

### LOCATION

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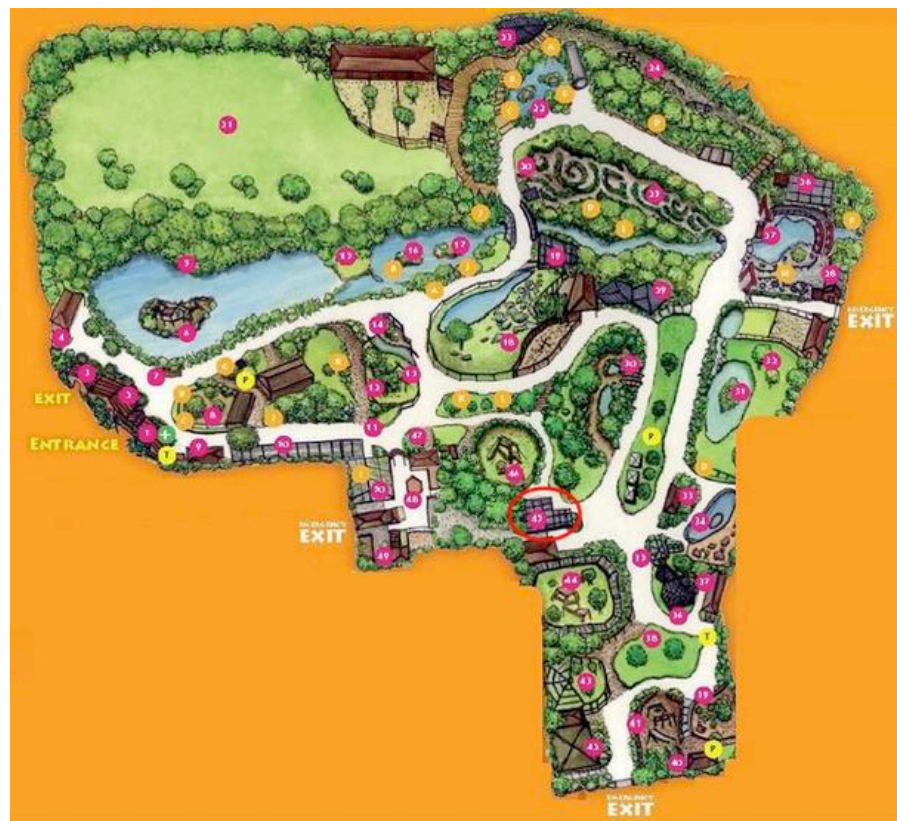
**DESCRIPTION:** Initially, the exhibit was planned as a renovation of the old Vasa parrot (*Coracopsis vasa*) enclosure as it was getting old and in need of reconstruction. The coati (*Nasua nasua*) exhibit, housing two elderly coatis, next door was in need of renovation too. As the parrot enclosure was being rebuilt, it was decided to move on the aging coatis. The idea then evolved to combine the two exhibits into a Madagascar themed area, with more species sharing the same environment.

This can then be used to show the public several species that coexist in the fragile habitats of Madagascar, and our support through our conservation schemes in Madagascar. Renovating the parrot enclosure allowed more species to share this exhibit. There are plans to bring in Madagascan teal (*Anas bernieri*), and Malagasy turtle doves (*Nesoenas picturata*). The development of the old coati exhibit allowed new mammal species to be brought in, such as the crowned lemur (*Eulemur coronatus*) and narrow-striped mongoose (*Mungotictis decemlineata*).

Visitors enter the exhibit into an enclosed "corridor" with viewing windows into both the mammal and bird aviaries. There is also a window into the lemurs' indoor housing, allowing the visitors to view them when they are not in the aviary. The visitor can then enter a shelter through a set of doors that is attached to the bird aviary. Visitors are kept on their shelter by a wall at waist height. This allows free viewing and the birds to interact with the visitors,



Narrow Striped Mongooses © Jacqueline E. Noble, 2010



Overview - Madagascar Exhibit shown by a red circle

while maintaining easy escape from them.

**SIZE:** The whole exhibit occupies an area of 178.4m<sup>2</sup>. Indoor areas are 2.5m high, outdoor areas are 3m high.

**COSTS:** GBP 15,000 including design.

The exhibit was designed and constructed in-house, costs were purely for materials.

## ANIMALS

Family	Species	Common Name	Capacity
Eupleridae	<i>Mungotictis decemlineata</i>	Narrow-striped Mongoose	1.1.1
Lemuridae	<i>Eulemur coronatus</i>	Crowned Lemur	2.2.2
Phasianidae	<i>Margaroperdix madagascariensis</i>	Madagascan Partridge	1.1.1
Psittacidae	<i>Agapornis cana</i>	Madagascan Lovebird	2.2.10
Psittacidae	<i>Coracopsis vasa</i>	Greater Vasa Parrot	3.1.3

## SIZE

Use	Indoors		Outdoors		Total Exhibit
	accessible	total	accessible	total	
Animals	13	13	132	132	145
Visitors	15	15	16	16	31
Others	2.4	2.4			2.4
<b>Total</b>	<b>30.4</b>	<b>30.4</b>	<b>148</b>	<b>148</b>	<b>178.4</b>

**OPENING DATE:** March 2010

**DESIGN:** Beginning: December 2009; Design: Newquay Zoo staff, Cornwall, UK

**CONSTRUCTION:** Beginning: January 2010  
Construction: Newquay Zoo staff, Cornwall, UK

**PLANTS:** A rock wall and many species of shrubs and grasses were reused from the previous enclosure for coati (*Nasua nasua*) as the plant and environmental framework for the new mammal exhibit.

In the bird aviary, which had been the previous Vasa parrot (*Coracopsis vasa*) enclosure, the undulating terrain and the planting with several grass and phormium species were kept. Shrubs were tested in the aviary, but were destroyed by the parrots. A subtropical display was planted outside the aviary to provide a visual barrier that they could not damage.

**FEATURES DEDICATED TO ANIMALS:** The indoor areas of both aviaries are thermostatically controlled to keep the animals at a

preferred ambient temperature. Off-show area of the bird aviary is split into two enclosures to allow for separation of individuals during breeding seasons. The mammal exhibit's off-show area is separated into three enclosures, one for the lemurs and two for the mongooses. The entrance to the lemur's indoor facility is sufficiently

off the ground to discourage the mongooses from entering. The mongooses are provided two indoor areas to allow the male to be separated after a youngster is born.

Both aviaries are planted to provide enrichment and allow the exhibition of natural behavior of all species. The mammals have forage feeders, and often scatter feed for behavioural enrichment. The birds are also provided with feeders, and given fruit kebabs and often browse.

**FEATURES DEDICATED TO KEEPERS:** There are double door systems for keeper entrance to both aviaries, and a corridor behind metal gates in the off-show areas. Sliding door systems throughout the exhibit facilitate separating and health checking individuals in different indoor enclosures. All indoor enclosures are heated and lit, for ease and comfort of the keeper, as well as comfort of the animals. Each indoor enclosure has neutral plastic wall linings and tiled floors for easy cleaning.

**FEATURES DEDICATED TO VISITORS:** The exhibit was designed with a covered viewing area for viewing the mammal aviary, and a shelter for viewing



External view of aviary and the public exit from the shelter © Stewart Muir, 2011



Vasa parrot eating skewered food © Scott Pooley, 2011



Feeder © Scott Pooley, 2011



View into the mammal aviary, as seen from the visitor walkway © Scott Pooley, 2011



Environmental Enrichment - Female crowned lemur concealed in the shrubs © Scott Pooley, 2011



Keeper access to the off-show enclosures © Scott Pooley, 2011



View into the bird aviary from the public gallery in the shelter © Scott Pooley, 2011

the bird aviary, as there are few viewing areas in the zoo that protect the visitor from the weather.

**INTERPRETATION:** There are large graphics around the entrance to the exhibit, displaying the zoo's conservation programs in Madagascar. More visuals will be added for the visitors inside the exhibit, including a large display, in the bird viewing shelter, about the unique fauna found in Madagascar. Talks about the unique fauna and the conservation programs the zoo supports in Madagascar are often given in the exhibit.

**MANAGEMENT:** Three off-show enclosures in the bird aviary allow keepers to separate individual birds. Two off-show enclosures for the mongooses allow the male to be separated when the female is with young. Each aviary was specifically designed to have areas for forage feeders, scatter feeding (mammals), and browse placement (birds).

**RESEARCH:** Soon after the opening of the exhibit, research was done by a student and a keeper on the interactions between the lemurs and the mongooses. This kind of mixed exhibit has not been done, as Narrow-striped mongooses sometimes predate upon

lemurs. The research showed little interaction between the species. The lemurs occasionally visit the mongooses' indoor areas, but it appears to be out of interest, and the mongooses used to do the same, until the branch leading to the lemur's entrance was removed. Occasionally, the male lemur has been observed "playing" with the mongooses: a mongoose climbs in the plants, the lemur jumps at the plants, and the mongoose moves away. It does not appear to be displacement or aggressive behaviour, nor does it cause stress to the mongooses, as they will repeat this behaviour numerous times.

This study was published by the keeper through the Association of British and Irish Wild Animal Keepers (ABWAK) and International Zoo News. The student received an award for the best poster at the 12th Annual BIAZA Research Symposium, Chester Zoo, July 2010.

**CONSERVATION:** Talks about the zoo's involvement in conservation programs in Madagascar are given frequently at the exhibit. A portion of the entrance fees go towards these programs. The aim of the exhibit is to showcase the biodiversity in Madagascar to the public.

The zoo participates in international breeding programs with the greater Vasa parrots and crowned lemurs. As of 2012, there was no international breeding program for narrow-striped mongooses, but the captive population is monitored and the zoo participates in this. Very few new materials were bought when constructing the exhibit. All features of the exhibit were recycled from the previous exhibits



**Public route through the bird aviary showing open viewing © Stewart Muir, 2011**



**Signage and entrance into Madagascar Walkthrough © Scott Pooley, 2011**



**Entrance into the lemur and mongoose off-show enclosures © Scott Pooley, 2011**



**View into the bird aviary from the public gallery in the shelter © Scott Pooley, 2011**

on the site, including the plants.

**LOCAL RESOURCES:**

The timber used in construction was sourced from a local timber supplier in Cornwall. The sheds for the indoor areas were constructed locally in Cornwall.