 2009, a total of thirty-nine such facilities were known to be operating.

Malaysian animal welfare groups have in recent months and years received numerous complaints from concerned members of the public about the poor welfare of animals in certain captive establishments, and there have been several media articles on the welfare of animals in Malaysia's zoos.^{1, 33,34,35}

In today's world, with the importance of good welfare for captive wild animals being increasingly recognised by both the zoo community and the wider community, the importance of ensuring high welfare standards for captive animals in zoos and similar establishments cannot be over-emphasised.

As of March 2009, there had been no comprehensive review of the welfare of animals housed in all of Malaysia's captive establishments. In theory, these facilities should follow the guidelines set by the South East Asian Zoos Association (SEAZA) in their "General Standards for Exhibiting Animals", but there was no existing documentation to establish whether this was indeed the case.

In 2009, ACRES conducted an investigation to determine the welfare standards for mammals, reptiles and birds at every establishment housing these animals in Peninsular Malaysia, and to ascertain whether these facilities were adhering to the SEAZA General Standards for Exhibiting Animals.

The investigation revealed that the majority of the zoos failed to meet the SEAZA standards, and many animals were experiencing poor welfare due to being housed in substandard conditions or subjected to inappropriate husbandry practices.

A list of the ten zoos of most concern was compiled as the priority zoos on which to focus efforts for eradication of the worst conditions and making improvements.

In 2010, ACRES revisited and once again surveyed eight of these ten zoos of most concern (two had closed down in the interim), along with the addition of the next two zoos identified as being of most concern, to identify if there had been any changes to the welfare conditions at these zoos. Elephants, primates, big cats, bears and small mammals were selected as the focus species for this investigation, in accordance with recommendations by The International Academy of Animal Welfare Sciences (see Chapter 2.5).

The results of the investigation are to be used by myZOO, a recently-formed coalition of Malaysian NGOs dedicated to tackling zoo animal welfare issues (with ACRES and WSPA playing an advisory role), to focus on making improvements at these ten zoos as the first step in myZOO's work in addressing zoo animal welfare issues in Malaysia.

1.2. Welfare of wild animals in captivity

The captive environment presents a vastly different environment to what animals are adapted to. Compared to the dynamic, complex nature of the natural environment, captivity is frequently more static. Physical factors such as temperature, humidity, structural features, and the type, quantity, and availability of food are typically more predictable in a captive environment.² As a result of this predictability, captive environments frequently offer less stimulation and opportunity for choice than natural environments.²



Like their counterparts in the wild, captive animals need to engage in a variety of instinctive behaviours such as seeking shelter, nest sites, mates and food resources, avoiding predators and parasites, defending territories, and exploring new spaces.³ However, most captives are, to a large degree, restricted or prevented from engaging in these behaviours.³

The behaviour of wild animals in captivity may also be under human control,⁴ in contrast to the wild, where decisions are made based on the individual's own choices. This ability of the animal to have some control over its environment appears to be crucial in stress reduction and therefore reduce the risk of associated health problems.⁵

Suboptimal and restrictive captive conditions often result in the development of stereotypies,⁶ which typically arise when an animal's environment lacks appropriate stimulation.⁷ Stereotypies are behaviour patterns that are invariant in style, performed repetitively, and appear to have no function. They are of concern because they may indicate poor welfare, and are sometimes detrimental to health.⁸

Suboptimal conditions can also result in frustration and increased levels of stress, leading to development of aberrant behaviours such as hyperaggression, hypersexuality, lethargy and other problematic conditions.³ Captive conditions also decrease the level of the animals' general reactivity and markedly change their behaviour.⁹



Most progressive zoos now recognize that confining animals in boring, behaviourally impoverished enclosures that fail to satisfy their species-specific needs is no longer acceptable.³

Each animal species has evolved adaptations to survive in their own particular natural environment. It is thus extremely important that zoo designers, zoo management and animal care staff allow for a free expression and utilization of these adaptations in captivity.¹⁰ Progressive enrichment strategies should be implemented to encourage animals to take control of their own lives by providing an environment that allows them choice and control.

1.3. Abnormal behaviour and stereotypic behaviour

Excessive inactivity in zoo animals is one of the recognised signs of chronic stress.¹⁰ Animals housed in a barren environment show an overall decrease in interaction with their environment.¹¹ This decrease in interaction results in a high level of inactivity. A lack of sufficient space, climbing structures, manipulable objects, enrichment and proper feeding husbandry all contribute to this lack of activity and the resulting boredom of the animals. Broom and Johnson (1993) emphasise that a “profound lack of stimulation is something to which no vertebrate is likely to adapt”.¹²

Whether in the wild or in captivity, every living organism is affected by the environment in which it lives.¹³ Individuals have to constantly adapt to the changing environment. However, some environmental stimuli are so intense, prolonged or frequent that adaptation is impossible¹² and this often results in an increased level of stress in the animals. This can be manifested in a variety of ways, including changes in the animal’s behaviour.

Following initial exposure to a stressful stimulus, the general emergency response is initiated, but once control over the situation is not achieved, two distinct coping mechanisms become activated in



A polar bear displaying stereotypic behaviour.

both humans and non-human animals.¹⁴ They are referred to as the active and passive chronic stress response.¹³

The active chronic stress response is characterised by active attempts to control a situation by fighting or fleeing. The passive chronic stress response is initiated after active strategies have failed to resolve the problem.¹³ It is characterised by increased pituitary-adrenocortical activity, immobility and indications of depression.¹³ It is also characterised by the behavioural response termed 'learned helplessness'.¹⁵ This involves the shift of the behaviour of the animals from an active state into a more passive, inactive state.

Stereotypic behaviours are repeatedly performed, relatively invariant movement patterns with no apparent function or goal.¹⁶ These behaviours are clearly an indication of an abnormal animal-environment interaction.⁸ For most wild mammals in captivity, this probably means that the animal grew up in or is currently living in an environment suboptimal for meeting its natural, species-specific behavioural needs.⁸ These stereotypic behaviours are almost unique to captive animals.¹⁷

Stereotypies in captive animals have been associated with poor welfare for five decades.¹³ This is because they tend to develop in situations that have been identified as stressful and aversive.^{10,18} On the basis of behavioural and physiological evidence such situations include lack of stimulation, unavoidable fear or frustration¹⁹ and absence of a resource, or resources, required by the animal.²⁰ Such resource requirements can range from access to more space, a more complex, quieter or more interesting environment, food, social and sexual partners, or ability to perform certain behaviours.

Those species that are wide-ranging and opportunistic might be expected to have a greater tendency to develop certain atypical behaviours such as stereotypic pacing. Bears and small carnivores are particularly sensitive to "motor restraint by lack of space".¹³

CHAPTER 2: METHODOLOGY

2.1. Introduction and list of zoos inspected

In June 2010, ACRES investigators visited the ten zoos of most concern in Peninsular Malaysia, as identified by the 2009 ACRES investigation into the welfare of animals at all thirty-nine zoos in Peninsular Malaysia.

At each of the ten zoos, the living conditions for every primate, bear, big cat and small mammal whose enclosures were completely visible were assessed, using the ACRES Zoo Evaluation Form in Appendix I. A score was given for a total of fifteen questions for each enclosure for these focus animals at each zoo (1: Worst; 2: Poor; 3: Average; 4: Good; 5: Best).

The overall result for the zoo is the average score for all the enclosures surveyed.

The physical condition and behaviour of the animals was also noted as an indication of their welfare.

Elephants were included in the survey, but as they were not housed in enclosures their living conditions and husbandry were not assessed using the Zoo Evaluation Form and were recorded separately, and therefore did not influence the overall score for the zoo.

Animal shows were evaluated based on Section 2 (Use of Zoo and Aquarium Based Animals) of the WAZA Code of Ethics and Animal Welfare which states that “Where ‘wild’ animals are used in presentations, these presentations must:-

- (a) deliver a sound conservation message, or be of other educational value,
- (b) focus on natural behaviour,
- (c) not demean or trivialise the animal in any way.

If there is any indication that the welfare of the animal is being compromised, the presentation should be brought to a conclusion.”

The zoos surveyed were as follows:

- Danga Bay Petting Zoo (Johor)
- Bukit Merah Laketown Resort Ecopark (Perak)
- Kemaman Mini Zoo (Terengganu)
- Kuala Krai Mini Zoo (Kelantan)
- Kuala Lipis Mini Zoo (Pahang)
- Lye Huat Garden (Kedah)
- Melaka Butterfly and Reptile Sanctuary (Melaka)
- Port Dickson Mini Zoo (Negeri Sembilan)
- Saleng Zoo (Johor)
- Taman Teruntum Mini Zoo (Pahang)

2.2. Evaluation of the living conditions of captive animals

In 1965, the UK-based Bramble Commission reviewed the welfare of farm animals used in intensive agricultural operations. They formulated a set of minimal welfare standards that became known as the 'Five Freedoms'. Over the years, these standards were revised by Dr. John Webster and others. The most recent revision by the UK Farm Animal Welfare Council occurred in 1993.²⁴ These five freedoms are also heavily referenced in the United Kingdom's Secretary of State's Standards of Modern Zoo Practice.

These freedoms form a useful framework for the evaluation of the living conditions of captive animals. It allowed a systematic and comprehensive evaluation of captive facilities.

The five freedoms are briefly defined below. Detailed acceptable standards for each freedom are defined in the next section (Section 2.3).

- **Freedom from hunger and thirst.**

This is regarded as a basic need and is satisfied by a ready access to fresh water and a diet to maintain full health and vigor.

- **Freedom from thermal and physical discomfort.**

This freedom is satisfied by the provision of an appropriate environment including shelter and a comfortable resting area.

- **Freedom from injury, disease and pain.**

The enclosure should minimize the risk of injury and there must be the prevention or rapid diagnosis and treatment of injury or disease.

- **Freedom to express normal behaviour.**

The animals should be able to express normal patterns of behaviour by the provision of sufficient space, proper facilities and company of animal's own kind for social species.

- **Freedom from fear and distress.**

This last freedom is satisfied by ensuring conditions and treatment which avoid mental suffering.

The living conditions of the focus animals at all seventeen zoos were surveyed based on the following four freedoms instead of all five. Freedom from hunger and thirst was not evaluated due to the difficulty of seeing the food presented to all the focus animals. The evaluation was done on a per enclosure basis.

- **Freedom from thermal and physical discomfort.**
- **Freedom from injury, disease and pain.**
- **Freedom to express normal behaviours.**
- **Freedom from fear and distress.**

The ACRES Acceptable Standards for the Well-being of Animals stated in Section 2.3 forms a framework for the evaluation.

2.3. ACRES Acceptable Standards for the Well-being of Animals

These acceptable standards are developed based on the following documents:

- South East Asian Zoos Association general standards for exhibiting animals.²⁵
- European Association of Zoos and Aquaria standards for the accommodation and care of animals in zoos.²⁶
- Secretary of State's standards of modern zoo practice. Department of the Environment, Transport and the Regions. United Kingdom.²⁷
- General standards for exhibiting animals in New South Wales. Exhibited Animal Protection Act. New South Wales Agriculture, Australia. (NSW agriculture, 1995b).²⁸
- Policy of exhibiting primates in New South Wales. Exhibited Animal Protection Act. New South Wales Agriculture, Australia.²⁹
- Standards for exhibiting carnivores in New South Wales. Exhibited Animal Protection Act. New South Wales Agriculture, Australia.³⁰

Freedom from hunger and thirst

- The animals should be provided with diversity in the taste, colour, size and nutritional value of the food items fed to them.
- Food offered should meet the nutritional requirements of the animals.
- The food should be presented in a manner and frequency similar with the natural behaviour of the animals. It should also be designed to prolong feeding and foraging.
- Food must be presented in several areas to ensure that all members of the group have sufficient access.
- The animals should have constant access to fresh water. Water and other drinking receptacles, where used, must be regularly cleaned.
- There should be sufficient watering points within the enclosure to allow all animals to have access to water.
- Supplies of food and drink must be stored, prepared and offered to the animals under hygienic conditions.
- Uncontrolled feeding of the animals by the public must be prevented.

Freedom from thermal and physical discomfort

- Adequate provision must be made at all times to meet the needs of the animals with regard to temperature, ventilation, lighting, humidity and noise.
- The animals should have sufficient shelter from rain and sun within the enclosure.
- The enclosure should provide sufficient space to allow expression of a full range of species-typical behaviours and movements.
- Resting places and perches sufficient to accommodate all members of the group must be provided.
- The enclosure must be constructed so that the animals can rest at least two body lengths above the eye level of any member of the viewing public (most species).
- The floor substrate should be similar to their natural habitats but must also be effectively managed to avoid disease.
- The animals should have constant access to an outdoor environment.

- Enclosures, enclosure structures and enclosure barriers must be in such a condition that there is no likelihood of harm to the animals.
 - Any defects noted in an animal barrier or in any appliances or equipment within the enclosure should be repaired or replaced immediately and noted in the keeper's daily record sheet.
 - Water-filled moats used for the confinement of animals must be provided with a means of escape back to the exhibit.
- The enclosure should be hygienic and cleaned regularly, at least once a day where appropriate.
 - Debris (food and faeces) as well as any litter in the enclosure should be cleared away regularly to avoid any possibility of harm to animals.
- The enclosure must be well-drained so that all excess water is efficiently removed.

Freedom from injury, disease and pain

- The animals should be in good physical condition.
- The zookeepers should spend sufficient time each day (at least twice daily) observing the animals' physical condition and behaviour.
- Basic health evaluation of the animals must be carried out at frequent and regular intervals, and at least quarterly, by a qualified veterinarian.
- Records must be kept of any changes observed in behaviour, feeding, urination and defecation, veterinary or other treatment, or changes in husbandry or diet.
- Any treatment must be administered so as to create the least disturbance as is practical, and must take into account the disruption to the group and the animal's position in the dominance hierarchy as well as the stress to the individual.
- Preventive veterinary medicine must be in place and functional.
- The enclosure should be hygienic.
- The enclosure design should minimize the risk of injury.
- The design should ensure that the animals can get away from each other.

Freedom to express normal behaviours

- The enclosure should provide sufficient space and furniture to allow expression of a full range of species-typical behaviours and movements and minimize any abnormal behaviours.
- The arrangement of the furniture in the enclosure must be changed regularly.
- A complex three-dimensional environment should be provided, especially for arboreal animals, and seek to meet biological and behavioural needs of the species.
- A behavioural enrichment programme, which stimulates all five of the animals' senses, must be established to provide for the behavioural and psychological needs of the group.
- The animals should be kept in an appropriate social grouping.
- The design should ensure that the animals can get away from each other.

Freedom from fear and distress

- The animals should be allowed to retreat from public view whilst in the enclosure.
- The enclosure must be constructed so that the animals can rest above the eye level of any member of the viewing public. For primates, the animals must be able to rest at least two body lengths above the eye level of any member of the viewing public.
- The design should ensure that the animals can get away from each other.
- The enclosure barrier and distance between animals and visitors must be sufficient to effectively prevent contact between the public and the animals.
- The animals should have constant access to an outdoor environment.
- The enclosure should allow the expression of normal behaviours.
- The animals should be kept in an appropriate social grouping.

2.4. Evaluation of the behaviour of the focus animals

Since unsuitable living conditions are often indicated by the presence of abnormal behaviours exhibited by the animals,⁸ any instances of apparent abnormal behaviours that were observed during the survey were also recorded.

2.5. Focus species

Zoos often have limited funding and it is thus important to decide which animals have the most complex behavioural needs and to give them priority.³¹ The International Academy of Animal Welfare Sciences proposes the following list in order of priority.³¹



1. Great apes.
2. Bears, elephants, monkeys, sea lions.
3. General omnivores.
4. Carnivores.
5. Herbivores.

In addition, a 2003 report by scientists at Oxford University indicated that a particular lifestyle in the wild confers vulnerability to welfare problems in captivity.³² It appeared that home-range size and the daily distance travelled was the predicting factor in how well a species adapts to captivity. One of their key findings was that among the carnivores, naturally wide-ranging species show the most evidence of stress and/or psychological dysfunction in captivity.³²

CHAPTER 3. INDIVIDUAL ZOO REPORTS.

3.1 Saleng Zoo

Introduction

The survey of Saleng Zoo took place on 8th June 2010.

Saleng Zoo is a private zoo which was previously an arapaima fish farm, until the owner decided to start a collection of wild animals. The zoo is situated in a somewhat remote area, approximately 4km from Senai, Johor. At the time of our visit, the facility housed a variety of animals, including mammals, birds, reptiles and fish. The majority of animals were mammals, and there were a particularly large number of big cats, especially tigers, and also several bears and macaques.



Overall, the conditions at the zoo remained unchanged from what was observed and recorded during our last survey in 2009.

The zoo appeared to have acquired several new animals since our last survey in 2009, including twelve tigers (adults and cubs), two lions (cubs) and a male orang utan. The dusky langurs and one of the bears observed in the previous survey were not present in the collection this time.

A new enclosure appeared to be under construction. Unfortunately, this appeared to be another old-fashioned style cage rather than a more progressive, open-air, naturalistic style of enclosure.

Enclosures surveyed

- One orang utan enclosure (2 animals).
- One white-handed gibbon enclosure (1 animal).
- Four macaque enclosures (long-tailed macaques, pig-tailed macaques, bonnet macaques) (15 animals).
- Two baboon enclosures (4 animals).
- One slow loris enclosure (2 animals).
- Four Malayan sun bear enclosures (5 animals).
- Thirteen tiger enclosures (23 animals).
- One tiger with wild pig enclosure (1 tiger cub, one young wild pig).
- One tiger with lion enclosure (1 tiger, 1 lion)).
- Three lion enclosures (7 animals).
- One leopard enclosure (1 animal).
- One leopard cat enclosure (2 animals).
- Two common palm civet enclosures (3 animals).
- Two Malayan porcupine enclosures (7 animals).

Overall results

1: Worst; 2: Poor; 3: Average; 4: Good; 5: Best

Item	Ventilation	Lighting	Noise
Average	3.11	3.43	3.76

Item	Shelter	View	Substrate	Enclosure condition
Average	3.46	2.95	1.03	1.38

Item	Amount of litter	Drainage	Furniture	Enrichment
Average	2.81	1.51	1.81	1.11

Item	Social grouping	Private areas	Public contact	Size
Average	4.03	1.08	1.68	2.03

Overall average score: 2.35

Saleng Zoo failed to meet the acceptable standards for the well-being of the focus animals. All of the enclosures were of outdated small cage or pit-style design, which are detrimental to welfare. Many of the enclosures were in a state of disrepair and the welfare of the animals was severely compromised due to substandard living environments and poor husbandry practices.

All of the enclosures surveyed failed to meet most of the acceptable standards in Section 2.3.

Saleng zoo should not acquire additional animals and should focus instead on making improvements that enhance the welfare of the animals already living in their facility.

The main areas of concern were:

1. Failing to provide soft substrates. Every enclosure had a concrete, wire mesh or other hard floor. All, except for one porcupine enclosure, lacked any soft substrates.
2. Failing to provide a safe living environment. 94.6 percent of enclosures failed to provide a safe living environment. Most of the cages contained large rusted areas. Some contained other dangerous items, such as loose pieces of metal wire and broken concrete flooring. Some enclosures contained litter.
3. Failing to provide adequate drainage in enclosures. 83.8 percent the enclosures surveyed had extensive algal growth on the floors, with many also having wet floors or standing pools of water.
4. Failing to provide sufficient species-specific furniture. None of the enclosures had functional, species-specific furnishings of sufficient quality or quantity. Whilst some furniture was provided for most of the animals, it was typically minimal and simplistic, such as small concrete resting platforms. Some animals had no furniture at all.
5. Failing to provide species-specific enrichment. All of the enclosures failed to provide sufficient enrichment, and most contained none. The only enrichment provided for the animals were tyres in one bear enclosure and some of the primate enclosures.
6. Failing to house animals in appropriate social groupings. A gibbon and some macaques were inappropriately housed alone. A lion and a tiger were inappropriately housed together, as were a tiger cub and young wild pig.

7. Failing to provide sufficient private areas. 97.3 percent of enclosures failed to provide sufficient private areas. Out of all the enclosures surveyed, only one porcupine enclosure had private areas.
8. Failing to ensure that visitors could not touch the animals. For 89.2 percent of the enclosures, visitors could easily touch the animals, even when barriers were in place. This posed a serious safety concern and allowed for the spread of zoonoses.
9. Failing to provide sufficient space. 89.2 percent of enclosures failed to provide the minimum sufficient space for the animals they housed. All enclosures surveyed were too small and did not facilitate engagement in natural behaviours. Some enclosures were exceptionally small, barely allowing even routine postural adjustments. For example, a cage housing an adult male lion was only 2m x 1.5m x 1.5m in size.
10. Failing to provide clean drinking water. Many of the animals had access to dirty drinking water only, and most water receptacles were dirty and covered in algae.
11. Some of the tigers were housed in pit-style enclosures, which are totally unsuitable living environments.
12. Unregulated feeding of animals. Visitors were observed feeding the animals. Unregulated feeding can cause serious health problems for the animals.
13. Several animals had health problems which require immediate veterinary attention. These animals should not be on display.
14. Many of the animals displayed stereotypic behaviours. These were a clear indication that the animals were living in or had been exposed to substandard environments.

Primate enclosures

1: Worst; 2: Poor; 3: Average; 4: Good; 5: Best

Item	Ventilation	Lighting	Noise
Average	3.11	3.78	3.78

Item	Shelter	View	Substrate	Enclosure condition
Average	3.00	3.00	1.00	1.00

Item	Amount of litter	Drainage	Furniture	Enrichment
Average	2.44	2.67	1.78	1.22

Item	Social grouping	Private areas	Public contact	Size
Average	2.67	1.00	1.33	1.78

Average score: 2.24

The animals

The zoo housed at least one white-handed gibbon, fifteen macaques (long-tailed macaques, pig-tailed macaques and bonnet macaques), four baboons and two slow lorises.

The gibbon, one long-tailed macaque and one pig-tailed macaque were inappropriately housed alone, whilst the territorial lorises were inappropriately housed together.

Two male baboons exhibited substantial fur loss over their bodies, and the male orang utan exhibited fur loss on his back.

One large male pig-tailed macaque in the largest macaque enclosure appeared blind in one eye and had open wounds on his legs. Many of the macaques had collars or chains around their necks.



Two of the male baboons exhibited severe fur loss over their bodies.

The enclosures and husbandry

At least eleven macaques of various species were housed in a fairly large cage, but because most of the floor was taken up by a pond there was very little usable dry area- just a small wooden platform at one end. The macaques were mostly restricted to using a few narrow platforms and beams.

The gibbon, one pig-tailed macaque, one long-tailed macaque and the slow lorises were housed in four similar cages positioned in a row with adjoining sides. These primates could not escape from the view of each other, a potential chronic stressor.

The baboons and orang utans were housed in small, old fashioned cages. The baboons were housed next to bears, with no visual barriers between the cages, which could be highly stressful for them. The bears and baboons could easily come into contact with each other, allowing for disease transfer (of particular concern for animals from different continents) and the possibility of injuries caused by aggressive interactions through the barrier. A baby pig-tailed macaque and a baby long-tailed macaque were housed in a very small, barren cage, approximately 20cm x 20cm x 40cm.



These baby macaques were kept in an extremely small, barren, rusty cage, with no shelter or drinking water.



This macaque enclosure contained hardly any land area for the macaques.

All of these primate enclosures were far too small and did not allow the animals to exhibit most of their natural behaviours. The gibbon had no opportunity for brachiation (swinging movement) in his small cage. All primate enclosures lacked sufficient furniture.

All enclosures had either concrete or wire mesh floors, which are detrimental to welfare. All of the concrete floors were poorly drained and covered in algae.

All enclosures lacked private areas, and the large macaque enclosure, baboon cages and baby macaque cage lacked sufficient and effective shelter. The cage containing the baby macaques was left out in the open air, fully exposing the macaques to the elements.

All enclosures had rusty parts and fixtures, posing a safety hazard. One baboon was seen chewing on a loose, rusty nail. The cage housing a lone long-tailed macaque contained bits of loose wire and frayed string.

The orang utan enclosure and large macaque enclosure contained some hanging tyres, but no other forms of enrichment. None of the other primates had any enrichment.

The enclosures of the lone long-tailed macaque, lone pig-tailed macaque and gibbon contained several pieces of litter, and the long-tailed macaque was observed consuming a food wrapper.

Visitors could easily touch all of the primates through the wire mesh or bars of all cages, or could easily breach the barriers in place. This posed a serious safety concern and allowed for the spread of zoonoses, as well as being a welfare concern. Visitors were also observed feeding the primates.



Baboons were housed in rusty, old-fashioned, dark, damp cages.

Most of the water bowls were dirty and covered in algae, and most contained dirty water. The baby pig-tailed macaque and baby long-tailed macaque in the small cage did not have any access to water. The solitary pig-tailed macaque had no water- the bowl had not been secured and was overturned. The water bowls for the gibbon and the slow lorises were inappropriately placed on the floors of their cages- these arboreal primates rarely come to the ground in the wild, and should be fed and watered high off the ground.



A dirty, algae-covered drinking water receptacle in a baboon enclosure.

The baboons were observed being fed noodles, an inappropriate food, which were placed directly on the filthy, algae-covered floor.

Chained macaques

In addition to the macaques housed in cages, the zoo also had two pig-tailed macaques who were chained near to the entrance by short chains around their necks, approximately 1.5m and 2m long. These chains severely restricted their movements. These macaques had no shelter, no private areas and no enrichment. Although they could see each other, they had no physical contact with each other, which is highly detrimental to such social animals. Chaining animals in such a way is highly detrimental to their welfare, and no animals should be kept in this way. Visitors could easily touch these macaques.

Behaviour

The pig-tailed macaque and the long-tailed macaque who were both housed alone exhibited stereotypic pacing behaviour, whilst the gibbon was seen swinging in a repetitive, stereotypic manner in the same spot over and over again. One baboon exhibited bar-biting behaviour. The female orang utan and two of the baboons displayed begging behaviour.

Recommendations short-term

- Provide more space- additional surface area can be created by the provision of more structures and furniture in the enclosures.
- Provide additional shelter for the large mixed macaque cages and provide more effective shelter for the baboon cages. Ensure the baby macaques in the small cage have shelter at all times.
- Provide more furniture for climbing and more furniture high up in the enclosures, preferably including trees and/or vegetation. Provide suitable sleeping/resting areas for all individuals.
- Provide the gibbon with more opportunities for brachiation.
- Provide areas of soft substrate (e.g. woodchips, soil, grass and/or sand) in all of the enclosures.
- Provide movable objects for play and manipulation.
- Establish a regular and varied behavioural enrichment programme, which stimulates all five of the animals' senses, to provide for the behavioural and psychological needs of the primates.
- Provide visual barriers and private areas where the primates can escape entirely from visitor view, the view of animals in neighbouring enclosures and each other, ensuring there is at least one private area per animal.
- Remove all rust from the cages, including all rusted furniture items. Remove all other dangerous items from the cages.
- Ensure that the enclosures are cleaned at least twice a day.



Orang utans were housed in a barren, oppressive cage.

- Ensure that clean drinking water is available for all animals at all times, and that the gibbons and lorises do not need to come to the floor to drink it.
- Install effective barriers to ensure that visitors cannot touch the primates.
- Install signs around the enclosures informing people not to throw litter into or around the enclosures, or anywhere on the zoo grounds.
- Ensure that the primates are fed an appropriate diet.
- Release the pig-tailed macaques from their chains and house them together with other macaques.
- Remove the collars from all the macaques' necks.
- House the baby macaques with other macaques, preferably with their mothers.

Recommendation long-term

- Move the primates to much larger, naturalistic enclosures as a matter of urgency. The enclosures they were housed in at the time of this survey were wholly substandard.

Bear enclosures

1: Worst; 2: Poor; 3: Average; 4: Good; 5: Best

Item	Ventilation	Lighting	Noise
Average	3.00	3.25	3.75

Item	Shelter	View	Substrate	Enclosure condition
Average	3.50	3.00	1.00	1.00

Item	Amount of litter	Drainage	Furniture	Enrichment
Average	3.00	1.00	2.00	1.25

Item	Social grouping	Private areas	Public contact	Size
Average	5.00	1.00	2.00	2.00

Average score: 2.38

The animals

The zoo housed at least five Malayan sun bears in four cages.

One Malayan sun bear had bald patches on their head and another had bald patches on their sides.

The enclosures and husbandry

All five bears were housed in small cages.

All enclosures were too small to allow for significant movement and most natural behaviours.

All of the enclosures had fully concrete floors which were poorly drained and covered with substantial algal growth, with no areas of soft substrate.



This Malayan sun bear had bald patches on the head.

All of the enclosures lacked sufficient furniture and none were equipped with for climbing apparatus. Each enclosure contained a small pool, but these were either empty or contained dirty water. One pool was barely big enough for the bear to sit inside. Three of the enclosures contained no enrichment at all, whilst one contained a single hanging tyre.

None of the enclosures contained any private areas.

All of the enclosures had large areas of rust, posing a safety hazard.

For all of the bear enclosures it was easy for visitors to lean over the barriers and touch the bars of the cages. The ease at which visitors could touch the bears through the bars posed a serious safety hazard, a risk of zoonoses spread, and a welfare concern for the bears.

All water bowls were filthy and drinking water was foul.

The bears were observed being fed noodles, a non-nutritive food, directly on the dirty cage floors.

Behaviour

Four of the bears were observed performing stereotypic pacing behaviour, and one also displayed stereotypic swaying.



The Malayan sun bears at Saleng Zoo were all housed in oppressive, barren, dark, damp, rusty cages.



Poor hygiene and poor drainage was a major problem in the bear enclosures.

Recommendations short-term

- Provide more space- additional surface area can be created by the provision of more structures and furniture in the enclosures.
- Provide areas of soft substrate (e.g. woodchips, soil, grass and/or sand) in all of the enclosures.
- Provide furniture for climbing, resting platforms that are not made of concrete (e.g. wooden resting platforms) and trees/vegetation. Provide suitable sleeping/resting areas for all individuals.
- Provide a larger water pool in the enclosure with the smallest pool. Ensure that water pools are at all times filled with clean water.
- Provide movable objects for play and manipulation.
- Establish a regular and varied behavioural enrichment programme, which stimulates all five of the animals' senses, to provide for the behavioural and psychological needs of the bears.
- Provide visual barriers and private areas where the bears can escape entirely from visitor view, the view of animals in neighbouring enclosures and each other, ensuring there is at least one private area per animal.
- Ensure all enclosures are well-drained.
- Remove all rust from the enclosures, as well as any potentially harmful items.
- Ensure all enclosures are cleaned at least twice a day.
- Ensure all animals have clean drinking water and that drinking receptacles are clean and free of algae.
- Install effective stand-off barriers that keep visitors a safe distance from the bears.



This young bear paced stereotypically along the edge of the pool.

Recommendation long-term

- Move the bears to much larger, naturalistic enclosures as a matter of urgency. The enclosures they were housed in at the time of this survey were wholly substandard.

Big cat enclosures

1: Worst; 2: Poor; 3: Average; 4: Good; 5: Best

Item	Ventilation	Lighting	Noise
Average	3.16	3.26	3.79

Item	Shelter	View	Substrate	Enclosure condition
Average	3.58	2.89	1.00	1.74

Item	Amount of litter	Drainage	Furniture	Enrichment
Average	2.89	1.21	1.84	1.05

Item	Social grouping	Private areas	Public contact	Size
Average	4.32	1.00	2.05	2.05

Average score: 2.39

The animals

The zoo housed at least twenty-three tigers, six lions and one leopard in nineteen enclosures. Another tiger was housed in a cage behind the larger open-air tiger enclosures, but it was not entirely visible so it was not included in this evaluation.

A tiger and a lion were inappropriately housed together in one cage, as were a tiger cub and a young wild pig. One of the wild pig's front legs appeared swollen and injured and the pig was unable to use it.



This lion had wounds on his head and was in poor overall body condition.

The leopard had a severe skin infection on the face and neck, possibly scabies or a severe ear mite infection, and was seen repeatedly rubbing his head against the artificial tree in his cage. He was also overweight. A male lion housed alone in a very small cage had open wounds on his head, and we observed a keeper spraying some “wound dressing spray” on them. One tiger cub in a cage with the mother and two other cubs appeared to be very lethargic and ill and was observed repeatedly vomiting.



This leopard had a severe skin infection.

The enclosures and husbandry

All of the lions, the leopard and most of the tigers were housed in cages. Two of the tigers were housed in open-air pit-style enclosures.

All were too small to allow for significant movement and most natural behaviours. One cage housing two tigers was particularly small, measuring only approximately 4m x 2m x 1.5m.



This adult male lion barely had space to turn around in this small cage.

A lion cage which housed an adult male lion was extremely small, measuring only approximately 1.5m x 2m x 1.5m in size. The lion barely had space to stand up or turn around. There was a wooden panel for flooring which was broken in places, posing a safety hazard. The roof on the cage did not provide sufficient shelter from the elements, and the lion and the floor of the cage were observed getting wet from the rain.

All of the other big cat enclosures had concrete floors. The floors of the open-air tiger enclosures were cracked in several areas, with the broken edges posing a potential safety hazard.

Nearly all of the big cat enclosures were poorly drained, with all but two enclosures having substantial algal growth on the floors and many also having standing pools of water.

All of the enclosures lacked sufficient furniture. Most cages contained only a single concrete resting platform, often only large enough for one cat to lie on at a time, and no other furniture. All lacked furniture for climbing, except the leopard enclosure which contained one artificial tree structure. Some enclosures lacked any furniture at all. Most enclosures contained a pool for bathing, but these were too often small and shallow to allow for normal swimming or bathing and they could not accommodate more than one animal at a time. Most of the pools contained dirty water, some were empty.

None of the enclosures contained enrichment or private areas. Nearly all of the enclosures had rusty areas, posing a safety hazard. One lion enclosure contained a large piece of loose metal wire.

For all of the big cat enclosures, apart from the pit-style tiger enclosures, it was easy for visitors to lean over the barriers and touch the bars of the cages. This is an extreme safety hazard, poses a risk of zoonoses spread, as well as posing a welfare concern for the animals.

Behaviour

The leopard and one of the tigers were observed performing stereotypic pacing behaviour. The rest of the big cats were inactive.



Poor hygiene was a serious problem in the big cat enclosures, which had dirty, algae covered floors, pools and water receptacles.



Big cats were housed in extremely small, barren, oppressive cages.

Recommendations short-term

- Provide more space- additional surface area can be created by the provision of more structures and furniture in the enclosures.
- Provide areas of soft substrate (e.g. woodchips, soil, grass and/or sand) in all of the enclosures.
- Provide more furniture for climbing, resting platforms that are not made of concrete (e.g. wooden resting platforms) and trees/vegetation in the enclosures. Provide more furniture high off the ground in the leopard enclosure. Provide suitable sleeping/resting areas for all individuals.
- Provide water pools for the big cats who do not have them. Ensure that pools are kept filled with clean water at all times.
- Provide movable objects for play and manipulation.
- Establish a regular and varied behavioural enrichment programme, which stimulates all five of the animals' senses, to provide for the behavioural and psychological needs of the big cats.
- Provide visual barriers and private areas where the big cats can escape entirely from visitor view, the view of animals in neighbouring enclosures and each other, ensuring there is at least one private area per animal.
- Remove all rust from the enclosures, as well as any other harmful items.
- Ensure all enclosures are well-drained.
- Ensure all enclosures are cleaned at least twice a day.
- Ensure all big cats have clean drinking water and that drinking receptacles are clean and free of algae.
- Install effective stand-off barriers to prevent visitors from being able to make contact with the big cats.
- Move the male lion from the very small cage into a more appropriate living environment.
- Ensure that the male lion with the wounds on his head, the leopard, the sick tiger cub and the young wild pig receive



Tigers were forced to lie on hard concrete platforms, as they had no soft substrates in their enclosures.

proper veterinary treatment. These animals should be removed from visitor view whilst receiving treatment. Ensure that all animals receive proper, and also preventative, veterinary care.

- Stop all the big cats from breeding.
- Separate the tiger cub and young wild pig and preferably let each go back to their mothers.

Recommendation long-term

- Move the big cats to much larger, naturalistic enclosures as a matter of urgency. The enclosures they were housed in at the time of this survey were substandard.

Small mammal enclosures

1: Worst; 2: Poor; 3: Average; 4: Good; 5: Best

Item	Ventilation	Lighting	Noise
Average	3.00	3.60	3.60

Item	Shelter	View	Substrate	Enclosure condition
Average	3.80	3.00	1.20	1.00

Item	Amount of litter	Drainage	Furniture	Enrichment
Average	3.00	1.00	1.60	1.00

Item	Social grouping	Private areas	Public contact	Size
Average	4.60	1.60	1.00	2.40

Average score: 2.36

The animals

The zoo housed at least two leopard cats, three common palm civets and seven Malayan porcupines, in five cages.

The enclosures and husbandry

All of the small mammals were housed in cages. All of the animals would benefit from larger enclosures.

Only one porcupine enclosure contained soft substrate- all of the other enclosures had fully concrete floors. All enclosures were poorly drained, with algal growth on the floors. The “soft” substrate in the porcupine enclosure appeared compacted and looked like it had been that way for some time. The porcupines would benefit from having fresh soft substrate added



Civets were housed in this rusty, featureless cage, with a poorly-drained algae-covered floor.

on a regular basis.

All of the enclosures lacked sufficient furniture. The Malayan porcupine enclosures had no furniture at all. None of the enclosures contained any enrichment.

All of the enclosures, except for one porcupine enclosure, lacked private areas.

All of the enclosures had large areas of rust, posing a safety hazard.

The leopard cat cage and one of the civet cages had a lot of old food and old faeces on the floor and did not appear to have been cleaned for some time. The water bowl in one of the civet cages was very dirty.



The floor of the leopard cat enclosure was covered in old food and faeces.

For all of the small mammals, visitors could easily touch them through the bars, and no stand-off barriers were in place. This posed a safety hazard, a risk of zoonoses spread, and an animal welfare concern.

Recommendations short-term

- Provide more space- additional surface area can be created by the provision of more structures and furniture in the enclosures.
- Provide large areas of soft substrate (e.g. woodchips, soil, grass and/or sand) in all of the enclosures.
- Provide furniture for climbing, resting platforms that are not made of concrete (e.g. wooden resting platforms) and trees/vegetation. Provide suitable sleeping/resting areas for all individuals.
- Provide movable objects for play and manipulation.
- Establish a regular and varied behavioural enrichment programme, which stimulates all five of the animals' senses, to provide for the behavioural and psychological needs of the animals.
- Provide visual barriers and private areas where the animals can escape entirely from visitor view, the view of animals in neighbouring enclosures and each other, ensuring there is at least one private area per animal.
- Ensure all enclosures are well-drained.
- Remove all rust from the enclosures.
- Ensure all enclosures are cleaned at least twice a day.
- Ensure all animals have clean drinking water and that drinking receptacles are kept clean and free of algae.
- Install effective stand-off barriers to prevent visitors from being able to make contact with the animals.

Recommendation long-term

- Move the civets, porcupines and leopard cats to much larger, naturalistic enclosures. The enclosures they were housed in at the time of this survey were wholly substandard.

3.2 Danga Bay Petting Zoo

Introduction

The survey of Danga Bay Petting Zoo took place on 8th June 2010.

Danga Bay Petting Zoo is part of an entertainment complex at Danga Bay, Johor Bahru. According to their website, Danga Bay Petting Zoo houses 180 animal species including mammals, birds and reptiles. The zoo encourages contact between visitors and the animals, with tiger photography sessions on offer and a chained baby macaque and cockatoo on a perch at the entrance of the zoo. A circus-style show takes place two to three times per evening.

Overall, the conditions at the zoo remained unchanged from what was observed and recorded during our last survey in 2009. The circus-style show featured a bear riding a bicycle, which was not seen in the show in the 2009 survey.

At the time of this survey the zoo appeared to have acquired some new animals since our last survey in 2009, including a lion, tiger, baby pig-tailed macaque, chipmunk and eight sugar gliders. Some animals appeared to have gone since the last survey, including a skunk, slow loris and all of the ferrets and Bengal cats.

Enclosures surveyed

- One white-handed gibbon enclosure (1 animal).
- Five pig-tailed macaque enclosures (7 animals).
- One long-tailed macaque enclosure (1 animal).
- One capuchin enclosure (1 animal).
- One red-handed tamarin enclosure (1 animal).
- Four white-eared marmoset enclosures (7 animals).
- One slow loris enclosure (1 animal).
- Three tiger enclosures (3 animals).
- Two lion enclosures (2 animals).
- Two Malayan sun bear enclosures (2 animals).
- One Asian small-clawed otter enclosure (1 animal).
- One coati enclosure (1 animal).
- Three squirrel enclosures (3 animals).
- One chipmunk enclosure (1 animal).
- Four sugar glider enclosures (8 animals).

- One hedgehog enclosure (1 animal).

The living conditions for an Asian elephant were also assessed and recorded, although because he was not housed in an enclosure and was instead chained by the legs his living conditions were not assessed using the evaluation form or given a score.

Overall results

1: Worst; 2: Poor; 3: Average; 4: Good; 5: Best

Item	Ventilation	Lighting	Noise
Average	3.06	2.44	1.78

Item	Shelter	View	Substrate	Enclosure condition
Average	4.00	1.63	1.13	1.72

Item	Amount of litter	Drainage	Furniture	Enrichment
Average	3.00	3.47	1.69	1.03

Item	Social grouping	Private areas	Public contact	Size
Average	3.13	1.31	2.00	1.25

Overall average score: 2.18

Danga Bay Petting Zoo failed to meet the acceptable standards for the well-being of the focus animals. All of the enclosures were of outdated cage design, which is detrimental to animal welfare. Many of the cages were extremely small and restricted even basic movements. The welfare of the animals was severely compromised due to substandard living environments and poor husbandry practices. The welfare of the animals used in the circus-style show and for photography sessions was compromised even further.

All of the enclosures surveyed failed to meet most of the acceptable standards in Section 2.3.

The zoo should not acquire additional animals and should instead focus its resources on making improvements to the welfare of the animals currently in their collection.

The main areas of concern were:

1. Excessive noise. All of the animals were subjected to loud music being played over speakers for the duration of our visit, and even louder music when the animal shows were taking place. For many animals, this is a constant stressor.
2. Failing to provide the animals with appropriate levels of natural sunlight. 68.8 percent of enclosures failed to provide the animals with acceptable levels of sunlight. All of the primates, squirrels, sugar gliders and the hedgehog and chipmunk were housed indoors. These animals were also deprived of any stimulating view, decreasing the quality of their living environment even further.
3. Failing to provide soft substrates. 96.9 percent of enclosures failed to provide appropriate substrates. Every enclosure had a concrete, wire mesh or other hard floor. All, except for the hedgehog enclosure, lacked any soft substrates.
4. Failing to provide a safe living environment. 90.6 percent of enclosures failed to provide a safe living environment. Most of the cages contained rusted areas.
5. Failing to provide sufficient species-specific furniture. None of the enclosures provided sufficient or suitable, species-specific furniture. Some had no furniture at all. Whilst some furniture was provided for most of the animals, this was often minimal, for example some of the macaques had just a narrow horizontal metal pole.
6. Failing to provide species-specific enrichment. 100 percent of enclosures failed to provide sufficient enrichment. The only animal to have some enrichment provided was the white-handed gibbon, whose enclosure contained some ropes.
7. Failing to house animals in appropriate social groupings. A gibbon, a capuchin monkey, four pig-tailed macaques, a long-tailed macaque, a white-eared marmoset, a red handed tamarin an otter and a coati were all inappropriately housed alone.
8. Failing to provide sufficient private areas. 90.6 percent of enclosures lacked sufficient private areas. Out of all the enclosures surveyed, only three enclosures had sufficient private areas for animals to escape from visitor view, the view of

animals in neighbouring enclosures and from each other. Most enclosures had no private areas at all.

9. Failing to ensure that visitors could not touch the animals. For 53.1 percent of the enclosures, visitors could easily touch the animals, even when barriers were in place. This posed serious safety, zoonoses, and animal welfare concerns.
10. Failing to provide sufficient space. 93.8 percent of enclosures failed to provide the very minimum acceptable space for the species housed. All of the enclosures surveyed were too small to encourage most natural behaviours for the species they housed. Some enclosures were exceptionally undersized, barely allowing the animals to even make normal postural adjustments. For example, two adult tigers were housed in cages measuring approximately 1m x 2m x 1m in which they could barely stand up and not even turn around. Malayan sun bears were housed in cages measuring approximately 1m x 1.5m x 1.5m. Macaques were housed in cages measuring only about 1m x 1.5m x 2m.
11. An Asian elephant was chained by short leg chains which restricted him from moving at all. Chaining an animal in this way is unacceptable as it is highly detrimental to their welfare.
12. Failing to provide drinking water. Many animals, including the elephant, all of the macaques, the Malayan sun bears and the tigers did not have drinking water. The drinking water bottle on one of the sugar gliders cages was empty.
13. Some of the animals displayed stereotypic behaviours. These were a clear indication that the animals were living in or had been exposed to substandard environments.
14. The circus-style animal show failed to comply with the WAZA Code of Ethics and Animal Welfare. The show focused on unnatural behaviours and clearly demeaned and trivialised the animals. The show should cease immediately.
15. A tiger was used in photography sessions and was handled very roughly, including being hit in the face with a stick. When not being used for photography, the tiger was kept in an extremely small cage with barely enough room to move. The tiger photography session should cease immediately.

Asian elephant

A male elephant was housed, alone, tethered by extremely short chains around both his front and back legs, tied so tightly that he could barely move his legs at all. The elephant had no furniture, enrichment or private areas, and was stationed on a concrete floor. Standing on concrete for prolonged periods of time is known to cause severe foot problems for elephants. The elephant was observed engaged in a classic elephant stereotypy, swaying repeatedly from side to side.



The Asian elephant could barely move due to the restrictive chains and swayed repeatedly from side to side.

Primate enclosures

1: Worst; 2: Poor; 3: Average; 4: Good; 5: Best

Item	Ventilation	Lighting	Noise
Average	3.07	2.14	2.00

Item	Shelter	View	Substrate	Enclosure condition
Average	4.00	1.14	1.00	2.00

Item	Amount of litter	Drainage	Furniture	Enrichment
Average	3.00	3.79	1.79	1.07

Item	Social grouping	Private areas	Public contact	Size
Average	2.43	1.43	2.00	1.36

Average score: 2.15

The animals

The zoo housed at least one white-handed gibbon, eight pig-tailed macaques, one long-tailed macaque, one capuchin monkey, one slow loris, one red-handed tamarin and seven white-eared marmosets, in fourteen enclosures.



This small slow loris cage was wholly substandard, with little furniture, no vegetation and a wire mesh floor.

The enclosures and husbandry

All of the primates, except for the white-handed gibbon, were kept in extremely small cages, especially the capuchin, who was in a cage so small (approximately 60cm x 70cm x 80cm) that he could barely move. The macaques were all in small cages measuring approximately 1m x 1.5m x 2m. The primate cages were far too small and did not allow the animals to exhibit most of their natural behaviours.

The gibbon, three of the pig-tailed macaques, the long-tailed macaque, the capuchin and the red-handed tamarin were all inappropriately housed alone.

All of the primates were subjected to the constant loud music being played over speakers at the animal show area.

All of the primate enclosures, except for the white-handed gibbon enclosure, were in an indoor roofed area. This meant that the animals had restricted ventilation, little or no natural lighting and a very restricted view, mostly with no outdoor view. All of these factors contribute to poor welfare.



Macaques were kept alone in barren indoor cages with wire mesh floors.

Two of the macaque enclosures and the capuchin enclosure had no furniture at all. All of the other primate enclosures lacked sufficient furniture. For example, the other macaque enclosures contained no furniture except for a single narrow pole.

All enclosures had wire mesh floors, except for the white-handed gibbon enclosure which had a concrete floor, both of which are detrimental to welfare.

Most enclosures lacked any private areas. Only the marmosets had any private areas, but these were insufficient.

All enclosures, except for the white-handed gibbon enclosure, had rusty parts and fixtures, posing a safety hazard.

Apart from some ropes seen in the gibbon enclosure, no other cages appeared to contain any enrichment.

Visitors could easily touch all of the primates through the wire mesh or bars of the cages, or could easily breach the barriers. This posed serious safety, zoonoses, and animal welfare concerns.

The capuchin did not have any water in his upturned bowl. The water bowls for the gibbon and the slow lorises were inappropriately placed on the floors of their cages - these arboreal primates rarely come to the ground in the wild, and in captivity should be provided with elevated feeding and watering stations.

Chained macaques

The zoo also had a young pig-tailed macaque near to the entrance who was chained, alone, by a short chain around the neck. The chain was only approximately 20cm long, severely restricting the macaque's movement. This macaque had no shelter, no private areas and no enrichment. Chaining animals in such a way is highly detrimental to their welfare, and no animals should be kept in this way. Housing a social animal, especially a young one, away from others of his kind is unacceptable. Visitors could easily touch the macaque, posing a welfare concern and also allowing for the spread of zoonoses.



This young macaque was chained alone by a short neck chain, and had no way of avoiding being harassed by visitors.

Behaviour

One of the pig-tailed macaques was observed pulling at his fur repeatedly.

Recommendations short-term

- Move the macaques, capuchin and slow loris to much larger, outdoor enclosures as a matter of urgency. The enclosures they were housed in at the time of this study were unacceptable. House the pig-tailed macaques in a group or groups, or at least in pairs.
- Provide more space in the gibbon, marmoset and tamarin enclosures- additional surface area can be created by the provision of more structures and furniture in the enclosures.
- Stop chaining the young pig-tailed macaque, and house together with other pig-tailed macaques.
- Provide more furniture for brachiation and more furniture high up in the white-handed gibbon enclosure, preferably including trees and/or vegetation. Provide more furniture and vegetation in all the other enclosures. Provide suitable sleeping/resting areas for all individuals.
- Provide areas of soft substrate (e.g. woodchips, soil, grass and/or sand) in all of the enclosures.
- Ensure that no primates are forced to sit on wire mesh floors.
- Provide movable objects for play and manipulation.
- Establish a regular and varied behavioural enrichment programme, which stimulates all five of the animals' senses, to provide for the behavioural and psychological needs of the primates.
- Provide visual barriers and private areas where the primates can escape entirely from visitor view, the view of animals in neighbouring enclosures and each other, ensuring there is at least one private area per animal.
- Remove all rust from the cages, including all rusted furniture items. Remove all other dangerous items from the cages.
- Ensure that clean drinking water is available for all animals at all times, and that the gibbons and lorises do not need to come to the floor to drink it.



This capuchin was housed in an extremely small, barren cage within another larger cage, in which he could hardly move.

- Install effective barriers to ensure that visitors cannot touch the primates.
- Remove the neck chains from all of the macaques and the capuchin.

Recommendation long-term

- Move all of the primates to much larger, outdoor, naturalistic enclosures as a matter of urgency. The enclosures they were housed in at the time of this survey were grossly substandard.

Bear enclosures

1: Worst; 2: Poor; 3: Average; 4: Good; 5: Best

Item	Ventilation	Lighting	Noise
Average	3.00	3.00	1.00

Item	Shelter	View	Substrate	Enclosure condition
Average	4.00	3.00	1.00	2.00

Item	Amount of litter	Drainage	Furniture	Enrichment
Average	3.00	3.00	1.00	1.00

Item	Social grouping	Private areas	Public contact	Size
Average	5.00	1.00	3.00	1.00

Average score: 2.33

The animals

The zoo housed at least two Malayan sun bears in two cages.

The enclosures and husbandry

Both bears were housed in extremely small cages which barely allowed for any movement, let alone allowing them to perform natural behaviours. Their cages measured approximately 1m x 1.5m x 1.5m.

The bears were subjected to the constant loud music being played over speakers at the nearby animal show area.



The Malayan sun bears were housed in extremely small, barren cages near to the show area.

Both cages had hard floors that were poorly drained and damp. Neither enclosure contained any furniture, enrichment or private areas.

Both enclosures had rusted areas, posing a safety hazard, and one contained protruding loose wires.

Behaviour

One of the bears was observed performing a stereotypic pacing behaviour.

Recommendations short-term

- Move the bears to a larger enclosure/s as a matter of urgency. The cages they were housed in at the time of this survey were totally unacceptable. The bears could possibly be housed together.
- Provide areas of soft substrate (e.g. woodchips, soil, grass and/or sand) in any new enclosure/s.
- Provide furniture for climbing, resting platforms that are not made of concrete and trees/vegetation in any new enclosure/s. Provide suitable sleeping/resting areas for all individuals.
- Provide water pools for the bears. Ensure that pools are kept filled with clean water at all times.
- Provide movable objects for play and manipulation.
- Establish a regular and varied behavioural enrichment programme, which stimulates all five of the animals' senses, to provide for the behavioural and psychological needs of the bears.
- Provide visual barriers and private areas where the bears can escape entirely from visitor view and each other, ensuring there is at least one private area per animal.
- Remove all rust from the enclosures, as well as any other harmful items.
- Ensure all enclosures are well-drained.



This bear paced repeatedly from side to side.

Recommendation long-term

- Move the bears to a much larger, naturalistic enclosure/s as a matter of urgency. The enclosures they were housed in at the time of this survey failed to satisfy the biological and behavioural needs of these animals.

Big cat enclosures

1: Worst; 2: Poor; 3: Average; 4: Good; 5: Best

Item	Ventilation	Lighting	Noise
Average	3.00	3.20	1.20

Item	Shelter	View	Substrate	Enclosure condition
Average	4.00	3.00	1.00	1.80

Item	Amount of litter	Drainage	Furniture	Enrichment
Average	3.00	2.60	1.20	1.00

Item	Social grouping	Private areas	Public contact	Size
Average	3.40	1.00	2.80	1.20

Average score: 2.23

The animals

The zoo housed at least three tigers and two lions in five enclosures.

The enclosures and husbandry

All of the tigers and one of the lions were housed in extremely small cages which barely allowed for any movement and virtually no natural behaviours. Two of the tigers were housed in cages measuring just approximately 1.5m x 0.6m x 1.2m. The other tiger and one of the lions were kept in cages measuring approximately 1m x 2m x 2m. Another lion was housed in a larger cage, which allowed for some movement, but was still of an outdated design.

The lions were both inappropriately housed alone.



These tigers, who were used for the show and photography sessions, were housed in extremely small cages in which they could barely stand up or turn around.

All of the big cats were subjected to constant loud music being played over speakers at the animal show area, especially the tigers and the lion in the smaller cage, who were situated very close to the show area.

The largest lion enclosure had a fully concrete floor. All of the other big cat cages had hard wooden or plastic floors that were poorly drained and wet.

All of the tiger cages were extremely rusty posing a health hazard, and one also contained rusty chains. The small lion cage also had some rusted parts.



Big cats were housed in totally unacceptable extremely small, barren cages.

The larger lion enclosure contained one log, which is insufficient furniture. None of the other big cat enclosures contained any furniture. None of the enclosures contained enrichment or private areas.

Recommendations short-term

- Move the tigers and the lion in the small cages near the show/tiger photography area to larger enclosures as a matter of urgency. The cages they were housed in at the time of this study were totally unacceptable.
- Provide more space in the largest lion enclosure- additional surface area can be created by the provision of more structures and furniture in the enclosure.
- Provide areas of soft substrate (e.g. woodchips, soil, grass and/or sand) in the largest lion enclosure and any new enclosure.



Big cats were housed in totally unacceptable extremely small, barren cages.

- Provide furniture for climbing, resting platforms that are not made of concrete and trees/vegetation in the largest lion enclosure and any new enclosures. Provide suitable sleeping/resting areas for all individuals.
- Provide bathing pools for the big cats. Ensure the pools are kept filled with clean water at all times.
- Provide movable objects for play and manipulation.
- Establish a regular and varied behavioural enrichment programme, which stimulates all five of the animals' senses, to provide for the behavioural and psychological needs of the big cats.
- Provide visual barriers and private areas where the big cats can escape entirely from visitor view, the view of animals in neighbouring enclosures and each other, ensuring there is at least one private area per animal.
- Remove all rust from the enclosures, as well as any other harmful items.
- Ensure all enclosures are well-drained.

Recommendation long-term

- Move the big cats to much larger, naturalistic enclosures as a matter of urgency. The enclosures they were housed in at the time of this survey were substandard in every respect.

Small mammal enclosures

1: Worst; 2: Poor; 3: Average; 4: Good; 5: Best

Item	Ventilation	Lighting	Noise
Average	3.10	2.30	2.00

Item	Shelter	View	Substrate	Enclosure condition
Average	4.00	1.20	1.40	1.30

Item	Amount of litter	Drainage	Furniture	Enrichment
Average	3.00	3.80	1.90	1.00

Item	Social grouping	Private areas	Public contact	Size
Average	3.80	1.20	1.30	1.20

Average score: 2.17

The animals

The zoo housed at least one coati, one short clawed otter, three squirrels, eight sugar gliders, one chipmunk and one hedgehog in eleven enclosures.

The enclosures and husbandry

Most of the small mammals were housed in cages, except for the hedgehog who was housed in a glass-walled tank. Most of these enclosures were very small, for example the cages housing the squirrels, sugar gliders and chipmunk were approximately 30cm x 20cm by 20cm, and the hedgehog tank was not much bigger. The otter's cage was only 1x 1.5m x 1.5m. These small cages severely restricted movement and prevented most natural behaviours.

The otter and female coati were inappropriately housed alone.

All of the animals were subjected to the constant loud music being played over speakers at the animal show area.

The squirrel, sugar glider, chipmunk and hedgehog enclosures were in an indoor roofed area, meaning that the animals had restricted ventilation, little or no natural lighting and a very restricted view, mostly with no outdoor view. All of these factors contribute to poor welfare.

Only the hedgehog enclosure contained soft substrate- all of the other enclosures had wire mesh, concrete or other hard floor surfaces.

All of the enclosures lacked sufficient furniture. The hedgehog enclosure had no furniture at all. None of the enclosures contained any enrichment.

All of the enclosures lacked private areas.

All of the cages had large areas of rust, posing a safety hazard.



Squirrels, sugar gliders and a chipmunk were housed in small, rusty cages with wire mesh floors.



This hedgehog was kept indoors in a small enclosed tank, and had no private areas.

The otter enclosure was poorly drained, with algal growth on the plastic areas of flooring.

For all of the small mammals except for the hedgehog and otter, visitors could easily touch them through the bars, and no stand-off barriers were in place. This posed safety, zoonoses, and animal welfare concerns.

The water bottle on one of the sugar glider cages was empty.



This otter was housed alone in a small cage, with barely any space and just a small amount of water.

Behaviour

One of the squirrels displayed stereotypic circling behaviour, running in circles from the top to the bottom of the cage over and over again.

Recommendations short-term

- Move the otter out of his current cage into a much larger enclosure as a matter of urgency. The enclosure he was housed in at the time of this survey was unacceptable. The new enclosure must have a large pool which will allow the otter to swim extensively.
- Provide more space- additional surface area can be created by the provision of more structures and furniture in the enclosures.
- Provide large areas of soft substrate (e.g. woodchips, soil, grass and/or sand) in all of the enclosures.
- Provide furniture for climbing, resting platforms and vegetation. Provide suitable sleeping/resting areas for all individuals.
- Provide movable objects for play and manipulation.
- Establish a regular and varied behavioural enrichment programme, which stimulates all five of the animals' senses, to provide for the behavioural and psychological needs of the animals.
- Provide visual barriers and private areas where the animals can escape entirely from visitor view, the view of animals in neighbouring enclosures and each other, ensuring there is at least one private area per animal.
- Remove all rust from the enclosures.
- Ensure all animals have clean drinking water at all times.
- Install effective barriers to prevent visitors from being able to make contact with the animals.



This otter's cage had a wire mesh floor and was rusty.

Recommendation long-term

- Move all of the small mammals to much larger, naturalistic enclosures. The enclosures the otter, squirrels, sugar gliders, chipmunk and hedgehogs were housed in at the time of this survey were wholly substandard.

Animal shows and photography sessions

A circus-style animal show took place at least two times each evening in an old-fashioned style circus ring.

The animal show failed to comply with the WAZA Code of Ethics and Animal Welfare, as it focused on unnatural behaviours and clearly demeaned and trivialised the animals.

An elephant hit a football with a cricket bat, played the harmonica and bowed to the audience. A Malayan sun bear rode a bicycle and another bear walked on his hind legs around the ring. A pig-tailed macaque turned somersaults on the back of a pony cantering around the ring, and also stood on the pony holding a flag. A tiger was made to balance on two narrow ropes positioned high off the ground and to balance on his hind legs.



The animal show at Danga Bay Petting Zoo focused on unnatural tricks, such as this bear riding a bicycle.

ACRES urges Danga Bay Petting Zoo to cease the current animal show immediately.

If the show is to continue despite recommendations to the contrary, the WAZA Code of Ethics and Animal Welfare should be strictly followed. The show should feature natural behaviours only and not in any way demean or trivialise the animals. If an animal show is to continue, the zoo must also ensure that the holding areas where the show animals are kept meet the acceptable standards listed in Section 2.3.

Visitors could pay to take their photographs with a tiger for RM 10. There were serious welfare concerns for the tiger used in these photography sessions. Forcing wild animals to come into close contact with people and also restricting their movement and giving them no choice over their environment and actions is likely to be highly stressful for them. Furthermore, the keepers were seen repeatedly hitting the tiger in the face and on the body with sticks to get him to 'pose' with visitors, which is of course highly detrimental to the tiger's welfare.



An adult tiger was used for photography sessions at Danga Bay Petting Zoo.

In addition, coming into close contact with a dangerous animal such as a tiger poses a serious threat to public safety. ACRES urges Danga Bay Petting Zoo to immediately cease the tiger photography sessions, and not use any animals in such photography sessions in the future.

3.3 Melaka Butterfly and Reptile Sanctuary

Introduction

The survey of Melaka Butterfly and Reptile Sanctuary took place on 13th June 2010.

The Melaka Butterfly Garden and Reptile Sanctuary's main attraction is its large netted butterfly park and insect garden. At the time of our visit it also housed a wide variety of exotic snakes, some other reptiles, spiders and scorpions. A number of mammals and birds were also on display.



There was an animal photography area, where visitors could pay MYR 12 to take their photograph with a green iguana, Moluccan cockatoo or a blue and gold macaw.

Overall, the conditions at the zoo remained unchanged from what was observed and recorded during our last survey in 2009. However, we were pleased to note that the gharials were in an improved enclosure with a larger land area, with sand substrate, as opposed to the extremely small concrete land area in their previous enclosure.

We were concerned to note that the Malayan tapir was still suffering from a severe skin condition with several open wounds over the body, and the living conditions had not improved at all, with the tapir still living in a completely inappropriate environment and unhygienic conditions. Exactly the same sign that we saw in 2009 regarding the tapir's skin condition and treatment and requesting help with treatment advice was displayed on the tapir enclosure, indicating that the treatment had remained unchanged and that the zoo was still seeking advice.

Only one leopard was observed in the leopard enclosure, whereas in the 2009 survey there were two leopards.



The Malayan tapir was still suffering from a severe skin condition- as seen previously in 2009- and was covered in open sores. The tapir repeatedly rubbed against a (rusty) metal bar in an apparent attempt to obtain some relief from the skin discomfort.

Enclosures surveyed

- Three white-handed gibbon enclosures (6 animals).
- One slow loris enclosure (6 animals).
- One leopard enclosure (1 animal).
- One binturong enclosure (2 animals).
- One Asian small-clawed otter enclosure (1 animal).
- One smooth-coated otter enclosure (3 animals).

Overall results

1: Worst; 2: Poor; 3: Average; 4: Good; 5: Best

Item	Ventilation	Lighting	Noise
Average	3.00	3.50	3.00

Item	Shelter	View	Substrate	Enclosure condition
Average	3.25	3.00	1.00	1.38

Item	Amount of litter	Drainage	Furniture	Enrichment
Average	3.00	1.00	2.00	1.50

Item	Social grouping	Private areas	Public contact	Size
Average	3.13	1.13	1.13	2.13

Overall average score: 2.21

Melaka Butterfly and Reptile Sanctuary failed to meet the acceptable standards for the well-being of the focus animals. All of the enclosures were of outdated small cage design, which is detrimental to animal welfare. The welfare of the animals was severely compromised due to substandard living environments and poor husbandry practices.

All of the enclosures surveyed failed to meet most of the acceptable standards in Section 2.3.

The zoo should not acquire additional animals and should focus instead on improving the welfare of the animals currently in the collection.

The main areas of concern were:

1. Excessive noise. All of the gibbons were subjected to loud music being played over nearby speakers for the duration of our visit. Visitors, including many children, were able to get very close to the enclosures and were observed creating a lot of noise around the animals.
2. Failing to provide soft substrates. All of the enclosures failed to provide appropriate substrates. Every enclosure had a

concrete, wire mesh or other hard floor surface. All lacked any soft substrates.

3. Failing to provide a safe living environment. 87.5 percent of enclosures failed to provide a safe living environment. Most of the cages contained large rusted areas and/other dangerous items, such as loose pieces of metal wire and broken concrete flooring.
4. Failing to provide a well-drained enclosure. All of the enclosures surveyed had extensive algal growth on the floors, and many had wet floors or standing pools of water.
5. Failing to provide sufficient species-appropriate furniture. Existing furnishings were poor quality, minimal and not designed according to each animal's species-specific needs. For example, tree-dwelling animals such as the leopard and binturong had no high furniture to rest on.
6. Failing to provide species-specific enrichment. Aside from some vegetation in the slow loris and leopard enclosures, none of the enclosures contained any enrichment.
7. Failing to house animals in appropriate social groupings. Half of the enclosures housed animals in inappropriate social groups. A gibbon and an otter were inappropriately housed alone.
8. Failing to provide sufficient private areas. None of the enclosures provided sufficient private areas. Out of all the enclosures surveyed, only the smooth-coated otter enclosure provided a small private area, but this was large enough for one otter only. None of the other enclosures contained private areas for the animals to retreat from the view of cagemates, neighbouring animals or zoo visitors.
9. Failing to ensure that visitors could not touch the animals. For most of the enclosures, visitors could easily touch the animals, even if barriers were in place. This posed serious safety, zoonoses, and animal welfare concerns.
10. Failing to provide sufficient space. All of the enclosures surveyed were far too small to encourage most natural behaviours for the species they housed. Some enclosures were exceptionally small, barely allowing the animals to make normal postural adjustments. For example, a cage housing two binturongs was only 4m x 1m x 4m in size.
11. Failing to provide a hygienic environment. Many of the water receptacles were dirty and covered in algae.
12. Unregulated feeding of animals. Visitors could buy bananas to feed to the primates, and there did not appear to be any

regulation of how much they were fed. There was simply a sign saying that the primates could be fed bananas only.

13. Green iguanas, blue and gold macaws and a Moluccan cockatoo were used for animal photography and displayed on narrow branches for these photography sessions and the time between sessions. These were unsuitable living environments and did not allow the animals to move freely, perform natural behaviours or escape from visitor view.
14. The Malayan tapir had a severe skin problem which requires immediate veterinary attention. The tapir was covered in open wounds and was observed scratching frequently. This tapir should not be on display.

Primate enclosures

1: Worst; 2: Poor; 3: Average; 4: Good; 5: Best

Item	Ventilation	Lighting	Noise
Average	3.00	3.00	2.50

Item	Shelter	View	Substrate	Enclosure condition
Average	3.25	3.00	1.00	1.25

Item	Amount of litter	Drainage	Furniture	Enrichment
Average	3.00	1.00	2.00	1.75

Item	Social grouping	Private areas	Public contact	Size
Average	2.25	1.00	1.00	2.25

Average score: 2.08

The animals

The zoo housed at least six white-handed gibbons and at least six slow lorises in four enclosures. Two gibbons were inappropriately housed alone, whilst the territorial lorises were inappropriately housed together.

One of the slow lorises appeared to be underweight, and two of the lorises appeared to have poor fur condition. One had bald patches on the head.

The enclosures and husbandry

All of the gibbons were housed in cages, whilst the slow lorises were housed in a glass-fronted cage. The slow loris enclosure appeared to have very limited ventilation inside, as the three wire mesh sides of the cage were covered in bamboo poles, limiting air circulation.

All of the other primate enclosures were too small and did not allow the animals to express most of their natural behaviours. One gibbon enclosure, although fairly tall, was approximately 2.5m long and 2m wide, allowing no opportunity for brachiation. The slow loris enclosure was overcrowded.



This slow loris enclosure was small, overcrowded and poorly ventilated.

All primate enclosures lacked sufficient furniture. The gibbon enclosures were not equipped to allow for substantial brachiation, and contained few elevated furnishings. Most of the time, the gibbons were observed hanging from and swinging from the cage sides, indicating a lack of furniture options.

All gibbon enclosures had concrete floors, whilst the slow loris enclosure had a wire mesh/hard wooden floor, both of which are detrimental to welfare. All of the concrete floors were poorly drained and covered in substantial algal growth.

All enclosures lacked private areas. The smallest gibbon enclosure lacked sufficient and effective shelter.

All of the gibbon enclosures had rusty parts and fixtures, posing a safety hazard. Some loose wire was observed sticking up inside the slow loris enclosure.



Visitors could easily touch the gibbons.

All of the enclosures lacked sufficient enrichment. The smallest gibbon enclosure contained no enrichment at all.

The gibbon enclosures were situated near speakers which played loud music for the duration of our visit.

Visitors could easily touch all of the gibbons through the wire mesh of their cages, and many visitors were observed touching and teasing the gibbons. Visitors could touch the wire mesh sides of the slow loris cage between the bamboo poles, and so potentially touch the lorises themselves. This posed serious safety, zoonoses, and animal welfare concerns.

Visitors were allowed to feed bananas to the gibbons, and this appeared to be unregulated. Such unregulated feeding could result in health problems for the gibbons.

The water bowl for the slow lorises was dirty and covered in algae. The water bowls for the gibbons and the slow lorises were inappropriately placed on the floors of their cages- these arboreal primates rarely come to the ground in the wild, and in captivity should be provided with elevated feeding and watering stations.



Visitors were allowed to feed the gibbons.

Behaviour

All of the gibbons were observed sitting or lying on the ground, a highly unnatural behaviour.

Recommendations short-term

- Create a quieter environment by stopping the playing of music over speakers near to the animal enclosures. Install signs at every enclosure and around the zoo urging visitors to be quiet.
- Provide more space- additional surface area can be created by the provision of more structures and furniture in the enclosures.
- Provide additional shelter for the smallest gibbon enclosure.
- Provide more furniture for climbing and more furniture high up in the enclosures, preferably including trees and/or vegetation. Provide suitable sleeping/resting areas for all individuals.
- Provide the gibbons with more opportunities for brachiation.
- Provide areas of soft substrate (e.g. woodchips, soil, grass and/or sand) in all of the enclosures.

- Provide movable objects for play and manipulation.
- Establish a regular and varied behavioural enrichment programme, which stimulates all five of the animals' senses, to provide for the behavioural and psychological needs of the primates.
- Provide visual barriers and private areas where the primates can escape entirely from visitor view, the view of animals in neighbouring enclosures and each other, ensuring there is at least one private area per animal.
- Remove all rust from the cages. Remove all other dangerous items from the cages.
- Ensure that clean drinking water in clean receptacles is available for all animals at all times, and that the gibbons and lorises do not need to come to the floor to drink it.
- Install effective barriers to ensure visitors cannot touch the primates.
- Stop the unregulated feeding of the gibbons.



The loris enclosure had a dirty, poorly drained metal and wire mesh floor. The food was inappropriately placed in one place only and on the floor of the enclosure.

Recommendation long-term

- Move the gibbon and lorises to much larger, naturalistic enclosures. The enclosures they were housed in at the time of this survey were substandard.

Leopard enclosure

1: Worst; 2: Poor; 3: Average; 4: Good; 5: Best

Item	Ventilation	Lighting	Noise
Average	3.00	4.00	4.00

Item	Shelter	View	Substrate	Enclosure condition
Average	4.00	3.00	1.00	3.00

Item	Amount of litter	Drainage	Furniture	Enrichment
Average	3.00	1.00	2.00	2.00

Item	Social grouping	Private areas	Public contact	Size
Average	5.00	1.00	2.00	2.00

Average score: 2.67

The animals

The zoo housed at least one leopard.

The enclosures and husbandry

The leopard was housed in an old-fashioned style cage. The cage was too small to allow for significant movement and many natural behaviours.

The entire floor was concrete, poorly drained with areas of algal growth.

The enclosure lacked sufficient furniture, especially for climbing. Elevated furnishings that exploit available vertical space are recommended for leopards. The water pool provided was small and did not allow for proper bathing or swimming.



The leopard was housed in a small, old-fashioned style cage.

The only enrichment in the enclosure was a few plants and there were no private areas.

Although there was a barrier in place, this could be easily breached, and visitors were observed placing cameras very close to the bars. One visitor was observed holding a baby up to the bars. This ease at which visitors could reach through the barrier posed an extreme safety hazard, as well as a risk of zoonoses spread and animal welfare concerns.



Visitors could easily breach the barrier around the leopard enclosure.

Behaviour

The leopard was observed performing stereotypic pacing behaviour.

Recommendations short-term

- Install signs at every enclosure and around the zoo urging visitors to be quiet.
- Provide more space- additional surface area can be created by the provision of more structures and furniture in the enclosures.
- Provide areas of soft substrate (e.g. woodchips, soil, grass and/or sand).
- Provide more furniture for climbing, resting platforms that are not made of concrete (e.g. wooden resting platforms) and trees/ more vegetation in the enclosures. Provide more elevated furniture high off the ground and proper sleeping/resting areas.
- Provide movable objects for play and manipulation.
- Establish a regular and varied behavioural enrichment programme, which stimulates all five of the animals' senses, to provide for the behavioural and psychological needs of the leopard.
- Provide visual barriers and private areas where the leopard can escape entirely from visitor view.
- Ensure the enclosure is well-drained.
- Install effective barriers to prevent visitors from being able to make contact with the leopard.

Recommendation long-term

- Move the leopard to much larger, naturalistic enclosure. The enclosure the leopard was housed in at the time of this survey was substandard.

Small mammal enclosures

1: Worst; 2: Poor; 3: Average; 4: Good; 5: Best

Item	Ventilation	Lighting	Noise
Average	3.00	4.00	3.33

Item	Shelter	View	Substrate	Enclosure condition
Average	3.00	3.00	1.00	1.00

Item	Amount of litter	Drainage	Furniture	Enrichment
Average	3.00	1.00	2.00	1.00

Item	Social grouping	Private areas	Public contact	Size
Average	3.67	1.33	1.00	2.00

Average score: 2.22

The animals

The zoo housed at least two binturongs, one Asian small-clawed otter and three smooth-coated otters, in three cages.

The enclosures and husbandry

All of the small mammals mentioned above were housed in small, old-fashioned style cages. All of the animals would benefit from much larger enclosures. The Asian small-clawed otter was inappropriately housed alone.

Both otter enclosures had fully concrete floors, with no areas of soft substrate. Both floors were poorly drained and covered in substantial algal growth. The binturong enclosure had a wire mesh floor, which was partially covered by a wooden board.

All of the enclosures lacked sufficient furniture. The binturong enclosure lacked elevated furnishings for this arboreal species, and contained no vegetation. The Asian small-clawed otter cage lacked sufficient effective shelter. Both otter enclosures contained very small pools only- the Asian small-clawed otter's pool was approximately 1.2m x 0.5m. Otters need to be able to swim extensively as a basic need, but the pools in the otter enclosures did not allow for any extensive swimming.

None of the enclosures contained enrichment.

The binturong and Asian small-clawed otter enclosures lacked any private areas, whilst the smooth-coated otter enclosure had one small private area which could accommodate just one otter at a

time.

All of the enclosures had large areas of rust, posing a safety hazard. All enclosures also had potentially harmful areas of loose wire or wire mesh.

Visitors could easily touch the small mammals through the bars, as no barriers were in place. This ease at which visitors could touch the animals posed safety, zoonoses and animal welfare concerns.

Behaviour

The Asian small-clawed otter appeared agitated and desperate for attention. He was calling constantly and repeatedly reaching out of the cage when visitors came close.



This binturong enclosure contained little furniture, no vegetation and a wire mesh floor.



The small-clawed otter had just this small, shallow pool of water to swim in.

Recommendations short-term

- Install signs at every enclosure and around the zoo urging visitors to be quiet.
- Provide more space- additional surface area can be created by the provision of more structures and furniture in the enclosures.
- Provide large areas of soft substrate (e.g. woodchips, soil, grass and/or sand) in all of the enclosures.
- Provide more furniture and vegetation for both the otters and the binturongs. For the binturongs, this should include furniture for climbing, more resting platforms, wide branches and preferably trees.
- Provide movable objects for play and manipulation.
- Establish a regular and varied behavioural enrichment programme, which stimulates all five of the animals' senses, to provide for the behavioural and psychological needs of the animals.
- Provide visual barriers and private areas where the animals can escape entirely from visitor view, the view of animals in neighbouring enclosures and each other, ensuring there is at least one private area per animal.
- Ensure all enclosures are well-drained.
- Remove all rust from the enclosures.
- Install effective barriers to prevent visitors from being able to make contact with the animals.
- Relocate the Asian small-clawed otter to another facility where he/she can live with other otters in an appropriate environment.



This small clawed otter was inappropriately housed alone and appeared desperate for stimulation.

Recommendation long-term

- Move the otters and binturongs to much larger, naturalistic enclosures as a matter of urgency. The enclosures they were housed in at the time of this survey were grossly substandard.

3.4 Mini Zoo Kuala Lipis

Introduction

The survey of Mini Zoo Kuala Lipis took place on 16th June 2010.

Mini Zoo Kuala Lipis is a small zoo situated near the town of Kuala Lipis, that houses a number of native Malaysian mammals as well as several birds and some reptiles.



Overall, the conditions at the zoo remained largely unchanged from what was observed and recorded during our 2009 survey, although the enclosures appeared to be in a worse state of disrepair and hygiene and had more algal growth.

The zoo appeared to have acquired another adult Malayan sun bear and a new Malayan sun bear cub since our previous survey.

Enclosures surveyed

- Four pig-tailed macaque enclosures (5 animals).
- One long-tailed macaque enclosure (1 animal).
- One dusky langur enclosure (1 animal).
- One slow loris enclosure (1 animal).
- One pygmy marmoset enclosure (1 animal).
- Five Malayan sun bear enclosures (5 animals).
- One leopard cat enclosure (2 animals).
- Two binturong enclosures (2 animals).
- One common palm civet enclosure (3 animals).
- One masked palm civet enclosure (2 animals).
- One Malayan civet enclosure (1 animal).
- One Asian small-clawed otter enclosure (2 animals).
- One Malayan porcupine enclosure (3 animals).
- One Prevost's squirrel enclosure (2 animals).
- One ferret enclosure (1 animal).

Overall results

1: Worst; 2: Poor; 3: Average; 4: Good; 5: Best

Item	Ventilation	Lighting	Noise
Average	3.17	4.13	2.57

Item	Shelter	View	Substrate	Enclosure condition
Average	2.65	2.87	1.13	1.09

Item	Amount of litter	Drainage	Furniture	Enrichment
Average	2.87	1.70	1.87	1.13

Item	Social grouping	Private areas	Public contact	Size
Average	3.17	1.22	1.57	1.78

Overall average score: 2.19

Kuala Lipis Mini Zoo failed to meet the acceptable standards for the well-being of the focus animals. All of the enclosures were of outdated small cage, pit-style or vivarium-style design. Many of the enclosures were in a state of disrepair and the welfare of the animals was severely compromised due to substandard living environments and poor husbandry practices.

All of the enclosures surveyed failed to meet most of the acceptable standards in Section 2.3.

The zoo should not acquire additional animals and should instead focus on making housing and welfare improvements that benefit the animals in the existing collection.

The main areas of concern were:

1. Excessive noise. 69.9 percent of enclosures failed to meet the animals' needs in terms of noise. Many of the enclosures were situated near to a staff house, where a television was playing loudly for the duration of our visit. The marmoset enclosure was even situated within this staff house.

2. Failing to provide sufficient shelter. Some animals, including most of the bears and a pig-tailed macaque, had no shelter at all, while others had inadequate shelters.
3. Failing to provide soft substrates. All enclosures, except one, had a concrete or wire mesh floor and lacked any soft substrates. 95.7 percent of enclosures failed to provide an appropriate substrate.
4. Failing to provide a safe living environment. 100 percent of the enclosures failed to provide a safe living environment. Most enclosures were in a state of disrepair and had large areas of rust and rusted fixtures. Many enclosures contained other dangerous items, such as loose, sharp pieces of metal wire, broken and loose wire mesh and broken concrete flooring. Some enclosures contained litter.
5. Failing to provide a well-drained enclosure. 78.3 percent of enclosures failed to provide a well-drained environment. All of the concrete floors had algal growth over them; in most cases this was extensive.
6. Failing to provide sufficient species-specific furniture. 95.7 percent of enclosures failed to provide sufficient furniture. Some animals, including some of the bears and a pig-tailed macaque, had no furniture at all. Where furniture was present, it was minimal and inadequate. Few animals were provided with suitable, species-specific furniture.
7. Failing to provide species-specific enrichment. None of the enclosures contained sufficient enrichment. Most of the animals had no enrichment at all. Only three animals had any sort of enrichment, but this was limited and/or not appropriate to the species.
8. Failing to house animals in appropriate social groupings. In 43.5 percent of enclosures animals were housed in inappropriate social groups. Several sociable animals, including pig-tailed macaques, a dusky langur and a pygmy marmoset, were inappropriately housed alone.
9. Failing to provide sufficient private areas. 91.3 percent of enclosures failed to provide sufficient private areas. The animals were unable to remove themselves from the view of cagemates, animals in adjoining enclosures and visitors. Only two enclosures contained private areas.
10. Failing to ensure that visitors could not touch the animals. For 87 percent of the enclosures, visitors could easily touch the animals, even when barriers were in place. This posed serious safety, zoonoses, and animal welfare concerns.

11. Failing to provide sufficient space. All enclosures were too small to encourage most natural behaviours in the species they housed. Some enclosures were so undersized, animals were barely able to achieve normal postural adjustments. For example, one pig-tailed macaque enclosure was less than 1m x 1m x 1m in size, and a young bear was housed in a cage 1.5m x 1m x 1.2m. Large adult bears were housed in cages measuring only 1m wide and 4m long.
12. Failing to provide clean drinking water. Several animals had no drinking water whatsoever, while others had access to dirty drinking water. Many water receptacles were dirty and algae-coated.
13. Failing to provide a hygienic environment. Many of the enclosures had old food on the floors and an excessive accumulation of faeces. Many pools contained dirty water. Large numbers of flies and rats were observed inside and around many of the enclosures. The hosing out the bear cages from above is an ineffective method of cleaning.
14. The otters and porcupines were housed in pit-style enclosures, which are totally unsuitable living environments.
15. Failing to provide a suitable diet. Rice was observed on the floors of many enclosures, indicating that this was fed to a number of the animals. In addition to not being a suitable foodstuff for these animals, it was observed being fed directly on dirty, algal covered floors, which could lead to health problems for the animals.
16. Several of the animals displayed stereotypic behaviours, indicating that the animals were currently living in or had been exposed to a substandard environment.
17. Some new enclosures were being built, but these appeared to be very small, approximately 2m x 1.5m x 1.8m in size.

Primate enclosures

1: Worst; 2: Poor; 3: Average; 4: Good; 5: Best

Item	Ventilation	Lighting	Noise
Average	3.38	3.88	2.38

Item	Shelter	View	Substrate	Enclosure condition
Average	3.13	3.00	1.00	1.00

Item	Amount of litter	Drainage	Furniture	Enrichment
Average	2.75	2.13	1.88	1.25

Item	Social grouping	Private areas	Public contact	Size
Average	1.75	1.25	1.38	1.88

Average score: 2.13

The animals

The zoo housed at least four pig-tailed macaques, one long-tailed macaque, one dusky langur, one slow loris and one pygmy marmoset, in eight enclosures.

Three of the pig-tailed macaques, the long-tailed macaque, the dusky langur and the pygmy marmosets were inappropriately housed alone, which is highly detrimental to the welfare of these social animals.

The enclosures and husbandry

All of the primates were housed in small, old-fashioned style cages.



This pig-tailed macaque was housed alone in an extremely small wire mesh cage, with no shelter or drinking water.

The enclosures were grossly undersized and did not allow the animals to express most of their natural behaviours, especially the pig-tailed macaque who was housed in a cage measuring less than 1m x 1m x 1m.

This pig-tailed macaque had the worst living conditions of all: A tiny barren cage with no shelter, furniture, water, enrichment or private areas, and an uncomfortable wire mesh floor. His cage was situated in an area strewn with rubbish and infested with rats and flies. Much of his food had fallen through the wire mesh floor, making it inaccessible to him and creating an even more unhygienic environment.



Primates such as this langur were housed in small, rusty cages which were in a state of disrepair.

All of the other primate enclosures lacked sufficient furniture; mostly they contained just a few narrow branches or tree stumps. None contained any elevated furnishings for these arboreal animals who often (and in the case of the slow loris and marmoset, always) inhabit trees. None of the enclosures contained any vegetation.

All enclosures had either concrete or wire mesh floors, which are detrimental to welfare. All of the concrete floors were poorly drained and covered in algal growth.

Only the slow loris enclosure contained a private area, the rest of the primate enclosures had no private areas at all.

The enclosures were all in a state of disrepair with extensive rusty parts and fixtures which posed a safety hazard. The floors of the slow loris and marmoset cages were entirely rust covered. Most of the enclosures also contained loose sharp bits of metal wire, loose pieces of wire mesh and protruding rusty nails. One pig-tailed macaque enclosure, housing a young macaque and mother, contained a frayed rope, which animals, especially young primates, could easily become entangled in. Two of the macaque enclosures contained litter.

The only enrichment observed was a tyre in the dusky langur cage. None of the other enclosures contained any enrichment.

Lack of hygiene was a serious problem. The floor of one pig-tailed macaque enclosure was covered in old food and flies. A dead lizard on the floor of the marmoset enclosure was rotting and covered in ants. The dusky langur cage was situated in a dirty area of the zoo full of rubbish and infested with rats and flies. Food appeared to be fed directly on dirty floors, which could result in contamination and health issues for the primates.



The primate enclosures at Kuala Lipis Mini Zoo were wholly substandard.

Three of the pig-tailed macaque enclosures contained no drinking water, while the other had a tiny amount of filthy water. The long-tailed macaque had dirty water only, and the water bowl in the slow loris enclosure was filled with algae.

The marmoset enclosure was situated inside a staff house, whilst the long-tailed macaque enclosure, slow loris enclosure and one of the pig-tailed macaque enclosures were situated nearby. A television was playing loudly inside the staff house for the duration of our visit, potentially causing noise stress to these animals. The dusky langur and the pig-tailed macaque in the smallest cage were subject to loud noises from construction work.

Visitors could easily touch the primates, even when barriers were in place. The dusky langur cage even had holes cut into the wire mesh allowing the langur to reach out and be touched. The ease at which the primates could be touched posed serious safety, zoonoses, and animal welfare concerns.



This macaque enclosure had a dirty floor and only dirty drinking water available.

Behaviour

One of the pig-tailed macaques performed stereotypic neck-turning behaviour.

Recommendations short-term

- Provide more space - additional surface area can be created by the provision of more structures and furniture in the enclosures.
- Provide effective shelter for all of the primates.
- Provide more furniture for climbing and exploit the available vertical space by introducing elevated furnishings, preferably including trees and/or vegetation. Provide suitable sleeping/resting areas for all individuals.
- Provide large areas of soft substrate (e.g. woodchips, soil, grass and/or sand) in all of the enclosures.
- Provide movable objects for play and manipulation.
- Establish a regular and varied behavioural enrichment programme, which stimulates all five of the animals' senses, to provide for the behavioural and psychological needs of the primates.
- Provide visual barriers and private areas where the animals can escape entirely from the view of visitors, animals in neighbouring enclosures and each other, ensuring there is at least one private area per animal.
- Remove all rust from the cages. Remove all other dangerous items from the cages.
- Ensure that the enclosures are cleaned at least twice a day and that areas surrounding the enclosures and throughout the zoo are clean.
- Ensure that all of the primates have access to clean, fresh water at all times.
- Present food in elevated feeding stations in multiple locations, and use scatter feeding in the substrate, to encourage natural foraging behaviour.
- Install effective public stand-off barriers to prevent visitors from making contact with the primates.



The slow loris enclosure was extremely small.

- Install signs around the enclosures informing people to not throw litter into or around the enclosures, or anywhere around the zoo.
- Move the staff television to an area where it will not disturb the animals.
- Remove the pig-tailed macaque from the smallest cage as a matter of urgency. It is totally unacceptable to house an animal in this way.
- House the pig-tailed macaques together, at least in pairs, and ensure that they do not breed.



This macaque enclosure was featureless and had a fully concrete floor.

Recommendations long-term

- Move the primates to much larger, naturalistic enclosures as a matter of urgency. The enclosures they were in at the time of this survey were entirely substandard.
- If possible, move the long-tailed macaque, dusky langur and pygmy marmoset to other facilities with high welfare standards and suitable living conditions where they can live together with others of their kind.

Bear enclosures

1: Worst; 2: Poor; 3: Average; 4: Good; 5: Best

Item	Ventilation	Lighting	Noise
Average	3.00	4.00	3.60

Item	Shelter	View	Substrate	Enclosure condition
Average	1.40	3.00	1.00	1.00

Item	Amount of litter	Drainage	Furniture	Enrichment
Average	3.00	1.20	1.40	1.00

Item	Social grouping	Private areas	Public contact	Size
Average	4.20	1.00	1.00	1.40

Average score: 2.08

The animals

The zoo housed at least four adult or young adult Malayan sun bears and one cub in five enclosures.

The cub was young and should have been with his mother.

Some bald patches were noticed on the cub's head. The youngest of the other bears had a wound over one eye, while an adult bear had lesions or wounds on their face.



This Malayan sun bear had lesions or wounds on the face.

The enclosures and husbandry

The bear cub was kept in a very small cage, only 1.5m x 1m x 1.2m in size, which barely allowed for any movement at all. The cub had no shelter, furniture, enrichment or private areas and the cage had a hard, rusted metal floor that was poorly drained, wet and covered in rice. The cage was situated in a filthy area,

strewn with rubbish and infested with rats and flies. Noise from nearby construction was a potential source of stress for the cub.

All of the other Malayan sun bears were housed in cages. All were housed alone. Two of the bears were in exceptionally small cages, only 1m x 4m x 4m, which were situated within the other two, larger bear cages. Every enclosure was undersized and did not allow for significant movement or most natural behaviours. The bears had little visual stimulation due to high walls on three sides of their cages.



This Malayan sun bear cub was housed alone in this exceptionally small, rusty cage.

The enclosures all had concrete floors, with no areas of soft substrate. The floors of the enclosures were poorly drained and covered with substantial algal growth.

The bears in the two small cages within the larger cages had no shelter and one of them was observed panting excessively.

The bears in the smaller cages had no furniture. The two larger bear enclosures each contained a pool, but these were empty and did not appear to have been filled for some time as they were full of dirt. One of the larger enclosures had some narrow rusty metal poles positioned close to the ground, but this was the only furniture. The other bear enclosure contained no furniture.



This Malayan sun bear was confined in an extremely small, barren cage within a larger cage, with no shelter or drinking water.

All of the bear enclosures lacked enrichment and private areas.

None of the bears had access to drinking water.

All of the enclosures contained rusted parts that posed a health hazard to the animals. One enclosure also contained harmful rusty metal poles and hanging rust-covered chains, which the bear could get caught in.

Visitors could easily touch all of the bears through the cage bars. This posed serious safety, zoonoses and animal welfare concerns.

Rice was observed on the floor of one of the enclosures and in the bear cub cage, suggesting that the bears were fed rice. Rice is not a suitable food for bears.

The enclosure cleaning involved hosing them out from above. This was an ineffective method of cleaning as the enclosures were still dirty afterwards. The keeper sprayed the bears with water from the hose as she was cleaning, and the bears were observed desperately trying to drink the water from the hose, as they had no water in their enclosures.

Behaviour

Three of the bears displayed stereotypic pacing behaviour, whilst the other displayed stereotypic bar biting behaviour. Two of the bears were seen hanging from the bars at the top of the cages and reaching out, apparently begging.



The floors of the bear enclosures were filthy and covered in algal growth.



This bear exhibited stereotypic bar biting behaviour.

Recommendations short-term

- Remove the cub from the small cage as a matter of urgency. The living conditions for the cub at the time of this survey were totally unacceptable.
- If possible, move the bears from the small cages into the main cages and house them in pairs, but prevent the bears from breeding where necessary.
- Provide more space- additional surface area can be created by the provision of more structures and furniture in the enclosures.
- Provide areas of soft substrate (e.g. woodchips, soil, grass and/or sand).
- Provide furniture for climbing, resting platforms that are not made of concrete (e.g. wooden resting platforms) and trees/vegetation. Provide suitable sleeping/resting areas for all individuals.
- Ensure that the pools are clean and filled with water at all times to allow the bears to bathe.
- Provide movable objects for play and manipulation.
- Establish a regular and varied behavioural enrichment programme, which stimulates all five of the animals' senses, to provide for the behavioural and psychological needs of the bears.
- Provide visual barriers and private areas where the bears can escape entirely from visitor view, the view of animals in neighbouring enclosures and each other, ensuring there is at least one private area per animal.
- Ensure the enclosures are well-drained.
- Remove all rust from the enclosures, and any other harmful items.
- Ensure the enclosures are cleaned effectively at least twice a day.
- Ensure the bears have clean drinking water at all times, other than the pool water.



All of the bears at Kuala Lipis Mini Zoo were housed in inappropriate, impoverished environments.

Recommendation long-term

- Move the bears to much larger, naturalistic enclosures as a matter of urgency. The enclosures they were housed in at the time of this survey failed completely to satisfy their needs.

Small mammal enclosures

1: Worst; 2: Poor; 3: Average; 4: Good; 5: Best

Item	Ventilation	Lighting	Noise
Average	3.10	4.40	2.20

Item	Shelter	View	Substrate	Enclosure condition
Average	2.90	2.70	1.30	1.20

Item	Amount of litter	Drainage	Furniture	Enrichment
Average	2.90	1.60	2.10	1.10

Item	Social grouping	Private areas	Public contact	Size
Average	3.80	1.30	2.00	1.90

Average score: 2.30

The animals

The zoo housed at least two leopard cats, two small-clawed otters, two binturongs, two masked palm civets, three common palm civets, one Malay civet, three Malayan porcupines, two Prevost's squirrels and one ferret, in ten enclosures.

One of the binturongs had bald patches on his head, which appeared to be old wounds.



Small mammals were housed in small, unsuitable enclosures that were in a state of disrepair, such as this civet enclosure.

The enclosures and husbandry

All of the small mammals were housed in small cages, pits or vivariums. All of the animals would benefit from much larger enclosures. One of the binturong cages was exceptionally small, measuring approximately 2.5m x 1.2m x 1.2m.



This small, featureless enclosure with a wire mesh floor was totally unsuitable for the binturong it housed.

The otters, common palm civets and porcupines were housed in pit-style enclosures that almost entirely eliminated visual stimulation for them as they could not see outside.

All of the enclosures, except the leopard cat enclosure, were situated near to a staff house, where a television was playing loudly for the duration of our visit, creating a potentially stressful, noisy environment.

Many of the enclosures did not contain effective shelter or sufficient shelter for the number of animals inside.

Only the otter enclosure contained soft substrate - all of the other enclosures had concrete, hard or wire mesh floors, which are detrimental to animal welfare, and no areas of soft substrate. All concrete floors were poorly drained and covered in algal growth.



These civets had nowhere to rest high up and were forced to lie on a dirty, algae-covered concrete floor.

The Prevost's squirrel contained a sufficient amount of furniture, although it would benefit from more vegetation and furniture high up. All of the other enclosures lacked sufficient furnishings appropriate for each particular species. Most contained just narrow branches and planks. Some had small resting platforms, but most had no resting/sleeping areas at all. Most enclosures

were barren. None contained trees or vegetation, despite the fact that most of these small mammals are tree-dwelling species. The binturong and civets, who live high in the trees in the wild, had no furniture high up. They had nothing resembling a tree or a branch to rest on. They were observed lying on the ground, something they would not do in the wild. The otters had a small shallow pool that did not allow them to engage in normal swimming behaviours.

None of the enclosures contained any enrichment, except for the Prevost's squirrel enclosure which contained some vegetation.

Only the otter and Prevost's squirrel enclosures contained private areas; the rest of the enclosures had none.

Some enclosures abutted or were joined to neighbouring enclosures, so it was difficult for the animals to escape from the view of each other.

Nearly every enclosure was in a state of disrepair. All cages contained significant rusty areas and parts that were potentially hazardous to animals. The entire wire mesh floor of the ferret enclosure was rusted. A bowl in the masked palm civet enclosure and the feeding receptacle in the porcupine enclosure were also rusty. Many enclosures contained loose bits of sharp metal wire and/or loose areas of wire mesh with sharp ends. A number of concrete floors were broken, especially in the porcupine enclosure, which contained large areas of broken and loose concrete. The leopard cat and Prevost's squirrel enclosures contained protruding nails. The porcupine enclosure contained litter. Poor hygiene was a concern for the small mammals. The leopard cat and one of the binturong enclosures were very dirty and contained mouldy leaves, indicating that they had not been cleaned properly for some time. The otter pool contained dirty water, and there were fly-covered pieces of fish on the floor. Old fly-covered food was scattered on the floor of the masked palm civet and porcupine enclosures.



The concrete floor of this porcupine enclosure was broken, with many sharp pieces of concrete lying around.

The porcupines and ferret had no drinking water. The common palm civets and Prevost's squirrels had dirty drinking water only- the water bowl in the common palm civet enclosure was almost empty and full of faeces.

Visitors could easily touch many of the small mammals, visitors could easily touch them. This posed serious safety, zoonoses and animal welfare concerns. The binturong enclosure was unlocked.



The porcupines' feeding tray was completely rusted.

Behaviour

One of the leopard cats exhibited stereotypic pacing behaviour.

Recommendations short-term

- Provide more space- additional surface area can be created by the provision of more structures and furniture in the enclosures.
- Provide large areas of soft substrate (e.g. woodchips, soil, grass and/or sand) in all of the enclosures.
- Provide furniture for climbing, resting platforms that are not made of concrete (e.g. wooden resting platforms) and trees/vegetation. Provide furniture high in the enclosures for the binturong, civets and leopard cats. Provide suitable sleeping/resting areas for all individuals. Provide a larger, deeper pool for the otters.
- Provide movable objects for play and manipulation.
- Establish a regular and varied behavioural enrichment programme, which stimulates all five of the animals' senses, to provide for the behavioural and psychological needs of the animals.
- Provide visual barriers and private areas where the animals can escape entirely from visitor view, the view of animals in neighbouring enclosures and each other, ensuring there is at least one private area per animal.
- Ensure all enclosures are well-drained.
- Remove all rust and harmful items from the enclosures.
- Ensure all enclosures are cleaned properly at least twice a day.
- Ensure all animals have clean drinking water and that drinking receptacles are clean and free of algae.
- Ensure all food bowls are clean and free of rust. As far as possible, spread food around enclosures to encourage natural foraging behaviour.
- Install effective barriers to prevent visitors from being able to make contact with the animals.
- Erect signs informing people to not throw litter in or around the enclosures, or anywhere on the zoo grounds.
- Move the staff television to an area where it will not disturb the animals.



A small, barren civet cage, in a state of disrepair.

Recommendation long-term

- Move all of the animals to much larger, naturalistic enclosures. The enclosures they were housed in at the time of this investigation were wholly substandard. The smallest binturong enclosure was especially unsuitable and detrimental to the animal's welfare. The binturong needs to be moved from this environment as soon as possible.

3.5 Mini Zoo Taman Teruntum

Introduction

The survey of Mini Zoo Taman Teruntum took place on 18th June 2010.

Mini Zoo Taman Teruntum is set in Teruntum Park and has no entrance fee. The zoo had a small collection of native mammals, as well as some birds and reptiles.

Overall, the conditions at the zoo, including it being in a state of disrepair, remained unchanged from what was observed and recorded during our 2009 survey. The only noticeable change was the installation of several public stand-off barriers at some of the enclosures. Unfortunately these barriers were ineffective and could be easily breached.



Enclosures surveyed

- One white-handed gibbon enclosure (2 animals).
- One slow loris enclosure (1 animal).
- One Malayan sun bear enclosure (2 animals).
- One leopard cat enclosure (2 animals).
- One binturong enclosure (1 animal).
- One common palm civet enclosure (3 animals).
- One smooth-coated otter enclosure (1 animal).
- One small-clawed otter enclosure (6 animals).
- One Malayan porcupine enclosure (2 animals).

Overall results

1: Worst; 2: Poor; 3: Average; 4: Good; 5: Best

Item	Ventilation	Lighting	Noise
Average	3.44	4.33	3.22

Item	Shelter	View	Substrate	Enclosure condition
Average	3.11	3.11	2.22	1.22

Item	Amount of litter	Drainage	Furniture	Enrichment
Average	2.44	1.00	1.89	1.89

Item	Social grouping	Private areas	Public contact	Size
Average	4.44	1.11	2.44	2.33

Overall average score: 2.55

Mini Zoo Taman Teruntum failed to meet the acceptable standards for the well-being of the focus animals. All of the enclosures were of outdated cage or pit-style design, which are detrimental to animal welfare. The welfare of the animals was severely compromised due to substandard living environments and poor husbandry practices.

All of the enclosures surveyed failed to meet most of the acceptable standards in Section 2.3.

The zoo should not acquire additional animals and should focus instead on making improvements that enhance the welfare of the animals already living at the facility.

The main areas of concern were:

1. Failing to provide sufficient soft substrates. 66.7 percent of enclosures failed to provide appropriate substrates. Most floor surfaces were concrete and there were few soft substrate areas.
2. Failing to provide a safe living environment. All of the enclosures failed to provide a safe living environment. All of the cages contained large areas of rust, whilst the pit-style enclosures contained areas of broken concrete.
3. 44.4 percent of the enclosures contained litter.
4. Failing to provide a well-drained enclosure. All of the enclosures surveyed had extensive algal growth on the floors, and many had wet floors or pools of standing water.
5. Failing to provide sufficient species-specific furniture. All of the enclosures failed to provide sufficient furniture. While some furnishings were present in most enclosures, they were simplistic, not species-appropriate, largely non-functional and minimal in number. The Malayan sun bears, who naturally live in forests, had no trees or vegetation and no high furniture to climb and rest in. The porcupines had no furniture at all.
6. Failing to provide species-specific enrichment. All of the enclosures failed to provide sufficient enrichment. The only enrichment observed was some vegetation in some enclosures, some hanging baskets and a bamboo pole in the gibbon enclosure, a wooden swing in the bear enclosure and some balls in the smooth otter enclosure.
7. Failing to provide sufficient private areas for animals to escape from visitor view, the view of animals in neighbouring enclosures and each other. All of the enclosures failed to provide sufficient private areas. Only the Asian small-clawed otter enclosure provided private areas, but these were limited in number.
8. Failing to ensure that visitors could not touch the animals. For 66.7 percent of the enclosures, visitors could easily touch the animals, even when barriers were in place. This posed a serious safety concern, as well as a zoonoses and animal welfare concern.
9. Failing to provide sufficient space. Most of the enclosures surveyed were far too small to encourage most natural behaviours for the species they housed. 66.7 percent of enclosures were insufficient in size.

10. Failing to provide a hygienic environment. Many of the water receptacles contained dirty water and old food. Old food and faeces on many enclosure floors had attracted large numbers of flies.

Primate enclosures

1: Worst; 2: Poor; 3: Average; 4: Good; 5: Best

Item	Ventilation	Lighting	Noise
Average	3.50	4.00	3.50

Item	Shelter	View	Substrate	Enclosure condition
Average	3.50	3.00	2.50	1.00

Item	Amount of litter	Drainage	Furniture	Enrichment
Average	3.00	1.00	2.00	2.00

Item	Social grouping	Private areas	Public contact	Size
Average	5.00	1.00	2.00	2.00

Average score: 2.60

The animals

The zoo housed at least two white-handed gibbons and one slow loris, in two enclosures.

The enclosures and husbandry

The gibbons and the loris were housed in cages.

Both cages were too small and did not allow the animals to exhibit many of their natural behaviours, especially for the gibbons.

Both primate enclosures lacked sufficient furniture, including elevated structures and materials that would allow the gibbon to brachiate and perch high off the floor.



This slow loris was housed in a small, extremely rusty cage, with a concrete floor covered in algae.

Most of the time, the gibbons were observed hanging and/or swinging from the cage sides, indicating a lack of furniture options that would allow them to engage in other movements and behaviours. Neither enclosure contained suitable sleeping and resting areas.

The slow loris enclosure had a poorly drained concrete floor that was covered in substantial algal growth and that was flooded in places with water overflowing from the pool in the otter enclosure next door.

Both enclosures lacked private areas. The slow loris enclosure was situated next to a playground, which could be noisy at times.

Both enclosures had large areas of rust, posing a potential health and safety hazard. Some loose wire mesh and sharp wire ends were seen sticking up inside the slow loris enclosure. Inside the gibbon enclosures there were some sharp concrete edges, and also a loose narrow horizontal rope, which posed an entanglement and hanging hazard to the gibbons.

Both enclosures lacked sufficient species- specific enrichment.

Visitors could easily touch the slow loris through the wire mesh of the cage. The gibbon enclosure public stand-off barrier could be easily breached, and visitors were observed crossing it to stand closer to the cage to touch the gibbons, even when a keeper was inside the enclosure. The keeper did nothing to prevent the visitors from touching the gibbons. This is a safety, zoonoses, and animal welfare concern. The keeper left the door of the gibbon cage open



The gibbon enclosure was rusted in places.



Visitors could easily breach barriers and touch the gibbons, and did so in full view of a keeper who did nothing to prevent them from doing so.

for several seconds after he had finished cleaning inside, causing a potential opportunity for escape and a risk to public safety.

The water bowls for the gibbons and the slow lorises were inappropriately placed on the floors of their cages and most of the food for the gibbons was fed on a low platform. These arboreal primates rarely come to the ground in the wild, and in captivity should be fed and watered in elevated stations in multiple locations. The gibbon enclosure contained five bunches of bananas, far more than the gibbons could eat, and these were black, rotting and attracting flies.

Behaviour

The slow loris was observed sleeping on the floor- a highly unnatural behaviour for this relatively timid, arboreal primate.

Recommendations short-term

- Create a quieter environment for the slow loris by installing signs in the playground next to the loris enclosure urging visitors to be quiet.
- Provide more space- additional surface area can be created by the provision of more structures and furniture in the enclosures.
- Provide more furniture for climbing and more furniture high up in the enclosures, preferably including trees and/or vegetation. Provide suitable sleeping/resting areas for all individuals.
- Provide the gibbons with more opportunities for brachiation.
- Provide movable objects for play and manipulation.
- Establish a regular and varied behavioural enrichment programme, which stimulates all five of the animals' senses, to provide for the behavioural and psychological needs of the primates.
- Provide visual barriers and private areas where the animals can escape entirely from visitor view, the view of animals in neighbouring enclosures and each other, ensuring there is at least one private area per animal.
- Remove all rust and dangerous items from the cages.
- Provide elevated feeding and watering stations so the gibbons and lorises do not need to descend to the floor to eat or drink.
- Ensure that old food is not left in the enclosure for long periods and that enclosures are cleaned at least twice a day.
- Install effective public stand-off barriers to ensure that visitors cannot touch the primates.



This pig-tailed macaque could not interact with other macaques, and had no shelter.

Recommendation long-term

- Move the gibbon and lorises to much larger, naturalistic enclosures that provide complexity and stimulation and that exploit the available vertical space. The enclosures they were housed in at the time of this survey were grossly inadequate in all respects.

Bear enclosure

1: Worst; 2: Poor; 3: Average; 4: Good; 5: Best

Item	Ventilation	Lighting	Noise
Average	3.00	5.00	2.00

Item	Shelter	View	Substrate	Enclosure condition
Average	3.00	4.00	2.00	1.00

Item	Amount of litter	Drainage	Furniture	Enrichment
Average	1.00	1.00	2.00	2.00

Item	Social grouping	Private areas	Public contact	Size
Average	5.00	1.00	4.00	3.00

Average score: 2.40

The animals

The zoo housed at least two Malayan sun bears in one enclosure.

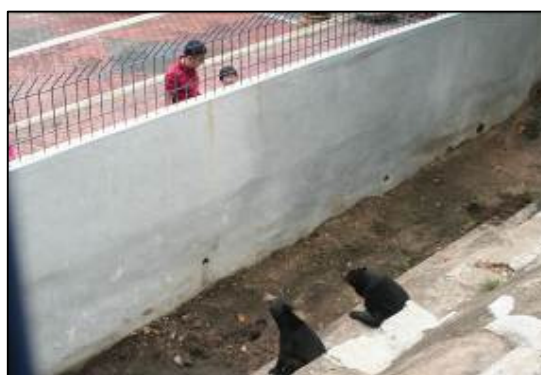
One bear had bald patches on their back.

The enclosures and husbandry

The bears were housed in a pit-style enclosure surrounded by high walls that severely hindered their ability to view outside.

The enclosure was situated next to a playground, which could be noisy at times.

The enclosure had a mostly concrete floor with a very small area of muddy substrate. The floor was poorly drained and covered in algal growth. There were also several piles of faeces.



The bears at Teman Teruntum Mini Zoo were housed in a pit-style enclosure.

The enclosure lacked sufficient furniture. There were just a few logs and branches and a small shallow pool. There were no functional elevated features, or climbing apparatus, trees or other vegetation for these forest-dwelling animals.

There was no species-specific enrichment provided, just a wooden swing structure.

Several areas of broken concrete posed a safety hazard. There were also many pieces of litter inside the enclosure, which could pose a serious hazard to the bears' health if ingested.

No private areas were provided for the bears.



The floor of the bear enclosure was dirty and covered in algae.



Left: The concrete floor of the enclosure was broken in several places. Right: The bear enclosure contained several pieces of litter.

Recommendations short-term

- Create a quieter environment for the bears by installing signs in the playground near to the enclosure urging visitors to be quiet.
- Provide more space- additional surface area can be created by the provision of more structures and furniture in the enclosure.
- Provide large areas of soft substrate (e.g. woodchips, soil, grass and/or sand).
- Provide structures and furniture for climbing, elevated perching stations, trees and vegetation. Provide suitable sleeping/resting areas.
- Provide visual barriers and private areas where the animals can escape entirely from visitor view, the view of animals in neighbouring enclosures and from cagemates, ensuring there is at least one private area per animal.
- Provide a larger water pool for the bears that allows them to submerge.
- Provide movable objects for play and manipulation.
- Establish a regular and varied behavioural enrichment programme, which stimulates all five of the animals' senses, to provide for the behavioural and psychological needs of the bears.
- Remove all the broken concrete and repair the enclosure where necessary.
- Ensure the enclosure is well-drained and cleaned at least twice a day. Ensure that pools are kept filled with clean water at all times and that the bears have an additional separate source of drinking water.
- Install signs around the cages informing people to not throw litter into or around the enclosures, or anywhere else on the zoo grounds.

Recommendation long-term

- Move the bears to a larger, naturalistic, open-concept enclosure. The enclosure they were in at the time of this survey was entirely substandard.

Small mammal enclosures

1: Worst; 2: Poor; 3: Average; 4: Good; 5: Best

Item	Ventilation	Lighting	Noise
Average	3.50	4.33	3.33

Item	Shelter	View	Substrate	Enclosure condition
Average	3.00	3.00	2.17	1.33

Item	Amount of litter	Drainage	Furniture	Enrichment
Average	2.50	1.00	1.83	1.83

Item	Social grouping	Private areas	Public contact	Size
Average	4.17	1.17	2.13	2.13

Average score: 2.52

The animals

The zoo housed at least one binturong, one smooth-coated otter, six small-clawed otters, two leopard cats, three common palm civets and two Malayan porcupines, in six enclosures.

One of the civets was missing most of their tail, presumably because it had been chewed off. The end of the tail stump was bloody and raw.



This civet's tail was badly damaged, with a raw, bloody end.

The enclosures and husbandry

The civets, smooth-coated otter and leopard cat were housed in small, old-fashioned style cages whilst the porcupines were housed in a very small pit-style enclosure. These animals would benefit from much

larger enclosures. The smooth-coated otter was inappropriately housed alone.

The civet and smooth-coated otter enclosures were situated next to a playground, which could be noisy at times.

The porcupine, smooth otter and civet enclosures had mostly concrete floors and just small areas of soft substrate. All of these animals would benefit from additional areas of soft substrate.



This old-fashioned pit-style porcupine enclosure has no place in a modern zoo.

The floor of every small mammal enclosure was poorly drained and covered in algal growth.

All of the enclosures lacked sufficient furniture. The binturong and civet enclosures lacked elevated furnishings and trees for these arboreal species. The civet and leopard cat enclosures lacked suitable resting areas. The Asian small-clawed otter enclosure lacked sufficient shelter. The smooth-coated otter enclosure lacked sufficient furniture and contained only two very small pools. Otters need to be able to swim extensively as a basic need, but the pools in the smooth-coated otter enclosures did not allow for any normal swimming behaviours.

Some enclosures, (e.g. porcupine) contained no enrichment, while others contained vegetation. The smooth-coated otter enclosure contained two balls and little else. Overall, species-specific enrichment was poor or absent.

All enclosures lacked private areas, except for the small-clawed otter enclosure which contained a few private areas, but not enough to accommodate all of the animals.

All of the enclosures were in a state of disrepair. All of the cage enclosures had large areas of rust, posing a safety hazard. The smooth-coated otter, civet and leopard cat enclosures had areas of loose wire mesh with sharp edges sticking into the enclosures, as well as sharp protruding wire pieces and metal bars. The leopard cat enclosure also contained a broken pipe. The small-clawed otter enclosure had several broken fixtures and areas of cracked concrete with sharp edges, as well

as frayed ropes which the otters could become entangled in. The binturong enclosure contained sharp concrete edges and also had sharp ends of metal bars sticking into the enclosure, as did the porcupine enclosure.

The porcupine, binturong and leopard cat enclosures all contained several pieces of litter.



The rusty civet enclosure was in a state of disrepair.

Poor hygiene was a widespread problem. The civet enclosure had a lot of old food over the floor and the drinking water was dirty. The enclosure was also fly infested. The floor of the smooth otter enclosure too was covered in old food, faeces and flies. The water in the pool of the small-



Left: The concrete floor of the porcupine enclosure was covered in old food and litter. Right: The floor of the leopard cat enclosure was poorly drained and covered in algae.

clawed otter enclosure was dirty. In the leopard cat enclosure, a water pool was filled with algae, and flies swarmed around meat on the floor.

For all of the small mammals except for the porcupines, visitors could easily touch them, even where barriers were in place. This ease at which visitors could touch the animals through the bars posed a safety hazard, and meant there was a risk of zoonoses spread, as well as an animal welfare concern.

Behaviour

The smooth-coated otter displayed stereotypic behaviour, running in a repetitive, circular route around the enclosure and pool.

Recommendations short-term

- Create a quieter environment for the civets and smooth-coated otter by installing signs in the playground near their enclosures urging visitors to be quiet.
- Provide more space- additional surface area can be created by the provision of more structures and furniture in the enclosures.
- Provide large areas of soft substrate (e.g. woodchips, soil, grass and/or sand) in all of the enclosures.
- Provide more furniture and vegetation for all the animals. For the binturongs and civets, this should include furniture for climbing, more resting platforms, wide branches and preferably trees.
- Provide movable objects for play and manipulation.
- Establish a regular and varied behavioural enrichment programme, which stimulates all five of the animals' senses, to provide for the behavioural and psychological needs of the animals.
- Provide visual barriers and private areas where the animals can escape entirely from visitor view, the view of animals in neighbouring enclosures and each other, ensuring there is at least one private area per animal.
- Remove all rust, broken concrete and other harmful items from the enclosures. Repair the enclosures where necessary.
- Install effective barriers to prevent visitors from being able to make contact with the animals.
- Ensure that all animals have access to clean drinking water at all times.
- Ensure all enclosures are well-drained and cleaned at least twice a day. Ensure that water pools contain clean water at all times and that the animals with bathing pools have a separate source of drinking water other than the pool.
- Install signs around the enclosures informing people to not throw litter into or around the cages, or anywhere around the zoo.

Recommendations long-term

- Relocate the smooth-coated otter to another facility that can provide a more appropriate physical and social environment.
- Move the civets and porcupines to much larger, naturalistic enclosures as a matter of urgency. The enclosures they were housed in at the time of this survey were substandard.

3.6 Kemaman Mini Zoo

Introduction

The survey of Kemaman Mini Zoo took place on 19th June 2010.

Kemaman Mini Zoo is advertised as a recreational facility and mini zoo. When the 2009 survey was conducted Kemaman Mini Zoo was newly built, covering fifty acres, and there were plans to expand the zoo to over 300 acres.

Overall, the conditions at the zoo remained unchanged from what was observed and recorded during our 2009 survey.



There was a new tiger enclosure housing two cats, and a second similar enclosure next to this. It appeared that additional new enclosures were being constructed. A white-handed gibbon was observed being led around the zoo on a leash. No gibbons were observed in 2009.

Elephants, which were observed being used for visitor rides in 2009, were no longer at the zoo.

Enclosures surveyed

- One slow loris enclosure (5 animals).
- One Malayan sun bear enclosure (2 animals).
- One tiger enclosure (2 animals).
- One leopard cat enclosure (1 animal).
- One Asian small-clawed otter enclosure (2 animals).
- One Malayan civet enclosure (2 animals).
- One common palm civet/small-toothed palm civet enclosure (1 common palm civet, 1 small-toothed palm civet).
- One Malayan porcupine enclosure (3 animals).
- One Asiatic brush-tailed porcupine enclosure (4 animals).
- One Prevost's squirrel enclosure (1 animal).

Overall results

1: Worst; 2: Poor; 3: Average; 4: Good; 5: Best

Item	Ventilation	Lighting	Noise
Average	3.00	3.40	2.40

Item	Shelter	View	Substrate	Enclosure condition
Average	3.30	2.80	4.10	1.60

Item	Amount of litter	Drainage	Furniture	Enrichment
Average	3.00	3.40	1.80	1.10

Item	Social grouping	Private areas	Public contact	Size
Average	4.30	1.40	1.50	2.20

Overall average score: 2.62

Kemaman Mini Zoo failed to meet the acceptable standards for the well-being of the focus animals, except for the tigers, whose enclosure achieved an overall pass score. Despite this being a new zoo, most of the enclosures were of outdated small cage or pit-style design, which are detrimental to animal welfare. The welfare of the majority of the animals was severely compromised due to the substandard living environments and poor husbandry practices.

All of the enclosures surveyed, except for the tiger enclosure, failed to meet most of the acceptable standards in Section 2.3.

The zoo should not acquire any additional animals and should focus instead on making housing and welfare improvements that benefit the animals in the current collection.

The main areas of concern were:

1. Excessively noisy environments. 80 percent of enclosures failed to provide a quiet environment. All of the small mammal enclosures (except the otter enclosure) were situated next to a construction site. Visitors, including many children, were able to

get very close to the enclosures and were observed making a lot of noise near the animals.

2. Failing to provide soft substrates in the bear and otter enclosures.
3. Failing to provide a safe living environment. 80 percent of enclosures failed to provide a safe living environment. Most of the cages contained large rusted areas. Some contained other dangerous items, such as broken concrete and broken tiles.
4. Failing to provide a well-drained enclosure. The bear and otter enclosures had extensive algal growth on the floors.
5. Failing to provide sufficient species-specific furniture. All of the enclosures failed to provide sufficient furniture, most often just a few narrow branches positioned low to the ground or small concrete tunnels. The bears and otters had no furniture except for small pools. There was a distinct lack of species-specific furniture. Tree dwelling animals, such as the civets, bears and lorises, had no high furniture to rest on and no vegetation in their enclosures.
6. Failing to provide species-specific enrichment. All of the enclosures failed to provide sufficient enrichment. Aside from the vegetation in the tiger enclosure, none of the enclosures contained any enrichment.
7. Failing to provide private areas for animals to escape from visitor view, the view of animals in neighbouring enclosures and each other. 80 percent of the enclosures failed to provide sufficient private areas. Only the otters and bears had private areas.
8. Failing to ensure that visitors could not touch the animals. For 80 percent of the enclosures, visitors could easily touch the animals, and no barriers were in place. This posed a serious safety concern and zoonoses risk, as well as posing animal welfare concerns.
9. Failing to provide sufficient space. Most of the enclosures surveyed were too small to encourage most natural behaviours for the species they housed. 80 percent of enclosures were insufficient in size.
10. Failing to provide a hygienic environment. Many of the enclosures had old food on the floors. The tiger and otter enclosures had dirty water in the pools/moats.
11. Failing to provide an appropriate diet. Animals including the leopard cats and otters were seen to be fed dry cat food, which is an unsuitable food for these animals.

12. Some of the animals displayed stereotypic behaviours. These were a clear indication that the animals were living in or had been exposed to substandard environments.
13. A white-handed gibbon was paraded around the zoo on a dog lead, and visitors were allowed to pet him and take their photos with him. The gibbon appeared to be highly agitated and frightened of the keeper holding the leash.

Primate enclosures

1: Worst; 2: Poor; 3: Average; 4: Good; 5: Best

Item	Ventilation	Lighting	Noise
Average	3.00	3.00	2.00

Item	Shelter	View	Substrate	Enclosure condition
Average	4.00	3.00	5.00	1.00

Item	Amount of litter	Drainage	Furniture	Enrichment
Average	3.00	4.00	2.00	1.00

Item	Social grouping	Private areas	Public contact	Size
Average	2.00	1.00	1.00	2.00

Average score: 2.47

The animals

The zoo housed at least five slow lorises in one small enclosure. This was far too overcrowded for these territorial primates.

The enclosure and husbandry

The slow loris enclosure was triangular in shape, with walls on two sides and narrow wire mesh at the front. The cage was too small, especially for five individuals.

The enclosure lacked sufficient furniture and sleeping areas and contained no vegetation or enrichment. Available vertical space was not utilised, and there were no private areas. Sleeping boxes



The small slow loris enclosure lacked space, sufficient furniture, enrichment and private areas and was extremely overcrowded.

were provided, but these were open at the front, offering no privacy, and there were not enough of them for all the lorises. One loris was observed hanging, curled up, on the wire mesh door, as he had nowhere else to sleep.

The enclosure had significant areas of rust that posed a potential health and safety hazard.

The lorises were subjected to very loud disturbing noises from construction work nearby.

Since visitors could easily touch the lorises through the wire mesh there were numerous safety, disease and animal welfare concerns.

The water bowl for the slow lorises was inappropriately placed on the cage floor, as was the majority of their food which was in a single bowl. These arboreal primates rarely come to the ground in the wild, and in captivity they should be fed and watered in elevated stations. There was old food scattered over the floor of the cage.



This loris was forced to rest on the door ledge as there were insufficient resting areas in the enclosure.



Food for the slow lorises was inappropriately placed on the floor and in one place only.

Recommendations short-term

- Provide more space- additional surface area can be created by the provision of more structures and furniture in the enclosure.
- Provide more furniture throughout the enclosure, including trees, other vegetation, perching platforms, aerial walkways etc. Provide suitable sleeping/resting areas for all individuals.
- Provide movable objects for play and manipulation.
- Establish a regular and varied behavioural enrichment programme, which stimulates all five of the animals' senses, to provide for the behavioural and psychological needs of the lorises.
- Provide visual barriers and private areas where the lorises can escape entirely from visitor view, and from each other.
- Remove all rust from the cage.
- Provide elevated feeding and watering stations. Ensure the lorises do not need to come to the floor to drink water or eat. Feed in multiple locations, including high up, to encourage foraging and other food acquisition behaviours.
- Install effective public stand-off barriers that ensure visitors cannot touch the lorises.
- Ensure that all food fed to the lorises is fresh, and that enclosures are cleaned at least twice a day.

Recommendation long-term

- Move the lorises to much larger, naturalistic enclosures, and do not house more than two or three together, unless they have sufficient space to mitigate against inter-individual conflict and to allow each animal to be secure and comfortable in their own area. The enclosure they were housed in at the time of this survey was wholly substandard.

White-handed gibbon

An adult white-handed gibbon was paraded around the zoo on a dog leash, and visitors were allowed to pet and take their photos with him.



Left: This gibbon was led around the zoo by a keeper who continuously smoked cigarettes. The gibbon appeared extremely agitated and wary of the keeper. Right: The gibbon dressed in clothes and a diaper.

The gibbon did not want to walk around the park and appeared agitated and frightened of the keeper, who smoked continuously while handling the gibbon. He was also taken to a children's playground and made to climb on the apparatus. Later in the day the gibbon was dressed in a diaper and clothes and tied to a bench, with no water or shelter. This kind of treatment is totally inappropriate and should cease immediately. The gibbon should be housed in a large, naturalistic enclosure that allows natural movements and behaviours. Direct contact with visitors and keepers should cease.

Bear and otter enclosures

1: Worst; 2: Poor; 3: Average; 4: Good; 5: Best

Item	Ventilation	Lighting	Noise
Average	3.00	4.00	4.00

Item	Shelter	View	Substrate	Enclosure condition
Average	2.00	2.00	1.00	2.50

Item	Amount of litter	Drainage	Furniture	Enrichment
Average	3.00	1.00	1.00	1.00

Item	Social grouping	Private areas	Public contact	Size
Average	4.00	3.00	2.00	2.50

Average score: 2.40

The animals

The zoo housed at least two Malayan sun bears and two small-clawed otters in two enclosures.

One otter had bald patches on their back, while the second otter was limping and not using their front left leg.

The enclosures and husbandry

The bears and the otters were housed in pits, with no horizontal sightlines. The bear enclosure had particularly high walls (approximately 4m), that also restricted the ventilation inside their enclosure.



The bears and otters were housed in barren, old-fashioned concrete pits, with dirty, algae-covered concrete floors.

The bear enclosure was too small to allow for significant movement and most of the natural behaviours these large animals would normally express.

Both the bear and otter enclosures had concrete floors with no areas of soft substrate. Both enclosures had dirty, poorly drained floors covered in algal growth.

Both of the enclosures lacked sufficient furniture; in each there was just a small water pool and a few concrete tunnels, providing limited shelter. The water in the otter pool was dirty.

Neither enclosure contained any enrichment.

One of the sun bear enclosures contained several areas of broken concrete and pieces of broken tiles; a potential safety hazard to the animals.

Visitors could easily reach into the otter enclosure, posing a safety hazard to the visitors who might be scratched or bitten. There was also a risk of disease transfer, as well as welfare concerns. Zoo keepers and other staff (who appeared to be construction workers) were observed reaching into both the bear and otter enclosures to tease the animals, for example dangling objects such as bits of plastic and ropes into the enclosures. Some objects were dropped into the bear enclosure. One keeper entered the otter enclosure and was handling the otters while smoking. This is an unacceptable practice.



Visitors and zoo staff could easily reach into the otter enclosure to touch and feed the otters.



The bear enclosure was in a state of disrepair and contained many pieces of broken tiles.

There was a large bowl filled with cat food in the otter enclosure, indicating that this made up a large part of their diet. This is not a suitable, nutritive diet for otters.

Behaviour

One bear was observed performing stereotypic neck turning behaviour. Both of the otters and both of the bears appeared to be begging at the sides of the enclosures when visitors or staff came near.



Zoo staff members were seen teasing the bears and dangling items such as bits of plastic into their enclosure.

Recommendations short-term

- Provide more space - additional surface area can be created by the provision of more structures and furniture in the enclosures.
- Provide large areas of soft substrate (e.g. woodchips, soil, grass and/ or sand) in all of the enclosures.
- Provide furniture for climbing, resting platforms that are not made of concrete (e.g. wooden resting platforms) and trees in the bear enclosure. Provide logs, rocks, live vegetation and grass in the otter enclosure. Provide suitable sleeping areas in both enclosures.
- Provide a larger water pool in the otter enclosure.
- Provide movable objects for play and manipulation.
- Establish a regular and varied behavioural enrichment programme, which stimulates all five of the animals' senses, to provide for the behavioural and psychological needs of the bears and the otters.
- Provide visual barriers and private areas, other than the small, cramped tunnels, where the bears and otters can escape entirely from visitor view and each other and where they can obtain shelter from the elements.
- Remove all the broken concrete and tiles from the sun bear enclosure and repair the enclosure where necessary.
- Ensure all enclosures are well-drained and cleaned at least twice a day. Ensure that water pools contain clean water at all times and that the bears and otters have a separate source of drinking water other than the pools.
- Ensure that visitors cannot touch the otters by installing effective public stand-off barriers. Ensure that the zoo staff behave appropriately around the animals.
- Ensure that the otters receive a proper, balanced diet.



The pit-style enclosure was a wholly substandard living environment for the bears.

Recommendation long-term

- Move the bears and otters to much larger, naturalistic enclosures as a matter of urgency, particularly the bears. The enclosures they were housed in at the time of this survey were deficient in all respects. They failed completely to satisfy the needs of these animals.

Tiger enclosure

1: Worst; 2: Poor; 3: Average; 4: Good; 5: Best

Item	Ventilation	Lighting	Noise
Average	3.00	5.00	2.00

Item	Shelter	View	Substrate	Enclosure condition
Average	1.00	3.00	4.00	4.00

Item	Amount of litter	Drainage	Furniture	Enrichment
Average	3.00	4.00	2.00	2.00

Item	Social grouping	Private areas	Public contact	Size
Average	5.00	1.00	4.00	3.00

Average score: 3.07

The animals

The zoo housed at least two tigers in one enclosure.

The enclosures and husbandry

The tiger enclosure was new and fairly naturalistic-looking. However, the tigers view was very limited- they could only look out through the glass panels at the front into the visitor viewing area.

A primary concern was the total lack of privacy for the tigers. Not only did they have no private areas in the enclosure, but visitors could view them from an overhead bridge, meaning the tigers had no opportunity to escape from visitor view and were subjected to potentially continuous noise from the visitors above.

The enclosure lacked sufficient shelter, furniture and enrichment. The moat at the front contained very dirty water and may have posed a health hazard to the animals.

Recommendations short-term

- Close the overhead visitor viewing station (bridge), or restrict visitor access to a few short periods of time each day.
- Provide more space - additional surface area can be created by the provision of more structures and furniture.
- Provide more furniture for climbing, resting platforms that are not made of concrete (e.g. wooden resting platforms) and trees that are accessible to the tigers. Provide elevated furnishings and designated sleeping/resting areas.
- Provide movable objects for play and manipulation.
- Establish a regular and varied behavioural enrichment programme, which stimulates all five of the animals' senses, to provide for the behavioural and psychological needs of the tigers.
- Provide visual barriers and private areas where the tigers can escape entirely from visitor view and from the view of each other.
- Ensure that the water in the moat is clean at all times.



The tiger enclosure was fairly naturalistic. However, the overhead visitor walkway and lack of privacy for the tigers was a serious concern.

Recommendation long-term

- Connect the existing tiger enclosure to the adjacent empty enclosure to substantially increase the amount of space available to the tigers.

Small mammal enclosures

1: Worst; 2: Poor; 3: Average; 4: Good; 5: Best

Item	Ventilation	Lighting	Noise
Average	3.00	3.00	2.00

Item	Shelter	View	Substrate	Enclosure condition
Average	4.00	3.00	5.00	1.00

Item	Amount of litter	Drainage	Furniture	Enrichment
Average	3.00	4.00	2.00	1.00

Item	Social grouping	Private areas	Public contact	Size
Average	4.67	1.00	1.00	2.00

Average score: 2.64

The animals

The zoo housed at least one leopard cat, four Malayan civets, one common palm civet, one small-toothed palm civet, three Malayan porcupines, four Asiatic brush-tailed porcupines and one Prevost's squirrel, in cages.

One of the Malayan civets had bald patches on the tail.



The small mammal enclosures, such as this leopard cat enclosure, were severely lacking in furniture.

The enclosures and husbandry

All of the small mammals mentioned above were housed in small, old-fashioned style cages, that did not allow for most natural behaviours. The enclosures were triangular in shape, with walls on two sides and narrow wire mesh at the front. All of the animals would benefit from much larger enclosures.

The enclosures lacked sufficient furniture. For example, the porcupine enclosures each contained a single, small concrete tunnel, while the leopard cat enclosure contained a single, narrow branch close to the floor. In the leopard cat, civet and squirrel enclosures, there were no elevated features, furnishings or trees, which would be suitable for these animals.

All enclosures lacked sufficient sleeping/resting areas. None of the enclosures contained any vegetation or enrichment and there were no private areas provided for any of the animals.

The enclosures all had large areas of rust creating a potential health and safety for the occupants.

The animals were all subjected to very loud disturbing noises from construction work nearby.

Visitors could easily touch the animals through the wire mesh of their cage, creating a potential for scratches, bites, disease transfer or visitors injuring animals.



Old, rotten banana skins and bananas were scattered on the floors of the civet enclosures.

No barriers were in place, and visitors could easily touch and tease the animals.

A large bowl of cat food in the leopard cat enclosure suggested that this formed a significant part of the leopard cat's diet. Cat food is not a complete food for leopard cats.

Behaviour

One of the Malayan civets displayed stereotypic pacing behaviour while a second Malayan civet was observed chewing his tail.

Recommendations short-term

- Provide more space - additional surface area can be created by the provision of more structures and furniture in the enclosures.
- Provide more furniture and vegetation for all the animals. For the civets, leopard cat and squirrel, this should include furniture for climbing, more resting platforms, wide branches and preferably trees. Provide sufficient and suitable sleeping/resting areas for all animals.
- Provide movable objects for play and manipulation.
- Establish a regular and varied behavioural enrichment programme, which stimulates all five of the animals' senses, to provide for the behavioural and psychological needs of the animals.
- Provide visual barriers and private areas where the animals can escape entirely from visitor view and from each other, ensuring there is at least one private area per animal.
- Remove all rust from the enclosures.
- Install effective public stand-off barriers to prevent visitors from making contact with the animals.



All of the small mammal enclosures lacked private areas and sufficient and suitable resting areas for the animals.



This civet paced stereotypically along the wire mesh.

- Ensure that the enclosures are cleaned at least twice a day.
- Ensure that the leopard cat receives a suitable, balanced diet.
- Provide more varied soft substrates (e.g. woodchips, soil or grass) in all of the enclosures. Provide deeper areas of soft substrate (e.g. sand, soil or woodchips) for the porcupines to dig in.

Recommendation long-term

- Move all of the small mammals to much larger, naturalistic enclosures that allow for natural movements and behaviours. Their accommodation at the time of this survey was substandard.

3.7 Kuala Krai Mini Zoo

Introduction

The survey of Kuala Krai Mini Zoo took place on 21st June 2010.

Kuala Krai Mini Zoo is home to a variety of animals including native mammals, birds and reptiles. The zoo is situated on a 10-acre site and is under the management of the Kuala Krai Utara District Council. An information sign stated that a bird park, which houses local and imported birds, was established in 2005 on the zoo site.

Overall, the conditions at the zoo remained largely unchanged from what was observed and recorded in 2009. While the enclosures were still in a state of disrepair, there had been a couple of minor improvements. The binturong had a resting platform to lie on, and the gibbon had a new small resting platform and narrow plank in his enclosure. The elephant also had larger drinking water receptacles. The zoo appeared to have acquired a young Malaysian sun bear, not observed in 2009. A slow loris observed last year was not present in this survey.



Enclosures surveyed

- One white-handed gibbon enclosure (1 animal).
- One pig-tailed macaque enclosure (1 animal).
- One Malaysian sun bear enclosure (1 animal).
- One leopard cat enclosure (1 animal).
- One binturong enclosure (1 animal).
- One common palm civet enclosure (4 animals).

The living conditions for an Asian elephant were also assessed and recorded, but his living conditions were not given a numerical score as he was simply chained by the legs in one location at times and at other times wandering freely, instead of being kept in a traditional open yard enclosure.

Overall results

1: Worst; 2: Poor; 3: Average; 4: Good; 5: Best

Item	Ventilation	Lighting	Noise
Average	3.50	3.67	4.00

Item	Shelter	View	Substrate	Enclosure condition
Average	2.50	3.00	1.00	1.00

Item	Amount of litter	Drainage	Furniture	Enrichment
Average	3.00	1.50	1.50	1.17

Item	Social grouping	Private areas	Public contact	Size
Average	3.00	1.00	1.00	1.83

Overall average score: 2.18

Kuala Krai Mini Zoo failed to meet the acceptable standards for the well-being of the focus animals. All of the enclosures did nothing to ensure animal welfare as they were of simplistic, outdated, small cage design. Overall, the welfare of the animals was severely compromised due to substandard living environments and poor husbandry practices.

All of the enclosures surveyed failed to meet the majority of the standards in Section 2.3.

The zoo should not acquire any additional animals and should instead focus their resources on improving the welfare of the animals already in their collection, or on moving the animals to more appropriate facilities.

The main areas of concern were:

1. Housing animals in inappropriate social groups. In 50 percent of enclosures, animals were housed in inappropriate social groups. The very social white-handed gibbon and pig-tailed macaque were housed alone. The young Malayan sun bear cub was at a critical stage of social development and should have been with his mother.

2. Failing to provide soft substrates. None of the enclosures provided appropriate substrates. All of the enclosures had concrete or wire mesh floors and no areas of soft substrate.
3. Failing to provide a safe living environment. All of the cages contained large rusted areas and were in a state of disrepair. All contained other dangerous items, such as broken concrete, loose pieces of wire and wire mesh with sharp edges and protruding rusty nails.
4. Failing to provide a well-drained enclosure. 83.3 percent of enclosures were poorly drained. All of the concrete floors were covered with extensive algal growth.
5. Failing to provide sufficient species-specific furniture. All of the enclosures failed to provide sufficient furniture. The Malayan sun bear, leopard cat and pig-tailed macaque had no furniture at all. Whilst some furniture was provided for other animals, this was minimal and often consisted of extremely small, hard resting platforms. There was a distinct lack of species-appropriate furniture, such as platforms, aerial walkways, ladders, hammocks and other elevated furnishing for tree-dwelling animals such civets and binturong. The bear also had no elevated furniture or platforms to rest on. There was no vegetation in the enclosures for these animals.
6. Failing to provide species-specific enrichment. All of the enclosures failed to provide sufficient enrichment. Aside from a rusty chain in the gibbon enclosure, none of the enclosures contained any enrichment.
7. Failing to provide private areas. None of the enclosures had private areas where the animals could escape entirely from visitor view, the view of animals in neighbouring enclosures and/or each other.
8. Failing to ensure that visitors could not touch the animals. At every enclosure, visitors could easily touch the animals. This is problematic from safety, zoonoses and animal welfare perspectives.
9. Failing to provide sufficient space. None of the enclosures provided sufficient space. All of the enclosures surveyed were far too small to encourage most natural behaviours for the species they housed.
10. Failing to provide a hygienic environment. Many of the enclosures had dirty floors that were covered in old food, faeces and flies. The drinking water in the pig-tailed macaque enclosure was dirty.

11. Failing to provide drinking water for some animals. The civets did not have any drinking water.

Asian elephant

A lone male Asian elephant was housed at the zoo. Whilst we were at the zoo the elephant was unchained, although we did see a chain on the ground in the area where the elephant's food and water was situated, indicating he may be chained at times (as he was during our 2009 visit). The

elephant keeper made the elephant perform tricks for us, such as bowing and raising his legs, and used a rusty ankus for control. Part of the time the elephant was allowed to roam in a

large pasture area and graze for vegetation, and large drinking water receptacles were present. In 2009 there was a single, small bowl with no water. Both the grazing and large water containers are positive developments. However, no large bathing pool, an essential enclosure feature for elephants in captivity, was observed.



The elephant was made to perform unnatural tricks, and the keeper used a rusty ankus to control him.

Primate enclosures

1: Worst; 2: Poor; 3: Average; 4: Good; 5: Best

Item	Ventilation	Lighting	Noise
Average	3.50	4.00	4.00

Item	Shelter	View	Substrate	Enclosure condition
Average	2.00	3.00	1.00	1.00

Item	Amount of litter	Drainage	Furniture	Enrichment
Average	3.00	1.00	1.50	1.50

Item	Social grouping	Private areas	Public contact	Size
Average	1.00	1.00	1.00	2.00

Average score: 2.03

The animals

The zoo housed at least one white-handed gibbon and one pig-tailed macaque in two enclosures. Both of these social primates were inappropriately housed alone.

The macaque appeared to be missing his top two canine teeth, whilst his bottom two canines appeared to have been blunted.



Both this pig-tailed macaque and the white-handed gibbon were inappropriately housed alone.

The enclosure and husbandry

Both the gibbon and the macaque were housed in small cages that did not allow them to engage in most natural behaviours.

Both cages had dirty, algae-covered concrete floors that lacked any soft substrate areas. The food for the primates appeared to be fed directly on the filthy floors. The drinking water in the pig-tailed macaque enclosure was dirty and contained old food.

The pig-tailed macaque enclosure contained no furniture at all. The gibbon enclosure contained a narrow plank and one very small resting platform. The gibbon spent much of the time hanging on the wire mesh. There were no private areas in either cage. The corrugated sheets forming roofs

over the enclosures did not appear to offer effective protection from the rain.

The macaque enclosure lacked any enrichment whilst the gibbon enclosure had a rusty chain hanging from the roof. There were two tyres lying on the floor of the cage which looked like they had fallen down quite some time ago.

Both enclosures were in a state of disrepair, with loose wire mesh, large areas of rust and protruding sharp wire pieces, all of which posed a safety hazard to the animals.

Visitors could easily touch the primates through the wire mesh of their cages. This posed serious safety concerns for visitors, as well as zoonoses and animal welfare concerns.

The water source for the gibbon was inappropriately placed on the floor. These arboreal apes rarely come to the ground in the wild, so in captivity they should be fed and watered at elevated stations, preferably high off the floor.



The small, rusted gibbon cage was in a state of disrepair with many areas of loose wire mesh. Two tyres lay on the floor.

Behaviour

The gibbon was observed swinging stereotypically in repetitive circles around the plank and rocking forwards and backwards. The pig-tailed macaque was repeatedly yawning.

Recommendations short-term

- Provide more space- additional surface area can be created by the provision of more structures and furniture in the enclosures.
- Provide areas of soft substrates (e.g. sand, soil, woodchips and/or grass).
- Provide more furniture for climbing and more furniture high up in the enclosure, including trees and/or vegetation. Provide suitable sleeping/resting areas.
- Ensure effective shelter from the elements is provided.
- Provide movable objects for play and manipulation.
- Establish a regular and varied behavioural enrichment programme, which stimulates all five of the animals' senses, to provide for the behavioural and psychological needs of the primates.
- Provide visual barriers and private areas where the primates can escape entirely from visitor view, ensuring there is at least one private area per animal.
- Remove all rust and other harmful items from the cages.



Both the macaque and the gibbon need to be moved to larger, more suitable enclosures as a matter of urgency.



The primate enclosures were rusty and in a state of disrepair. This photos shows large areas of loose wire mesh on the macaque enclosure.

- Ensure that the primates have constant access to clean water. Provide elevated feeding and watering stations to ensure the gibbon does not need to come to the floor to eat or drink.
- Ensure that food is not fed directly on the floor. Feed in multiple locations, including high up, to encourage foraging and other food acquisition behaviours.
- Install effective public stand-off barriers to ensure that visitors cannot touch the primates.
- Ensure that enclosures are well drained and are cleaned at least twice a day.

Recommendation long-term

- Move the primates to much larger, naturalistic enclosures at facilities where they can be housed in appropriate social contexts with others of their kind. The enclosures they were housed in at the time of this survey were grossly substandard.

Bear enclosure

1: Worst; 2: Poor; 3: Average; 4: Good; 5: Best

Item	Ventilation	Lighting	Noise
Average	3.00	3.00	4.00

Item	Shelter	View	Substrate	Enclosure condition
Average	3.00	3.00	1.00	1.00

Item	Amount of litter	Drainage	Furniture	Enrichment
Average	3.00	1.00	1.00	1.00

Item	Social grouping	Private areas	Public contact	Size
Average	1.00	1.00	1.00	2.00

Average score: 1.93

The animals

The zoo had at least one young Malayan sun bear, housed alone. The bear was at an age when he should still be with his mother.

The enclosures and husbandry

The bear was housed in a cage, with walls on two sides and a limited view out into another walled area, severely limiting the bear's sightlines.

The enclosure was too small to allow for significant movement and most natural behaviours. The dirty, algae-covered floor was concrete with no areas of soft substrate.

There were no structural enhancements, such as a bathing pool, or furniture, enrichment or private areas.



This young sun bear was housed alone in a rusty, dilapidated enclosure.

The enclosure was in a state of disrepair with a cracked floor, lots of sharp rusty wire and loose wire mesh sticking into the enclosure, posing a safety hazard. There was also a broken pottery bowl with sharp edges, which could cause an injury to the bear.



The featureless bear enclosure, with a concrete floor.

Visitors could easily reach into the enclosure and touch the bear through a small door. This posed safety, zoonoses, and animal welfare concerns.

Substantial amounts of rice were observed on the enclosure floor, suggesting that rice was a staple of the bear's diet. Rice is not an appropriate food for bears.

Behaviour

The bear was observed performing stereotypic pacing behaviour.



The concrete floor of the bear enclosure was dirty and covered with algae and rice.

Recommendations short-term

- Provide more space- additional surface area can be created by the provision of more structures and furniture in the enclosure.
- Provide large areas of soft substrate (e.g. woodchips, soil, grass and/ or sand) in the enclosure.
- Provide furniture for climbing, resting platforms that are not made of concrete (e.g. wooden resting platforms), logs and trees. Provide suitable sleeping areas.
- Provide a water pool that is large enough for the bear to bathe in.
- Provide movable objects for play and manipulation.
- Establish a regular and varied behavioural enrichment programme, which stimulates all five of the animals' senses, to provide for the behavioural and psychological needs of the bear.
- Provide visual barriers and private areas where the bear can escape entirely from visitor view, ensuring there is at least one private area per animal.
- Remove all rust and other harmful items from the enclosure and repair the enclosure where necessary.
- Ensure that the enclosure is well-drained and cleaned at least twice a day.
- Ensure that visitors cannot touch the bear, by installing effective barriers.
- Ensure that the bear receives a proper, balanced diet.



Broken, rusty wire posed a safety hazard for the young bear.

Recommendation long-term

- Move the bear to a much larger, naturalistic enclosure featuring soft substrates and a complex interior as a matter of urgency. The enclosure the bear was housed in at the time of this survey was grossly substandard.

Small mammal enclosures

1: Worst; 2: Poor; 3: Average; 4: Good; 5: Best

Item	Ventilation	Lighting	Noise
Average	3.67	3.67	4.00

Item	Shelter	View	Substrate	Enclosure condition
Average	2.67	3.00	1.00	1.00

Item	Amount of litter	Drainage	Furniture	Enrichment
Average	3.00	2.00	1.67	1.00

Item	Social grouping	Private areas	Public contact	Size
Average	5.00	1.00	1.00	1.67

Average score: 2.36

The animals

The zoo housed at least one leopard cat, four common palm civets and one binturong, in three cages.

The leopard cat had an open wound above one eye.

The enclosures and husbandry

All of the small mammals mentioned above were housed in small, old-fashioned style cages, too small to encourage most natural behaviours. The leopard cat enclosure was especially small, approximately 1m x 2m x 1.2m. All of the animals would benefit from much larger enclosures. The civet enclosure was extremely overcrowded with four individuals.



This leopard cat had an open wound over one eye.

The leopard cat enclosure had a rusted wire mesh floor, with no solid floor areas to retreat to. This is totally unacceptable from a welfare point of view. The civet and binturong enclosures had poorly drained algae-covered concrete floors.

The leopard cat enclosure contained no furniture at all. The binturong and civet enclosures contained only small, hard resting platforms that were insufficient to accommodate all of the civets.

There was no furniture high up or trees, which would be suitable for these tree-dwelling animals. None of the enclosures contained any vegetation or enrichment and there were no private areas provided for any of the animals.

All of the enclosures were in a state of disrepair. The leopard cat enclosure was rust-covered, while the binturong and civet enclosures had large areas of rust, which posed a potential health and safety hazard. There were loose pieces of sharp metal wire and loose, broken sections of wire mesh with sharp edges in every enclosure. The civet enclosure contained several protruding rusty nails.

Visitors could easily touch the animals through the wire mesh of their cages. This posed a serious safety concern and allowed for the spread of zoonoses, as well as being an animal welfare concern.

Lack of hygiene was also problematic. The leopard cat enclosure did not look like it had been cleaned for a long time, as there was a large pile of dry, white-coloured faeces inside. The binturong enclosure contained many damp, rotting leaves and also appeared to have not been cleaned



This small, rusted, barren cage, with a wire mesh floor, was a totally unsuitable living environment for the leopard cat.



Rust, broken wire mesh and protruding rusty nails, as seen in this photo, posed a danger to the civets and leopard cat.

for some time. Similarly, the floor of the civet enclosure was covered in old food, faeces and dirt.

Fruit and/or meat was scattered directly on the dirty floors of the enclosures and was quickly infested with flies.

The civets did not have any drinking water.



The dirty floor of the civet enclosure.

Recommendations short-term

- Remove the leopard cat from the cage he is currently housed in as a matter of urgency, at the very least to a larger enclosure with a solid floor (with areas of soft substrate).
- Provide areas of soft substrates (e.g. woodchips, sand, soil and/or grass) in all of the enclosures.
- Provide more space - additional surface area can be created by the provision of more structures and furniture in the enclosures.
- Provide more furniture and vegetation for all the animals. This should include furniture for climbing, several large resting platforms, wide branches and preferably trees. Provide sufficient and suitable sleeping/resting areas for all animals. Ensure all animals have sufficient shelter from the elements, especially from rain.
- Provide movable objects for play and manipulation.
- Establish a regular and varied behavioural enrichment programme, which stimulates all five of the animals' senses, to provide for the behavioural and psychological needs of the animals.



The leopard cat needs to be removed from these unacceptable living conditions as a matter of urgency.

- Provide visual barriers and private areas where the animals can escape entirely from visitor view and from the view of each other, ensuring there is at least one private area per animal.
- Remove all rust and other harmful items from the enclosures.
- Install effective public stand-off barriers to prevent visitors from making contact with the animals.
- Ensure the enclosures are cleaned at least twice a day.
- Ensure all animals have continual access to clean water. Ensure that food is fed off the floor, ideally spread around the enclosure, to encourage foraging and other food acquisition behaviours.



This cage is far too small for four civets, and the civets need to be moved to a much larger and more suitable environment.

Recommendation long-term

- Move all of the small mammals to much larger, naturalistic enclosures as a matter of urgency. All of the enclosures they were housed in at the time of this survey were grossly substandard and failed completely to satisfy their biological and behavioural needs.

3.8 Lye Huat Garden Mini Zoo

Introduction

The survey of Lye Huat Garden Mini Zoo took place on 23rd June 2010.

Lye Huat Garden is a recreational park in Kubang Pasu District, Kedah, founded by Dato Lim Lye Huat in 2002. Dato Lim built it for his personal enjoyment. However, through the suggestion of friends, he decided to open it to the public. It comprises a man-made lake, miniature landscaped garden and terra cotta garden. Visitors can also observe the koi in the lake, and view a collection of ceramic figurines.



Lye Huat Garden Mini Zoo houses native and exotic mammals, as well as several birds and reptiles.

Overall, the conditions at the zoo remained largely unchanged from 2009, with many of the enclosures still in a state of disrepair. The zoo appeared to have acquired a flat-headed cat. One capuchin monkey and one binturong were no longer present in the collection. The clouded leopard was in a larger but still inadequate enclosure.

Enclosures surveyed

- One brown capuchin enclosure (1 animal).
- One red-handed tamarin enclosure (2 animals).
- One Wied's marmoset enclosure (1 animal).
- One common marmoset enclosure (1 animal).
- Two tiger enclosures (2 animals).
- One leopard enclosure (1 animal).
- One clouded leopard enclosure (1 animal).
- One Malayan sun bear enclosure (2 animals).
- One leopard cat enclosure (6 animals).
- One flat-headed cat enclosure (1 animal).
- One Bengal cat enclosure (2 animals).
- One binturong enclosure (1 animal).

- Two common palm civet enclosures (3 animals).
- One Asian small-clawed otter enclosure (1 animal).
- One raccoon enclosure (3 animals).
- One Prevost's squirrel enclosure (2 animals).
- One variable squirrel enclosure (2 animals).

Overall results

1: Worst; 2: Poor; 3: Average; 4: Good; 5: Best

Item	Ventilation	Lighting	Noise
Average	3.16	3.63	3.58

Item	Shelter	View	Substrate	Enclosure condition
Average	3.47	2.84	1.53	1.42

Item	Amount of litter	Drainage	Furniture	Enrichment
Average	2.95	2.11	2.00	1.21

Item	Social grouping	Private areas	Public contact	Size
Average	3.63	1.53	1.95	2.00

Overall average score: 2.47

Lye Huat Garden Mini Zoo failed to meet the acceptable standards for the well-being of the focus animals. All of the enclosures were of outdated small cage or pit-style design, and many were in a state of disrepair. The welfare of the animals was severely compromised due to the substandard living environments and poor husbandry practices.

All of the enclosures surveyed failed to meet most of the acceptable standards in Section 2.3.

The zoo should not acquire any additional animals. Instead, they should put their time, energy and resources into improving the welfare of the animals already in their collection.

The main areas of concern were:

1. Failing to provide soft substrates. 84.2 percent of enclosures had a concrete or wire mesh floor and lacked any soft substrate areas.
2. Failing to provide a safe living environment. 94.7 percent of enclosures failed to provide a safe living environment. Most cages contained large rusted areas and many enclosures contained dangerous items, such as loose, sharp pieces of metal wire and broken concrete flooring. The bear enclosure contained litter.
3. Failing to provide a well-drained enclosure. 63.2 percent of enclosures were poorly drained. All of the concrete floors had algal growth over them; in many cases this was extensive.
4. Failing to provide sufficient species-specific furniture. All of the enclosures lacked sufficient furniture. When furnishings were present they were minimal and insufficient. Few of the animals had suitable, species-specific furniture.
5. Failing to provide species-specific enrichment. All of the enclosures lacked sufficient enrichment. Most of the animals had no enrichment at all. Only four animals had any sort of enrichment, but this was limited or inappropriate for the species.
6. Failing to house animals in appropriate social groupings. A capuchin, two marmosets and an Asian small-clawed otter were inappropriately housed alone. Six leopard cats were housed in one small cage- this is far too many of these territorial animals to be kept together in a small cage.
7. Failing to provide sufficient private areas. 84.2 percent of the enclosures lacked private areas to allow the animals to escape from visitor view, the view of animals in neighbouring enclosures and from each other.
8. Failing to ensure that visitors could not touch the animals. For 57.9 percent of the enclosures, visitors could easily touch the animals, even when barriers were in place, posing serious safety, zoonoses and animal welfare concerns.

9. Failing to provide sufficient space. None of the enclosures provided sufficient space. All of the enclosures surveyed were far too small to encourage most natural behaviours for the species they housed. Some enclosures were very small, barely allowing the animals to make even normal postural adjustments. For example, the capuchin cage was less than 2m x 2m x 2m in size.
10. Failing to provide clean drinking water. Many of the animals had access to dirty drinking water only, and many water receptacles were dirty and covered in algae.
11. Failing to provide a hygienic environment. Many of the enclosures had old food on the floors, or even on the roof (e.g. common marmoset). Some enclosures had a build-up of faeces on the floors and many pools contained dirty water.
12. The tigers and bears were housed in pit-style enclosures, which are totally unsuitable living environments.
13. Several animals had health problems which require immediate veterinary attention. These animals should not be on display.
14. A sign at the zoo entrance informed visitors they could have their photographs taken with particular animals for a fee. Such photography sessions may cause welfare problems for the animals, as well as posing a risk of zoonoses spread.

Primate enclosures

1: Worst; 2: Poor; 3: Average; 4: Good; 5: Best

Item	Ventilation	Lighting	Noise
Average	3.00	4.00	4.00

Item	Shelter	View	Substrate	Enclosure condition
Average	4.00	3.00	1.00	1.00

Item	Amount of litter	Drainage	Furniture	Enrichment
Average	3.00	4.00	2.00	1.25

Item	Social grouping	Private areas	Public contact	Size
Average	1.50	2.75	3.00	2.00

Average score: 2.64

The animals

The zoo housed at least one brown capuchin monkey, two red-handed tamarins, one Wied's marmoset and one common marmoset, in four enclosures.

The capuchin and both marmosets were inappropriately housed alone, which is highly detrimental to the welfare of these social animals.



The enclosures and husbandry

The primates were housed in four similar, small cages positioned in a row. The tamarin and marmoset enclosures had some adjoining sides with each other, allowing for easy transfer of disease between animals. The fact that the primates could not easily escape from the view of individuals in neighbouring cages could be stressful for them.

Social primates, including this capuchin, were inappropriately housed alone.

The enclosures were grossly undersized and failed to allow the animals to express most of their natural behaviours, especially the larger capuchin.

All primate enclosures lacked sufficient furniture. The capuchin enclosure contained just two rusted narrow poles. The tamarin and marmoset enclosures only had slightly more furniture, each featuring one or two plant pots and the tamarins and Wied's marmoset also had small hollow log structures, but incorrectly positioned on the ground. None contained any vegetation.

All enclosures had wire mesh floors, which are detrimental to animal welfare.

The capuchin enclosure lacked any private areas, whilst the tamarins did not have sufficient private areas.

All enclosures had extensive rusty parts and fixtures, which posed a potential health and safety hazard. The capuchin enclosure also contained loose bits of metal wire.

The only enrichment observed was some rusty chains hanging from the roof of the capuchin cage.

Both marmoset enclosures had a lot of old food on the floor, while the common marmoset enclosure also had lots of old food (bare corn on the cob stalks) on the roof of the enclosure, which is likely to attract rats. They appeared to have been there for quite some time.



The primate enclosures, such as this marmoset enclosure, all had large areas of rust.



A pile of old corn stalks were seen on top of this marmoset enclosure, which did not appear to have been cleared away for some time.

Some of the capuchin's food had fallen beneath the cage due to the wire mesh floor, making it unavailable to the monkey and subject to contamination.

Several pieces of litter were noticed scattered under the primate enclosures.

Recommendations short-term

- Provide more space- additional surface area can be created by the provision of more structures and furniture in the enclosures.
- Provide more furniture for climbing and more furniture high up in the enclosures, preferably including trees, other vegetation and aerial walkways. Provide suitable sleeping/resting areas for all individuals.
- Install solid flooring in the enclosures (e.g. wooden boards) so that the primates are not forced to rest on wire mesh floors.
- Provide areas of soft substrate (e.g. woodchips, sand, soil and/or grass) in all of the enclosures.
- Provide movable objects for play and manipulation.
- Establish a regular and varied behavioural enrichment programme, which stimulates all five of the animals' senses, to provide for the behavioural and psychological needs of the primates.
- Provide visual barriers and private areas where the primates can escape entirely from visitor view, and from each other and the primates in neighbouring cages, ensuring there is at least one private area per animal.
- Remove all rust from the cages. Remove all other dangerous items from the cages.
- Ensure that the enclosures are cleaned at least twice a day.



The current primate enclosures are totally unsuitable.

- Install signs around the enclosures informing people to not throw litter into or around the enclosures, or anywhere around the zoo.
- House the marmosets together as long as appropriate steps are taken to ensure that they do not breed.

Recommendations long-term

- Move the primates to much larger, naturalistic enclosures as a matter of urgency. The enclosures they were housed in at the time of this survey were deficient in all respects.
- If possible, move the capuchin and marmosets to other facilities with high welfare standards and suitable living conditions where they can live together with others of their kind.

Bear enclosure

1: Worst; 2: Poor; 3: Average; 4: Good; 5: Best

Item	Ventilation	Lighting	Noise
Average	3.00	5.00	2.00

Item	Shelter	View	Substrate	Enclosure condition
Average	1.00	2.00	1.00	1.00

Item	Amount of litter	Drainage	Furniture	Enrichment
Average	2.00	1.00	2.00	1.00

Item	Social grouping	Private areas	Public contact	Size
Average	5.00	1.00	4.00	2.00

Average score: 2.20

The animals

The zoo housed at least two Malayan sun bears in one enclosure.

One bear had bald patches on their back.

The enclosures and husbandry

The bear enclosure was an old-fashioned pit-style enclosure, and the bears had a very limited view out.



The bears at Lye Huat Garden were housed in a barren pit-style enclosure.

The enclosure was too small to allow for significant movement and most natural behaviours.

The enclosure had a concrete floor, with no areas of soft substrate. The floor was covered in faeces, substantial algal growth and some pieces of litter were scattered in places.

The enclosure had no shelter, private areas, enrichment and lacked any features or furniture, except for a stream running through it. The stream was filled with dirty water, and this appeared to be the only source of drinking water. Water running into the stream created a noisy environment for the bears from which they could not escape.



The bears had no shelter.

The doors leading to the off-exhibit areas were covered in rust, and the concrete floor was broken in places, both of which caused a safety hazard.

Behaviour

Both bears were inactive.

Recommendations short-term

- Provide more space- additional surface area can be created by the provision of more structures and furniture in the enclosure.
- Provide areas of soft substrate (e.g. woodchips, soil, grass and/or sand).
- Provide furniture for climbing, resting platforms that are not made of concrete (e.g. wooden resting platforms) and trees/vegetation. Provide suitable sleeping/resting areas for both bears. Provide high structures from where the bears can view out of the enclosure.
- Ensure that the water in the stream is clean at all times. Provide the bears with a deeper pool for bathing.
- Provide movable objects for play and manipulation.
- Establish a regular and varied behavioural enrichment programme, which stimulates all five of the animals' senses, to provide for the behavioural and psychological needs of the bears.
- Provide visual barriers and private areas where the bears can escape entirely from visitor view and from the view of each other, ensuring there is at least one private area per animal.
- Ensure the enclosure is well-drained.
- Remove all rust from the enclosure, as well as any other harmful items.
- Ensure the enclosure is cleaned at least twice a day.
- Ensure the bears have clean drinking water at all times.
- Install signs around the cages instructing visitors to not throw litter into or around the enclosures, or anywhere on the zoo grounds.



The bears had no opportunity to get off of the fully concrete floor and urgently need areas of soft substrate.

Recommendation long-term

- Move the bears to much larger, naturalistic enclosures as a matter of urgency. The enclosure they were housed in at the time of this survey was substandard in all respects.

Big cat enclosures

1: Worst; 2: Poor; 3: Average; 4: Good; 5: Best

Item	Ventilation	Lighting	Noise
Average	3.00	4.00	3.50

Item	Shelter	View	Substrate	Enclosure condition
Average	3.25	2.50	2.50	1.50

Item	Amount of litter	Drainage	Furniture	Enrichment
Average	3.00	1.00	2.00	1.50

Item	Social grouping	Private areas	Public contact	Size
Average	5.00	1.00	2.75	2.00

Average score: 2.57

The animals

The zoo housed at least two tigers, one leopard and one clouded leopard, in four enclosures.

The enclosures and husbandry

The two tigers were housed in pit-style enclosures, whilst the leopard and clouded leopard were both housed in cages. Both styles of enclosure are known to be detrimental to animal welfare.

The clouded leopard enclosure was positioned near a noisy generator.

Both the leopard and clouded leopard cages had concrete floors with significant algal growth, particularly in the leopard



The tigers were housed in pit-style enclosures, with a limited view out and little furniture.

enclosure, a sign of poor drainage. The tiger enclosures were also poorly drained, with algal growth evident, and standing water on the ground in one enclosure.

All of the enclosures lacked sufficient furniture, particularly the clouded leopard enclosure, which had just one small resting platform

close to the ground that was not even sheltered from the sun or rain. The clouded leopard had no pool for bathing and no trees, vegetation or elevated furnishings.

The leopard enclosure contained just two small resting platforms and a very small log and a branch close to the ground. There were no trees, vegetation or high furniture for this tree-dwelling cat. There was a very small water pool, but this was shallow and barely large enough for the leopard to fit into, so there was no opportunity to bathe. The tiger enclosures each contained a hollow tunnel structure and an old log on the ground, but no trees or furniture for climbing.

The leopard and clouded leopard had no enrichment, while the tigers had some grass in their enclosures, and one tiger enclosure contained some plants.

None of the enclosures had private areas.

Both the leopard and clouded leopard enclosures had large areas of rust and the tiger enclosures had rusty doors to their off-exhibit areas, posing a health and safety hazard to the animals. The clouded leopard's water receptacle was broken and had sharp edges. The tiger enclosure moats were filled with dirty water, possibly posing a health hazard. The clouded leopard's water receptacle was algae-covered.



The leopard was housed in this small, featureless, oppressive cage.



The leopard enclosure had large areas of rusted parts.

Visitors could easily touch the clouded leopard through the bars, a serious safety hazard, which also posed a risk of zoonoses spread, as well as being an animal welfare concern.

Behaviour

One of the tigers was observed performing stereotypic pacing behaviour. The rest of the big cats were lethargic.

Recommendations short-term

- Provide more space - additional surface area can be created by the provision of more structures and furniture in the enclosures.
- Provide areas of soft substrate (e.g. woodchips, soil, grass and/or sand) in all of the enclosures.
- Provide more furniture for climbing, resting platforms that are not made of concrete (e.g. wooden resting platforms) and trees/vegetation. Provide more furniture high off the ground in the leopard and clouded leopard enclosures. Provide suitable sleeping/resting areas for all individuals.
- Provide large pools for the leopard and clouded leopard. Ensure the water pools are kept filled with clean water at all times.
- Provide movable objects for play and manipulation.
- Establish a regular and varied behavioural enrichment programme, which stimulates all five of the animals' senses, to provide for the behavioural and psychological needs of the big cats.
- Provide visual barriers and private areas where the animals can escape entirely from visitor view, ensuring there is at least one private area per animal.
- Remove all rust from the enclosures.
- Ensure all enclosures are well-drained.
- Ensure all enclosures are cleaned at least twice a day.
- Ensure the tiger enclosure moats are kept filled with clean water at all times.



This low platform, exposed to the sun and rain, was the only furniture in the featureless leopard cat enclosure.

- Ensure all animals have clean drinking water and that drinking receptacles are clean and free of algae.
- Install effective public stand-off barriers that prevent visitors from being able to make contact with the clouded leopard.

Recommendation long-term

- Move the big cats to much larger, naturalistic enclosures that allow them to move and behave normally as a matter of urgency. The enclosures they were housed in at the time of this survey were wholly substandard.

Small mammal enclosures

1: Worst; 2: Poor; 3: Average; 4: Good; 5: Best

Item	Ventilation	Lighting	Noise
Average	3.30	3.20	3.60

Item	Shelter	View	Substrate	Enclosure condition
Average	3.60	3.00	1.40	1.60

Item	Amount of litter	Drainage	Furniture	Enrichment
Average	3.00	1.90	2.00	1.10

Item	Social grouping	Private areas	Public contact	Size
Average	3.80	1.30	1.00	2.00

Average score: 2.39

The animals

The zoo housed at least six leopard cats, one flat-headed cat, two Bengal cats, one binturong, three common palm civets, one Asian small-clawed otter, three raccoons, two Prevost's squirrels and two variable squirrels, in ten enclosures.

The small-clawed otter was inappropriately housed alone.

Six leopard cats were crowded into one small enclosure, a stressful situation for these territorial animals.

One leopard cat was missing most of his tail and had a large, open wound on the back of his neck which he was continually scratching.



This leopard cat had a large open wound on his neck and most of his tail was missing.

One of the common palm civets appeared to have infected eyes which were weeping with discharge, and one eye appeared to be blind. He also had large bald patches on his rump.

The binturong's fur was dirty and matted.

The otter was overweight.

The enclosures and husbandry

All of the small mammals mentioned above were housed in undersized cages and all would benefit from increased space.

The binturong enclosure was positioned near a noisy generator.

Only the Bengal cat enclosure contained soft substrate- all other enclosures had concrete or wire mesh floors, which are detrimental to animal welfare, with no areas of soft substrate. All concrete floors were poorly drained and covered in algal growth.

All of the enclosures lacked sufficient and species-specific furniture. Most contained just narrow planks and small logs on the floor and/or one or two plant pots. Some were essentially barren, such as the raccoon, otter, binturong and leopard cat enclosures. None of the enclosures contained any trees or vegetation, despite the fact that most of these small mammals are tree-dwelling species. The binturong and civets, who live high in the trees in the wild, had no furnishings high up and no elevated resting stations. The otter had a very small pool which was far too small, narrow and shallow to allow for swimming; the water inside was only about an inch deep.

None of the enclosures contained any enrichment.



This overweight otter was housed alone in an extremely small cage, with little water to swim in.



This binturong had no trees, vegetation or large branches to rest on- just this low platform.

Only one civet enclosure contained private areas, but the rest of the enclosures had none.

The civet, leopard cat and flat-headed cat enclosures were all very near to each other and joined to each other on some sides, so it was difficult for the animals, especially the leopard cats, to escape from the view of each other. The fact that animals were in such close proximity posed a high risk of disease spread between animals.



This broken box, with sharp nails sticking out, was in the flat-headed cat enclosure.

Most of the enclosures had large areas of rust, posing a potential health and safety hazard to the animals. Rust was a particular concern in one of the common palm civet enclosures, where the entire resting platform (the only one available to the civets) was rusted, as was their food bowl. It was also a big concern for the Prevost's squirrels, whose entire wire mesh cage floor was rusted. Some enclosures contained harmful items, such as sharp protruding metal pieces. The flat-headed cat enclosure contained a wooden box with one side hanging off, exposing sharp rusty nails. The variable squirrel enclosure contained a concrete wall with sharp edges which appeared to be breaking off in pieces.



Left: A dirty water receptacle and dirty, rusty food bowl in the common palm civet enclosure. Right: Most of the small mammal enclosures had poorly drained concrete floors which were covered in algae.

Poor hygiene was a concern. There were several old pieces of meat lying in and around the box in the flat-headed cat enclosure, which were covered in ants. Both civets had dirty food and water bowls which were covered in algae. The floor of one of the civet enclosures was covered in old dog food. The leopard cats had dirt in their drinking water. The water pool for the otter was dirty and filled with algae. The floors of both squirrel enclosures were covered in old food and sunflower seed shells which did not appear to have been cleaned away for a long time.



Civets only had rusty wire mesh platforms to rest on.

The Prevost's squirrels had no drinking water - they had a water bowl but it was empty.

For all of the small mammals, visitors could easily touch them through the bars as no public stand-off barriers were in place. This is potentially problematic in terms of zoonoses spread, the risk of visitors being scratched or bitten, as well as posing an animal welfare concern.

Animals including the civets, leopard cats, otters and raccoons were observed being fed dog food only, a cheap but inadequate food for them. The variable squirrels appeared to be fed a very limited diet of sunflower

seeds and corn, as their cage and food bowl contained large amounts of these foods and remnants of them. This is not a balanced diet for squirrels.

Behaviour

Two of the leopard cats exhibited stereotypic pacing behaviour. One common palm civet paced stereotypically from side to side. The otter appeared to be extremely distressed, calling loudly and reaching out through the bars of the enclosure.

Recommendations short-term

- Provide more space- additional surface area can be created by the provision of more structures and furniture in the enclosures.
- Provide large areas of soft substrate (e.g. woodchips, soil, grass and/or sand) in all of the enclosures.
- Provide furniture for climbing, resting platforms that are not made of concrete (e.g. wooden resting platforms) and trees/vegetation. Provide furniture high in the enclosures for the binturong, civets and leopard cats. Provide suitable sleeping/resting areas for all individuals.
- Provide movable objects for play and manipulation.
- Establish a regular and varied behavioural enrichment programme, which stimulates all five of the animals' senses, to provide for the behavioural and psychological needs of the animals.
- Provide visual barriers and private areas where the animals can escape entirely from visitor view, the view of animals in neighbouring enclosures, and from the view of each other, ensuring there is at least one private area per animal.
- Ensure all enclosures are well-drained.
- Remove all rust from the enclosures. Remove all other harmful items from the enclosures.
- Ensure all enclosures are cleaned at least twice a day.



These small cages provided totally unsuitable living conditions for the small mammals.

- Ensure all animals have clean drinking water in receptacles that are clean and free of algae.
- Ensure all animals are fed a balanced, species-appropriate diet in clean food bowls. As far as possible, spread food around enclosures to encourage natural foraging behaviours.
- Install effective public stand-off barriers to prevent visitors from making contact with the animals.

Recommendations long-term

- Relocate the otter to another facility where they can live with other otters in an appropriate environment.
- Move all of the animals to much larger, naturalistic enclosures. The enclosures they were housed in at the time of this investigation were wholly substandard.
- House the leopard cats in smaller groups, preferably in pairs or trios maximum.

3.9 Bukit Merah Laketown Resort Ecopark

Introduction

The survey of Bukit Merah Laketown Resort Ecopark took place on 25th June 2010.

Bukit Merah Laketown Resort Ecopark is marketed as an animal-friendly animal park covering three acres of forest reserve. The Ecopark consists of three areas- The Bird Park, Reptile Park and Tropical Trek, which is where most of the mammals are housed. The zoo houses a number of native and exotic mammal species.



An animal show takes place four times per day. However, we were unable to assess the show as they were cancelled due to rain on the day of our visit.

Overall, the conditions at the zoo remained largely unchanged from what was observed in 2009. A baby gibbon observed being used in photography sessions during the previous survey was absent during this visit, and the gibbons had been moved into a new enclosure.

Enclosures surveyed

- One white-handed gibbon enclosure (3 animals).
- One black-capped capuchin enclosure (2 animals).
- One squirrel monkey enclosure (5 animals).
- One slow loris enclosure (1 animal).
- One Malayan sun bear enclosure (6 animals).
- Two binturong enclosures (6 animals).
- One small-toothed palm civet enclosure (1 animal).
- One small-clawed otter enclosure (3 animals).
- One Malayan porcupine enclosure (2 animals).
- One sugar glider enclosure (5 animals).
- One plantain squirrel enclosure (2 animals).

Overall results

1: Worst; 2: Poor; 3: Average; 4: Good; 5: Best

Item	Ventilation	Lighting	Noise
Average	3.50	3.83	2.83

Item	Shelter	View	Substrate	Enclosure condition
Average	2.92	2.67	2.25	1.58

Item	Amount of litter	Drainage	Furniture	Enrichment
Average	3.00	1.67	2.17	1.58

Item	Social grouping	Private areas	Public contact	Size
Average	4.33	1.25	1.92	2.33

Overall average score: 2.52

Bukit Merah Laketown Resort Ecopark failed to meet the acceptable standards for the well-being of the focus animals. Most of the enclosures were of outdated small cage or pit-style design, which severely compromised animal welfare because they provided substandard environments, and husbandry practices were poor.

All of the enclosures surveyed failed to meet most of the acceptable standards in Section 2.3.

The zoo should not acquire additional animals. Improvements to animal housing and husbandry for the animals in the current collection should be made instead.

The main areas of concern were:

1. Failing to provide soft substrates. 66.7 percent of enclosures failed to provide appropriate substrates. Most enclosures had a concrete floor and lacked any soft substrates.
2. Failing to provide sufficient shelter. 41.7 percent of enclosures did not contain effective shelter or sufficient shelter for all individuals.

3. Failing to provide a safe living environment. All of the enclosures contained potentially dangerous items. Most of the cages contained large rusted areas. Many enclosures contained other dangerous items, such as protruding nails, frayed ropes, loose, sharp pieces of metal wire and broken concrete flooring.
4. Failing to provide a well-drained enclosure. 83.3 percent of enclosures were poorly drained. All of the concrete floors were covered with extensive algal growth.
5. Failing to provide sufficient species-specific furniture. 91.7 percent of enclosures failed to provide sufficient furniture. Whilst some furniture was provided for all of the animals, this was mostly minimal and insufficient. Few of the animals had suitable, species-specific furniture.
6. Failing to provide species-specific enrichment. None of the enclosures provided sufficient enrichment. Most of the animals had no enrichment at all. For the others, their enrichment was very limited or not suited to the species.
7. Failing to provide sufficient private areas. 91.7 percent of enclosures failed to provide sufficient private areas. Only the squirrel monkey enclosure contained private areas. None of the other enclosures had private areas to allow the animals to escape from visitor view, from the view of animals in neighbouring enclosures or from each other.
8. Failing to ensure that visitors could not touch the animals. For 66.7 percent of the enclosures, visitors could easily touch the animals. This posed a serious safety concern and allowed for the spread of zoonoses, as well as being a welfare concern.
9. Failing to provide sufficient space. 75 percent of enclosures failed to provide sufficient space. Most of the enclosures surveyed were far too small to encourage most natural behaviours for the species they housed. Only the squirrel monkey enclosure provided sufficient space. Of most concern were two extremely small off-exhibit Malayan sun bear enclosures, which confined two bears in spaces approximately 2m x 2m x 1.5m in size.
10. Failing to provide a hygienic environment. Many of the enclosures had old food on the floors or, in the case of the common marmoset, on the roof. Some enclosures had excessive faeces on the floor, and many pools contained dirty water.
11. The bears, porcupines and most of the binturongs were housed in pit-style enclosures, which are totally unsuitable living environments and have very limited views out for the animals-

especially when they were not provided with opportunities to climb high enough to see out of the enclosure.

12. Many of the animals displayed abnormal stereotypic behaviours. Of particular concern were the capuchin monkeys, who were both engaged in intense stereotypic behaviours almost constantly.
13. Public feeding of the animals. Visitors were strongly encouraged to buy food to feed to the animals, including unnatural non-nutritive food items such as bread. A zoo guide was observed instructing visitors to feed the capuchins and civet by hand, touching the animals while doing so. This created risk of zoonoses spread, as well as the risk of bite and scratch injuries. The expectation of food from visitors could be a strong causal factor of the stereotypic behaviour of the capuchins, as they appeared to get very agitated whenever they saw visitors. The binturongs in the main enclosure could be fed by visitors who placed bread on the end of a bamboo pole and dangled it into the cage. This turns feeding animals into a form of “entertainment”, and gives visitors the wrong impression about the way wild animals should be treated.



Left: The animal photography area at Bukit Merah Laketown Resort. Right: The animal show area at the Ecopark.

14. Photographs and posters of the Ecopark animal show contained images of animals performing unnatural tricks. Any show which focuses on unnatural behaviours and that clearly demeans and trivialises the animals fails to comply with the WAZA Code of Ethics and Animal Welfare. If this is indeed the case, the show should cease immediately.

15. A sign near the main entrance of the Bukit Merah Laketown Resort informed visitors that they could take their photographs with some of the wild animals if they paid a fee. We were told by a keeper that binturongs were used for these sessions. Such photography sessions may cause welfare problems for the animals, as well as posing a risk of zoonoses spread.

Primate enclosures

1: Worst; 2: Poor; 3: Average; 4: Good; 5: Best

Item	Ventilation	Lighting	Noise
Average	3.50	3.50	2.75

Item	Shelter	View	Substrate	Enclosure condition
Average	3.25	3.00	2.50	1.75

Item	Amount of litter	Drainage	Furniture	Enrichment
Average	3.00	2.75	2.50	1.75

Item	Social grouping	Private areas	Public contact	Size
Average	4.50	1.75	1.00	2.50

Average score: 2.67

The animals

The zoo housed at least three white-handed gibbons, two black-capped capuchins, five squirrel monkeys and one slow loris, in four enclosures.

The enclosures and husbandry

The squirrel monkey enclosure was a fairly large and naturalistic enclosure, with plenty of trees, other vegetation and areas of soft substrate. Although it was lacking in some key features which are vital to good welfare, such as sufficient shelter for all individuals and sufficient enrichment, and worryingly visitors could easily touch the squirrel monkeys, overall the squirrel monkey enclosure received a pass mark (3.33).



The gibbon enclosure lacked suitable and high furniture and opportunities for brachiation.

The white-handed gibbon enclosure contained some furniture, vegetation, and enrichment (a hanging metal ring and two log swings) but there was nothing high up in the enclosure, which would be suitable for these arboreal primates. The metal ring was rusty, as were some areas of wire mesh, posing a safety hazard. The enclosure lacked private areas, and visitors could easily touch the gibbons.



The concrete floors of the loris and capuchin enclosures were poorly drained and covered in algae.

The capuchins and slow loris were housed in small cages, too small to allow the animals to exhibit most of their natural behaviours, especially the larger capuchins. Both had concrete floors which were poorly drained and covered in algal growth. Both contained rusty areas, especially the capuchin enclosure. The capuchin enclosure contained lots of protruding nails and a frayed rope, whilst the loris enclosure contained sharp pieces of metal wire sticking out. Both enclosures lacked sufficient furniture. Both just contained some bare, narrow branches. Neither contained any furniture high up or sleeping areas. The capuchin enclosure lacked any vegetation. Both enclosures lacked private areas and visitors could touch the animals at both enclosures, and no public stand-off barriers were in place.



The capuchin enclosure contained dangerous protruding nails.

Behaviour

Both capuchins exhibited stereotypical pacing behaviour and one also performed a very pronounced stereotypical rocking behaviour and was engaged in this behaviour for most of the time we were observing. This involved the capuchin lying on the floor, sitting on the floor or sitting on the branches and rocking violently from side to side. The other capuchin was observed standing up and turning repetitively in circles.

Recommendations short-term

- Provide more space in the gibbon, capuchin and loris enclosures - additional surface area can be created by the provision of more structures and furniture in the enclosures.
- Provide more furniture for climbing and more furniture high up in the gibbon, capuchin and loris enclosures, preferably including trees and/or other vegetation. Provide suitable sleeping/resting areas for all individuals.
- Provide more shelter in the squirrel monkey enclosure.
- Provide areas of soft substrate (e.g. woodchips, soil, grass and/or sand) in the capuchin and loris enclosures.
- Ensure that the capuchin and loris enclosures are well-drained.
- Provide movable objects for play and manipulation.
- Establish a regular and varied behavioural enrichment programme, which stimulates all five of the animals' senses, to provide for the behavioural and psychological needs of the primates.
- Provide visual barriers and private areas where the primates can escape entirely from visitor view, from the view of animals in neighbouring cages and from each other.
- Remove all rust from the enclosures. Remove all other dangerous items from the enclosures.
- Cease the public feeding of the primates.



Public contact with the primates, especially public feeding, should cease on both safety and welfare grounds.

Recommendations long-term

- Move the gibbons, capuchins and slow loris to much larger, naturalistic enclosures as a matter of urgency. The enclosures they were in at the time of this survey were deficient in most respects. The capuchin monkey enclosure was particularly problematic and the capuchins should be removed from there immediately. No animals should be housed in this enclosure.

Bear enclosure

1: Worst; 2: Poor; 3: Average; 4: Good; 5: Best

Item	Ventilation	Lighting	Noise
Average	3.00	5.00	3.00

Item	Shelter	View	Substrate	Enclosure condition
Average	1.00	2.00	5.00	2.00

Item	Amount of litter	Drainage	Furniture	Enrichment
Average	3.00	1.00	2.00	2.00

Item	Social grouping	Private areas	Public contact	Size
Average	5.00	1.00	4.00	3.00

Average score: 2.80

The animals

The zoo housed at least six Malayan sun bears in one main enclosure and two off-exhibit enclosures.

One bear had thinning fur on the back.

The enclosures and husbandry

The main bear enclosure was an old-fashioned pit-style enclosure with high walls, and the bears had a very limited view outside.

The bear enclosures were situated near the show area, which presumably is noisy at animal show times.

The main enclosure had no effective shelter. There was a tarpaulin positioned above the enclosure in one area, but this was not impenetrable and rain was observed going straight through it. The floor of the enclosure was poorly drained and large pools of standing water had collected.

The main enclosure lacked sufficient and species-specific furniture, especially for four bears. There was just one small resting platform and a few narrow branches and logs. There was no furniture high up and no trees. There were also no private areas for the bears to retreat from public view, or the view of each other.



The bear enclosure lacked furniture and complexity.

There was some vegetation inside the main enclosure, but a lot of this appeared to be inaccessible to the bears as it was surrounded by electric fencing. The electric fencing surrounding the enclosure was very rusty.

Two bears were observed being kept in two extremely small cages adjoining the main enclosure. It was not possible to get near the cages and see inside to conduct an assessment, but we could see from



The bear enclosure was poorly drained, with a waterlogged floor.

outside the cages were approximately 2m x 2m x 1.5m in size. They were very dark inside, and it appeared the bears could only view out through very small openings into the main enclosure. These kind of living conditions are completely unacceptable.

Behaviour

Two of the bears in the main enclosure displayed stereotypic pacing behaviour, as did one bear in one of the small cages.

Recommendations short-term

- Release the bears from the two small cages as a matter of urgency.
- Provide more space - additional surface area can be created by the provision of more structures and furniture in the enclosure.
- Provide effective shelter in the main enclosure, and ensure there is sufficient shelter for all individuals.
- Provide more areas of varied soft substrate (e.g. woodchips, soil, and/or sand).
- Provide furniture for climbing, resting platforms that are not made of concrete (e.g. wooden resting platforms) and trees/ more vegetation. Provide suitable sleeping/resting areas for all individuals. Provide high structures from where the bears can view out of the enclosure.
- Provide movable objects for play and manipulation.
- Establish a regular and varied behavioural enrichment programme, which stimulates all five of the animals' senses, to provide for the behavioural and psychological needs of the bears.
- Provide visual barriers and private areas where the bears can escape entirely from visitor view and from the view of each other.
- Ensure the enclosure is well-drained.
- Remove all rust from the enclosure.



The bears need to be relocated from these extremely small cages to a suitable enclosure as a matter of urgency.

Recommendation long-term

- Move the bears to much larger, naturalistic enclosure(s) as soon as possible. The enclosure would need to be very large to house all six bears, or the bears could be split into smaller groups of two or three.

Small mammal enclosures

1: Worst; 2: Poor; 3: Average; 4: Good; 5: Best

Item	Ventilation	Lighting	Noise
Average	3.57	3.86	2.86

Item	Shelter	View	Substrate	Enclosure condition
Average	3.00	2.57	1.71	1.43

Item	Amount of litter	Drainage	Furniture	Enrichment
Average	3.00	1.14	2.00	1.43

Item	Social grouping	Private areas	Public contact	Size
Average	4.14	1.00	2.14	2.14

Average score: 2.40

The animals

The zoo housed at least five binturongs (we were informed by a keeper that there were a total of eleven binturongs, including two babies), one masked palm civet, three Asian small-clawed otters, two Malayan porcupines, five sugar gliders and two plantain squirrels, in seven enclosures.

The enclosures and husbandry

Most of the small mammals were housed in small cages or pits. All of the animals would benefit from much larger enclosures. The otter enclosure was the only enclosure of an acceptable size.

The otters, porcupines and most of the binturongs were housed in pit-style enclosures with a very limited view out, which are known to be detrimental to animal welfare.

All of the enclosures were situated close to the visitor walkway, which could get crowded and noisy at times.

The main binturong enclosure (the pit-style enclosure), the otter enclosure and the porcupine enclosure all lacked sufficient and/or effective shelter.

Most of the other enclosures had concrete floors, which are detrimental to animal welfare, and no areas of soft substrate. All concrete floors were poorly drained and covered in algal growth.

All of the enclosures lacked sufficient and species-specific furniture. The smaller of the binturong enclosures and the civet, squirrel and sugar glider enclosures did not contain vegetation or elevated furnishings; just a few bare branches. In the larger binturong enclosure, furniture was incorrectly positioned on the ground. In this enclosure there was only one resting platform for five individuals, and most of the binturongs were sleeping on the ground. All enclosures lacked appropriate sleeping areas, for example the nocturnal sugar gliders and slow lorises had no covered, dark areas.

Enrichment was limited to a small amount of vegetation in the larger binturong enclosure and the porcupine enclosure and pebbles and leaves in the otter enclosure. None of the other enclosures contained any enrichment.

None of the enclosures contained private areas for animals to escape from visitor view, the view of animals in neighbouring enclosures or from each other. This was a particular concern for those animals in cages which had other cages adjoining them.



Much of the furniture in this binturong enclosure was inappropriately positioned on the ground.



Visitors were encouraged to dangle bread on the end of a bamboo pole into the binturong enclosure.

Visitors could easily touch most of the animals, and for many enclosures no public stand-off barriers were in place. Visitors were encouraged to feed the binturongs and civet. This posed a serious concern in terms of zoonoses spread and risk of scratch and bite injuries, as well as posing animal welfare concerns.

The binturong cage and civet cage both contained significant rusted parts, posing a potential health and safety hazard. Some enclosure contained other harmful items. Both binturong enclosures, the civet enclosure and the sugar glider enclosure all contained protruding nails, and the main binturong enclosure also contained a broken plastic barrel with sharp edges. The civet and squirrel enclosures both contained sharp pieces of loose wire.

The otter and porcupine enclosures had broken concrete flooring. Of particular concern was the floor of the porcupine enclosure, where the soft substrate had been worn away to reveal rusty metal grids which the porcupines had to walk on and in which they could easily get their feet trapped.

Behaviour

The small-toothed palm civet displayed pronounced stereotypic pacing behaviour, and also stepped repeatedly from side to side.



The sand substrate in the porcupine enclosure had worn away, revealing potentially dangerous rusty metal grids.



This civet paced repeatedly from side to side.

Recommendations short-term

- Provide more space - additional surface area can be created by the provision of more structures and furniture in the enclosures.
- Provide large areas of soft substrate (e.g. woodchips, soil, grass and/or sand) in all of the enclosures.
- Provide furniture for climbing, resting platforms that are not made of concrete (e.g. wooden resting platforms) and trees/vegetation. Provide furniture high in the enclosures for the binturong and civet. Provide suitable sleeping/resting areas for all individuals.
- Provide movable objects for play and manipulation.
- Establish a regular and varied behavioural enrichment programme, which stimulates all five of the animals' senses, to provide for the behavioural and psychological needs of the animals.
- Provide visual barriers and private areas where the animals can escape entirely from visitor view, the view of animals in neighbouring enclosures and each other, ensuring there is at least one private area per animal.
- Ensure all enclosures are well-drained.
- Remove all rust from the enclosures. Remove all other harmful items from the enclosures.
- Install effective public stand-off barriers that prevent visitors making contact with the animals.
- Stop the public feeding of the animals.



A binturong and civet were housed in small, dark cages with algal-covered concrete floors.

Recommendation long-term

- Move all of the animals to more spacious, naturalistic enclosures that allow them to move and behave naturally. The enclosures they were housed in at the time of this investigation were grossly substandard.

3.10 Port Dickson Mini Zoo

Enclosures surveyed

- Two pig-tailed macaque enclosures (4 animals).
- One pig-tailed macaque/long-tailed macaque enclosure (3 pig-tailed macaques, 1 long-tailed macaque).

Port Dickson Mini Zoo apparently used to be a rabbit park, before expanding its collection to include a number of other wild and domestic species. Today, the zoo houses a wide range of animals including macaques, camels, deer and a variety of birds. The zoo appeared old and



run down, and during our visit we saw only two other visitors. Because of its location and run down appearance, it seems unlikely that the zoo attracts many visitors.

Since our previous visit to Port Dickson Mini Zoo in 2009, a number of mammals were no longer present, including a raccoon, a porcupine, six pig-tailed macaques and two long-tailed macaques, and there were no longer macaques chained to trees. However, there was one new baby pig-tailed macaque.

Overall results: Macaque enclosures

1: Worst; 2: Poor; 3: Average; 4: Good; 5: Best

Item	Ventilation	Lighting	Noise
Average	3.00	3.00	2.00

Item	Shelter	View	Substrate	Enclosure condition
Average	4.00	3.00	1.00	1.00

Item	Amount of litter	Drainage	Furniture	Enrichment
Average	3.00	1.00	2.00	2.00

Item	Social grouping	Private areas	Public contact	Size
Average	3.33	1.00	1.00	2.00

Overall average score: 2.16

Port Dickson Mini Zoo housed at least seven pig-tailed macaques and one long-tailed macaque, in three enclosures.



Three of the macaques exhibited severe fur loss.

Three of the pig-tailed macaques exhibited extensive fur loss over their bodies.



Left: All of the enclosure floors were covered in dirt, algae, old food and faeces. Right: All of the enclosure walls were filthy.

The macaque enclosures at Port Dickson Mini Zoo failed to meet the acceptable standards for the well-being of the macaques. The enclosures were of outdated small cage design and provided substandard living environments which were made worse by poor husbandry practices.

All of the enclosures surveyed failed to meet most of the acceptable standards in Section 2.3.

The zoo should not acquire additional animals as current conditions are so poor. The current enclosures should be improved first as a matter of urgency.

The main areas of concern were:

1. Failing to provide a hygienic environment. All of the enclosures had dirty floors, covered in old food, faeces and urine. The walls of every enclosure were filthy and they were all infested with flies.
2. Failing to provide soft substrates. The enclosures all had concrete floors and lacked any soft substrates.
3. Failing to provide a safe living environment. None of the enclosures provided a safe living environment. All of the enclosures contained large rusted areas, as well as other dangerous items, such as rusty chains, loose, sharp pieces of metal wire and broken wire mesh with sharp edges.
4. Failing to provide a well-drained enclosure. All of the concrete floors were poorly drained and covered with extensive algal growth.

5. Failing to provide sufficient species-specific furniture. None of the enclosures contained sufficient furniture. When furniture was provided it was minimal, consisting of just one or two small narrow beams.



The enclosures were all severely lacking in furniture and complexity.

6. Failing to provide sufficient species-specific enrichment. None of the enclosures contained sufficient enrichment. One enclosure had a tyre and log on chains, whilst the others had old rusty chains only.
7. Failing to provide sufficient private areas. None of the enclosures had private areas to allow the macaques to escape from visitor view, and from the view of each other.
8. Failing to ensure that visitors could not touch the animals. For all of the enclosures, visitors could easily touch the animals. This posed a serious safety concern in terms of risk of scratch and bite injuries and the spread of zoonoses, and was problematic from an animal welfare perspective as well.
9. Failing to provide sufficient space. None of the enclosures provided sufficient space. The enclosures were too small to encourage most natural behaviours for the macaques.
10. Failing to meet the animals' needs in terms of noise. All of the enclosures were situated near a noisy generator.
11. Some of the macaques displayed stereotypic behaviours, including pacing and bar biting.



The enclosures were in a state of disrepair.

Recommendations short-term

- Thoroughly clean all the enclosures, then ensure that the enclosures are effectively cleaned at least twice a day.
- Provide more space - additional surface area can be created by the provision of more structures and furniture in the enclosures.
- Provide more furniture for climbing and more furniture high up, preferably including trees and/or vegetation. Provide suitable sleeping/resting areas for all individuals.
- Provide areas of soft substrate, for example sand, woodchips, grass and/or soil.
- Ensure that enclosures are well-drained.
- Provide movable objects for play and manipulation.
- Establish a regular and varied behavioural enrichment programme, which stimulates all five of the animals' senses, to provide for the behavioural and psychological needs of the macaques.
- Provide visual barriers and private areas where the macaques can escape entirely from visitor view, and from each other.
- Remove all rust from the enclosures. Remove all other dangerous items from the enclosures.

Recommendations long-term

- Move the macaques to much larger, naturalistic enclosures as a matter of urgency. The enclosures they were in at the time of this survey were entirely substandard.

CHAPTER 4. CONCLUSION

The animal housing and husbandry standards at the ten Malaysian zoos profiled in this report fell far short of meeting the ACRES Acceptable Standards for the Well-being of Animals, which are based on international guidelines and legislation.

Clearly, there is much that needs to be urgently improved in these zoos, to ensure a higher, more acceptable standard of welfare is experienced by the animals. It was apparent from assessing the living conditions of the designated focus animals that most were housed in entirely inappropriate environments and that husbandry standards in these facilities were poor.

The abnormal stereotypic behaviours displayed by many animals, as well as the numerous physical health problems encountered, reinforced the fact that living conditions were suboptimal and problematic.

ACRES is confident that the formation of myZOO (a coalition of Malaysian animal welfare and conservation groups), together with the imminent passing of the updated Wildlife Conservation Bill in Malaysia, will be a strong starting point to push forward with efforts to engage Malaysian zoos and improve the welfare of the animals in their care. We are confident that myZOO and PERHILITAN can work together to improve animal housing and husbandry standards at these ten zoos and that this will serve as a starting point for a systemic programme of upgrading for all Malaysian zoos.

At all of the zoos reviewed in this report, many immediate short-term improvements can be achieved at relatively little cost, such as providing enrichment items for animals, as well as ensuring that their basic needs, such as drinking water, are met. A list of resources on behavioural enrichment is included in Appendix II of this report.

ACRES would be pleased to provide assistance to every zoo wishing to improve the welfare of the animals and to assist myZOO and PERHILITAN in implementing these changes if requested.

In the longer term, the zoos can, with the assistance of myZOO and PERHILITAN, do even more to improve the living conditions for their animals, by phasing out old-style cages, pits, vivariums and tanks and moving towards more progressive ways of housing animals, such as

natural forested enclosures, which allow animals to engage in normal movements and express natural behaviours.

ACRES also encourages all zoos to phase out the use of animals in unnatural, circus-style shows, as well as other uses that are detrimental to well-being, such as using animals in photography sessions. Instead, the focus should be on housing animals in their naturalistic habitats where they can engage in more natural behaviours.

Malaysia is growing as an international tourist destination, so it is important that all captive animal establishments operate at an internationally acceptable professional standard.

ACRES looks forward to working with myZOO and PERHILITAN, to address the most problematic situations in Malaysian zoos, to eradicate the worst conditions, to raise the standard of animal welfare and to improve general standards in all Malaysian zoos.

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APPENDIX I: ZOO SURVEY FORM

Ventilation?

1. Animal housed in an enclosed tank or vivarium with no artificial ventilation.
2. Animal housed in an enclosed tank or vivarium with artificial ventilation.
3. Animal housed in wire meshed enclosure (with walls or cages on some sides) with an average amount of natural ventilation.
4. Animal housed in completely wire meshed enclosure (with no walls) with good natural ventilation.
5. Animal housed in outdoor open-air enclosure with natural ventilation.

Lighting?

1. Animal housed in an indoor enclosure with no natural or artificial lighting.
2. Animal housed in an indoor enclosure with only artificial lighting.
3. Animal housed in an indoor/outdoor enclosure with artificial lighting and/or limited natural lighting.
4. Animal housed in an enclosure with natural lighting at certain times of the day only.
5. Animal housed in an enclosure with natural lighting throughout the day.

Noise?

1. Animal housed in a constantly noisy environment (directly beside a playground or loudspeaker).
2. Animal housed near a constantly noisy environment.
3. Animal housed near an environment that may be noisy at times.
4. Animal housed in quiet environment.
5. Animal housed in quiet environment and with signs urging visitors to be quiet.

Is sufficient shelter provided in outdoor enclosures to give protection from inclement weather and excessive sunlight?

1. No shelter is provided.
2. Shelter is provided but insufficient for all the animals in the enclosure or is not completely effective.
3. Amount of effective shelter provided is just sufficient for all the animals in the enclosure.
4. More than sufficient effective shelter is provided for all the animals in the enclosure.

5. More than sufficient effective and species-specific located shelter is provided for all the animals in the enclosure.

Can the animals view beyond the enclosure?

1. Animals are housed in an indoor enclosure with no outdoor view.
2. Animals are housed in a pit enclosure.
3. Animals are housed in a tank, cage or wire-meshed enclosure with outdoor view.
4. Animals are housed on an island or grotto where the animals have partial view or are able to climb to a position where the animals can view beyond the enclosure.
5. Animals are housed on an island where the animals have complete and unobstructed view of the surrounding natural environment at ground level.

Are substrates used for the floor surface suitable for the animals?

1. Concrete, hard or wire meshed floor.
2. Soft substrate available in less than 50% of the floor.
3. Soft substrate available in 50% - 74% of the floor.
4. Soft substrate available in at least 75% of the enclosure.
5. Soft substrate available throughout the enclosure.

Are enclosures and enclosure barriers in such a condition that there is no likelihood of harm to animals?

1. Presence of more than 5 harmful items or large areas of rusty parts or animals in contact with or ingesting harmful item.
2. Presence of 1 to 4 harmful items or small areas of rusty parts.
3. Presence of only introduced harmful items (litter, etc)
4. No presence of harmful items.
5. No presence of harmful items and enclosure appears well-maintained.

Does the enclosure contain litter?

1. Presence of more than 5 pieces of litter or animal/s ingesting harmful item.
2. Presence of 1 to 4 pieces of litter.
3. No presence of litter.
4. No presence of litter and signs at enclosure advising visitors not to throw litter or feed the animals.
5. No presence of litter and no way that visitors can throw litter into the enclosure.

Is the enclosure well-drained?

1. Presence of large pools of water or algae.
2. Presence of large pools of water but no algae.
3. Presence of small pools of water but no algae.
4. Enclosure is well-drained.
5. Enclosure is well-drained and clean.

Is sufficient species appropriate furniture present in the enclosure?

1. No furniture is provided in the enclosure.
2. Furniture is provided but insufficient for all animals.
3. Furniture is provided and just sufficient for all animals.
4. Species-specific furniture is provided and just sufficient for all animals.
5. More than sufficient species-specific furniture is provided for all animals.

Are active efforts made to enrich the environment?

1. No enrichment is available.
2. Enrichment is available but insufficient for all the animals in the enclosure.
3. Enrichment provided by the zoo for all the animals.
4. Species-specific enrichment provided for all the animals.
5. More than sufficient and a variety of species-specific enrichment is provided.

Are the animals housed in an appropriate social group?

1. Social animal housed singly.
2. Social animal housed singly but with contact with another individual; Animals housed in inappropriate social grouping and/or constant conflicts observed.
3. Highly social animal housed in a pair.
4. Highly social animal housed with more than 2 in a group.
5. Animals housed in appropriate social group.

Can the animals retreat from public view and from the view of each other?

1. No private areas are provided.
2. Private areas are provided but insufficient for all the animals.
3. Number of private areas provided equals the number of animals in the enclosure but are in inappropriate positions.
4. Number of private areas provided equals the number of animals in the enclosure and are in appropriate positions.
5. Number of private areas provided is greater than number of animals in the enclosure and are in appropriate positions.

Do the enclosure barriers effectively prevent contact between public and the animals?

1. The visitors can touch the animals.
2. A barrier is present but easily breached.
3. A barrier is present but can be breached with difficulty.
4. There is no way visitors can touch the animals.
5. There is no way visitors can touch the animals and signs at enclosure advise visitors not to feed or touch the animals.

Are the animals provided with space sufficient to encourage natural movements and behaviours?

1. 2. 3. 4. 5. Size: _____

Do the animals appear to be in good physical health?

Are there signs of abnormal behaviours (observations must be more than one day if stereotypic behaviour is not recorded)?

APPENDIX II: ENRICHMENT INFORMATION

Introduction

Enrichment is the term used for adding features back into a captive environment that replicate or simulate features that animals may naturally find in the wild. The natural environment provides animals with daily challenges such as searching and hunting for food, seeking shelter and interacting with other individuals. In captivity, food is usually provided for the individual, the enclosure may remain stagnant and other individuals may or may not be present to interact with. By enriching a captive environment the aim is to provide an interesting and complex variety of activities to stimulate the animal and prevent stereotypic behaviours from developing and to increase the frequency of natural behaviours.

The added benefit of adding an enrichment programme to the management of captive animals is that it increases the educational benefit that the zoo visitor gains from seeing animals that are engaged with a natural behaviour or activity. The educational role of zoos is a key goal, and so by providing enrichment the visitor can experience a more realistic interpretation of how the animal lives in the wild. Visitors enjoy seeing animals in a naturally active state rather than a passive state, so providing enrichment activities for animals also enhances the visitor's experience.

Enrichment devices must be provided on a daily basis. This will ensure that the animal does not become bored and revert to stereotypic behaviours. Stereotypic behaviours can be very difficult to break, and so even if an enrichment activity is offered once or several times a week, the animal may be too absorbed in the stereotypic behaviour to engage in an alternative activity. Therefore, the enrichment programme must be initiated from the very beginning when an animal first enters captivity, preferably before stereotypic behaviours can start. If stereotypic behaviour is already occurring, then time and persistence is required to divert the animal's attention to the enrichment activities on offer.

Enrichment devices also need to be continually changed, or the enrichment will simply become another routine for the animal. Reinforcement usually needs to be provided to keep the animals interested in the enrichment device, for example, if the animal picks up a

toy to play with it and food is inside the toy, then the animal will remain interested in the toy for a longer period of time. Simply placing objects in an enclosure with the expectation that the animal will play with it may not be successful. Careful observation of what enrichment devices are working and which are being ignored needs to be recorded, and the programme needs to be adjusted accordingly to include more of the devices that are being used.

A random pattern to enrichment is necessary so the animal does not anticipate certain events occurring or objects appearing. For example, food can be delivered at random times throughout the day. Other devices such as puzzles, toys and new furniture for the enclosure need to be continually changed before the animal becomes bored with them. New ideas need to continually be added to the enrichment programme, so there is never anything expected. Enrichment will not just improve the animals' psychological health, but will also increase the physical health by increasing the amount of exercise the animal receives.

Enrichment can be divided up into five different categories: Social, Cognitive, Physical, Sensory, and Food enrichment. Each of these five areas should be addressed for each animal housed in captivity.

- Social enrichment is ideal for species that usually live in groups and therefore should be housed in groups with members of suitable age and gender. Mixed species groups are appropriate for some animals as well, such as some primates and birds.
- Cognitive enrichment is usually achieved by providing food puzzles which ensure that animals need to spend time learning how to retrieve the food.
- Enrichment of the physical environment refers to adding furniture that provides the animal with different levels at which to spend time and objects to climb or hide under. Physical enrichment should aim to increase the exercise levels of captive animals and should be species specific, e.g. provide climbing objects to animals which climb in the wild and shelters for animals that usually remain hidden.
- Sensory enrichment is that which increases the use of the animals senses such as smell, touch and sight. Providing different substrates on which the animal can walk will provide different textures, adding new smells such as objects marked with other animals' urine or dung can stimulate smell, and providing levels for the animal to reach so that he/she can see out of the enclosure can provide sensory stimulation.

- Food enrichment involves providing different foods so that the diet is not repetitive and also providing it in different ways so that the animal needs to search for it or retrieve it from a puzzle. This increases the amount of time feeding takes and provides the animal with an activity during the day.

Safety concerns

When developing and implementing enrichment ideas, the safety of the animals, staff and public are of utmost importance. This checklist may help in reviewing safety issues:

- Can an animal get cut by, caught up in, hung up on, or trapped inside the exhibit structure or device?
- Can the enrichment item be used as a weapon against a co inhabitant?
- Can the item be thrown as a projectile out of the enclosure and cause injury to the public or staff members?
- Can the item damage or destroy the enclosure?
- Can the item drop or fall onto a cagemate?
- Can it be ingested? And if so, will it cause gut impaction or linear obstruction?
- Can it lead to an escape or aggression?

Composition

- Before introducing an object, ensure that nails are not used. Use instead, screws and non-toxic glue.
- All paints used must be non-toxic.
- Natural materials such as cotton, wool hemp and sisal are highly preferable to plastics and nylon.
- Cardboard boxes must be free of staples or plastic tape.
- Paper bags must be free of strings, plastic and inner linings.
- Recycle items are commonly used. However, ensure that the items are thoroughly cleaned before use.
- Detergent bottles and similar items should not be reused in case of poisoning.

Resources

There are several online resources, such as www.enrichmentonline.org, which provide many enrichment ideas for all species. The books “Environmental Enrichment for Captive Animals” by Robert J. Young and “Second Nature: Environmental Enrichment for Captive Animals” by David J. Shepherson are useful for reference.

Enrichment for focus species

The following outlines some of the main considerations when designing enrichment programmes for elephants, bears, big cats and apes, and a few sample enrichment ideas for each.

Elephants

Elephants who are not provided with enrichment typically spend time swaying from side to side. Elephants in the wild spend large amounts of time walking and searching for food and water. Elephants in captivity do not receive as much exercise and frequently develop foot problems. Therefore, in order to keep them psychologically and physically occupied, it is recommended that elephants be allowed to walk a minimum of 10km per day. It is also recommended that elephants be housed outdoors (providing they have adequate shade and shelter and the climate is appropriate to remain outdoors) and have a variety of safe objects to rub their bodies against for normal grooming. They should also have adequate water pools in which to bathe. Food should be provided in novel ways so they can spend time foraging. Elephants should always be housed in social groups, ideally no fewer than five individuals.

Examples of enrichment ideas

- Hide food in empty cans (e.g. fruits and vegetables in an empty beer keg) so they need to shake the can to receive the food. Move furniture around the enclosure so it does not remain in the same place at all times. Provide furniture with different textures (e.g. tree poles, rocks) for rubbing. Provide logs to be pushed and rolled around. Logs can also provide olfactory sensation.

Bears

Bears have a need to forage for food and have a highly developed sense of smell. Therefore, hiding food treats and providing new odours are excellent sources of enrichment. Bears are not always sociable and so

appropriate hiding 'caves' need to be provided for when they need to retreat from the public eye. Polar bears need plenty of space and a clean cool pool for swimming. Asiatic black bears and Malayan sun bears also enjoy playing in water.

Examples of enrichment ideas

- Supply peanut butter or honey-comb in tree branches to encourage climbing.
- Provide with whole coconuts to peel open. Old phone books can also be given for ripping up.
- Freeze fruits in large ice-blocks so they take time to break open the ice for the food treat.
- Provide garbage cans or large PVC pipes stuffed with straw and food treats (e.g. fish for polar bears). Once the food and straw has been removed they enjoy the food and also like to lay on the straw.
- Add floating toys or treats (e.g. ice blocks) in water to encourage swimming and more exercise.
- Provide different smells by adding herbs and flowers or scented oils (e.g. peppermint, ginger, cloves, vanilla) hidden around the enclosure. Sawdust from fragrant woods is also very stimulating to their sense of smell and they enjoy rolling in the sawdust.
- Drill holes in logs and hide honey, peanuts, raisins etc. inside.

Big cats

The types of behaviours that big cat enrichment is designed to encourage are grooming, water play, simulated hunting, sunning, climbing and denning. Many big cats are solitary except for lions, but communicate with each other by leaving behind scents. Therefore adding new scents to the enclosure can be very enriching to solitary animals.

Examples of enrichment ideas

Dietary enrichment

- LIVE PREY: feeder fish, mealworms, crickets, grasshoppers, grubs, lizards, rodents.
- WHOLE (DEAD) CARCASS: usually given before visitors arrive. Allows carnivores to display natural feeding behaviours away from the public eye.
- LOGS: Holes are drilled into logs and filled with scented food items to give the carnivore a chance to forage, rip apart and dig for insects and other treat items. A slanted log is especially exciting

and treats can be placed at the higher end to promote climbing and sunning.

- CRICKET FEEDER: PVC tube with holes and capped ends filled with crickets which eventually climb out.
- Freeze a bone in ice and allow it to float, so the cat can retrieve it from a pool of water.
- Hang a hessian sack from a tree filled with meat so the sack must be torn first. Alternatively, a sack with food can be attached to a spring, fixed to a tree and then the tugging to get to the food will simulate a struggling prey animal.

Exhibit enrichment

- SUNNING: Add large rocks, logs, boxes to allow the cat a spot in the enclosure to sun itself.
- VISUAL BARRIERS: Vegetation, hollow logs, large rocks and trees can provide privacy and a sense of security and allow simulated stalking activity.
- LARGE BOXES: Create temporary dens.
- TREES: Both natural and artificial provide rubbing areas and provide scratching, and climbing opportunities.

Play / social enrichment

- CARDBOARD: boxes, paper towel tubes, carpet tubes, cereal boxes can have treats hidden within.
- SNAKE SKIN SHEDS: Adding shedded snake skins around enclosures occasionally can elicit excitement and scent marking activities.
- SCENT MARKINGS: Spray scented water such as vanilla, urine, etc. (see primate section for list of scents) around enclosure using a water spray to encourage the cat's instinct to scent mark. Introduce other animals' scents into the enclosure, either by adding faeces and urine soaked materials or allowing live animals access to the enclosure while the cats are in their night den.
- WATER PLAY: Add a pool feature for carnivores to play and investigate. Larger pools can be used for aquatic carnivores. Ice cubes with frozen fish and whole apple can be added into pool. Boomer balls can also be added. This is especially important for fishing cats.
- SACKS WITH HAY: Sacks filled with urine scented hay can be tossed into the enclosure for animal to hunt and attack.
- ROUND FRUITS: Pumpkins, melon, etc. can be used for the animals to hunt and play with.

Apes

The high intelligence of apes requires a complex and challenging enrichment programme. Apes are usually sociable to some degree, engage in play behaviour and grooming. Housing apes in social groups appropriate to species is necessary for normal behaviours. Feeding should be designed around species specific behaviour, for example if they feed on the ground or in tree tops in the wild, this should be emulated in captivity. Puzzles from which to get food are a good source of enrichment, but need to be changed frequently due to the high learning capability of apes.

Examples of enrichment ideas

Dietary enrichment

- **ROTATING BUCKET:** A bucket with a rotating lid with ½” hole filled with fruits, treats and vegetables can be provided twice a month.
- **FROZEN ICE BLOCKS (FRUIT/FISH):** A bucket filled with fruit, juice, whole fish or large fish chunks, with a rope frozen into it, can be hung in an enclosure. Mealworms and crickets can also be used. This encourages co-operative group behaviour in chimps to get to the food.
- **STUFFED BANANA STALK:** Supply a large banana stalk stuffed with food treats in the stem. The leaves can be torn off and played with, and the food rewards exploration. Pasty food increases foraging.
- **FEEDER TUBE:** A 2 ½” PVC capped pipe with ½” slit along side filled with fruits and vegetables can be hung in the enclosure. Mixing strains of hay or non-toxic plant clippings in with trail-mix or other treats takes more picking and pulling than a feeder with small easy to pull out food pieces.
- **FILLED BAMBOO TREATS:** Bamboo is cut fresh and at the nodes, leaving one end open. The bamboo is filled with jello or juice and refrigerated or frozen, whichever is appropriate, for at least 24 hours.
- **LOGS:** Drill hole in a section of bamboo and fill with treats approximately the size of the hole. Introduce into enclosure between meals and remove the next day. Perform weekly.
- **HARD-TO-EAT:** Introduce hard-to-eat treats such as hard wild seed pods, sugar cane, coconuts and hard shelled nuts like walnuts.

- **TOOLS:** Encourage tool using by placing treats such as peanuts outside cage, out of arm's reach. Leave sticks nearby. Demonstrate if needed.
- **CRICKET FEEDER:** PVC tube or fairly mature bamboo pole with holes and capped ends filled with crickets, which eventually climb out. The smaller you make your holes, the longer it will take all the crickets to creep out which keeps the dispenser interesting for longer. If the animal would enjoy reaching inside, make your holes to allow this if you like.
- **SNOW CONES:** Crushed ice balls with juice on them.
- **STUFFED PINE CONES:** Usually bigger cones with about a tight finger's space between the "shingles" will be easiest to stuff. Cones can be stuffed ahead of time and refrigerated until use. Any paste-like food item may be used (e.g., peanut butter, other nut butters, raisins, fruit paste); also seeds or nuts can be mixed in.
- **BOLT FEEDER:** Constructed out of PVC tubes, primate would have to manipulate food through a pipe using their fingers and holes along the tube to the 'exit' hole which is big enough for food to fall out.
- **VARY TIMINGS:** Feeding food at different timings, more frequently or less, but keeping the same total amount of food being fed to ensure proper nutrition.
- **WATER FORAGING:** Offer water play only under supervision. For chimpanzees scatter grapes, peanuts, vegetables or other treats in the bottom of a plastic pool. Remove uneaten food to prevent contamination.
- **COCONUT/MELONS/PUMPKINS:** These have a ball-like quality which is edible once successfully opened.
- **BAGS:** Old mealworm bags with food treats placed inside to encourage foraging.
- **LAYERED BAGS:** Layered bags and boxes unravel to find edibles inside. To make the adventure more rewarding, sprinkle a few treats like pumpkin seeds, raisins or fruit and vegetable wedges in each layer. In a cage with more than one ape consider offering each ape his own treat bag especially if your monkeys are adults.
- **SIMULATED TERMITE MOUND:** Using a large plastic barrel with holes and slots cut out, the apes can use tools and fingers to forage for sticky food placed in a tub inside of barrel. Foods such as peanut butter, jelly, tomato paste and oatmeal.
- Hide food in a mop head, for example, thread the mop with cereal loops, so the apes can search through the mop to find the food, which is a similar action to grooming other members of the group.

- Recycled papers or material can be torn and foraging material can be interspersed. The apes can search through for food and use the materials for nesting.

Exhibit enrichment

- Provide ropes of varying thickness, some free swinging, some fixed to permanent structures, to enable natural swinging movement around enclosure. These must be secured and checked for safety before use.
- Provide olfactory stimulation by adding flowers or scented objects (animal scents or essential oils) around the enclosure.

Play / social enrichment

- OLD LINENS: sheets, towels, pillows, etc. (can be woven into hammocks and tied into caging, filled with pine needles, forage foods, etc. and tied at the ends or used for nest building.).
- PLASTIC BARRELS: free or affixed to walls, for: nests, tunnels, forts, filled with boxes, blankets, substrates and treats. Ensure the animals cannot become trapped inside them.
- SMELLS: Scents used can vary from cooking spices, perfumed oil, lotion, hunting scents, or by bringing in items from other animal exhibits. Aromatic flowers, onions, garlic and other strong smelling items can be used here too. Other scents that can be used are maple, vanilla, aniseed, pineapple and strawberry; cooking spices, perfumed oil, hunting scents, or by bringing in items from other animal exhibits *Be sure these items have been given clearance by the veterinary staff, to prevent the introduction of diseases or parasites.
- RECYCLED ITEMS: cardboard boxes, shredded paper, cardboard tubes, plastic jugs, either alone or stuffed with forage foods.
- MIRROR: It is recommended that the mirror be large enough that animal can observe their entire body. Large variation in individual interest is common. Best interest is seen if mirror is covered most of the time and revealed only occasionally.
- RATTLES: Fill capped PVC pipes with beans to produce sound.
- GNAWING STICKS: Dry deciduous tree branches cut into 'gnawing sticks' of length of 12-30 cm and a radius of 2-6, do *not* lose their novelty effect, since they steadily change their configuration and texture due to constant wear and progressive dehydration.