

# ZooLex News & design for December

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## NEW EXHIBIT PRESENTATION

'Islands in Danger' is a facility at Chester Zoo in Great Britain for breeding threatened island species. Komodo dragon, red bird of paradise and Victoria crowned pigeon are among the species on display. Visitors can recognise the 'Islands in Danger' exhibit by several landmarks, such as statues from Easter Island, a bronze Komodo dragon and a woodcarving of a moa:

## Chester Zoo

### Islands in Danger

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<http://www.zoolex.org/zoolex/cgi/view.py?id=865>



### LOCATION:

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**KEY WORDS:** threatened, islands, endemic, conservation

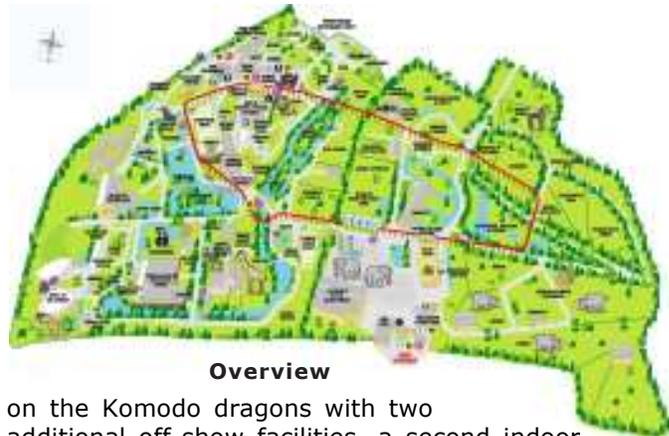
### ANIMALS:

Family	Species	Capacity
Aratingidae	<i>Amazona versicolor</i>	1.1 + offspring
Columbidae	<i>Gallicolumba rufigula</i>	1.1 + offspring
Columbidae	<i>Goura victoria</i>	1.1 + offspring
Columbidae	<i>Otidiphaps nobilis</i>	1.1 + offspring
Columbidae	<i>Zenaida macroura graysoni</i>	1.1 + offspring
Estrildidae	<i>Padda oryzivora</i>	many
Paradisaeidae	<i>Paradisaea rubra</i>	1.1 + offspring
Phasianidae	<i>Polyplectron napoleonsis</i>	1.1 + offspring

### DESCRIPTION:

Chester Zoo's 'Islands in Danger' replaced the outdated Bird House and is located on the same site. It substitutes this outdated building as a purpose built breeding facility for threatened island species (including Komodo dragon, red bird of paradise and Victoria crowned pigeon), highlighting the vulnerability of island species.

'Islands in Danger' was completed in two phases. The first was the main building with the bird aviaries and one on-show and one off-show Komodo dragon indoor enclosure. The second phase was opened two years later and consists of an outbuilding to the main building. This phase is also called 'Dragons in Danger' as it concentrates



Overview

on the Komodo dragons with two additional off-show facilities, a second indoor on-show enclosure and an outdoor enclosure. Visitors can recognise the 'Islands in Danger' exhibit from outside the building as there are several landmarks, including statues from Easter Island, a bronze Komodo dragon and a woodcarving of a moa. When they enter the building, visitors will first encounter the Komodo dragons in their enclosures. These two indoor enclosures resemble the natural habitat of these big monitor species with sand as a substrate. Artificial rocks structure the space. There is a pool and a waterfall in each inside enclosure. The off-



Easter Island statues

show facilities consist of three holding pens confined with walls and wire-mesh doors whereas the on-show enclosures have a glass barrier on the visitor side. The bigger on-show enclosure is inhabited by a large flock of Java sparrows.

The bird aviaries are placed in a 6 m high tropical house and are planted in order to create a naturalistic environment. The aviaries are built up to the roof, using the maximum space for the

inhabiting species. Visitors can find three aviaries for red birds of paradise. These enclosures are covered with nylon mesh and are also inhabited by Palawan peacock pheasants. Two more aviaries are currently occupied by St.-Lucia Amazon parrots and Socorro doves in one, and crowned pigeons, Golden-heart pigeons and pheasant pigeons in the other aviary. These aviaries are covered with metal mesh. Therefore, these enclosures could as well serve for other threatened island bird species, including parrots. When leaving the building, visitors can see the Komodo dragons in their outside enclosure. This enclosure has glass barriers and an open top.



**Red bird of paradise aviary**

On their journey, visitors can not only discover living examples of threatened island fauna but also examples of animals already extinct, e.g. the dodo, the elephant bird and the moa or species which are too sensitive to display on-show, like Partula snails. Life-size models and interpretation signs highlight the plight of islands and their wildlife.

**SIZE:**

The whole 'Islands in Danger' exhibit covers an area of 1090 m<sup>2</sup>. The two indoor enclosures for the



**Golden-heart pigeon**

Komodo dragons are 87 m<sup>2</sup> and 160 m<sup>2</sup>. Their outside enclosure is 50 m<sup>2</sup> and the three off-show dens are 13 m<sup>2</sup>, 14 m<sup>2</sup> and 16 m<sup>2</sup>. Thus, the Komodo dragons have a total enclosure space of 340 m<sup>2</sup>. The red birds of paradise have an area of 120 m<sup>2</sup> which consists of three separate aviaries which can be interconnected. The other aviaries are 100 m<sup>2</sup> (pigeons) and 57.5 m<sup>2</sup> (parrots) respectively. 86 m<sup>2</sup> account for keeper and maintenance area, visitors can use 336.5 m<sup>2</sup>. Space allocation in square meters:

use	indoors		outdoors		total exhibit
	accessible	total	accessible	total	
animals	617.5	617.5	50	50	667.5
visitors	336.5	336.5			336.5
others	86	86			86
total	1,040	1,040	50	50	1,090

**COSTS:** £ 620,000

**PLANTS:**

Plant species native to islands (e.g. Japan, New Zealand, and Tasmania) are arranged around the building. An area adjacent to the house is planted with hardy tropical looking plants. Inside the building, the aviaries are planted with lush vegetation. This planting theme is continued in the visitor area in order to create an immersion experience. The Komodo dragon enclosures are planted with several palms and shrubs which can cope with the relatively dry environment and the damaging potential of the animals. The outside enclosure is planted with tropical looking plant species which can withstand the English climate.

**FEATURES DEDICATED TO ANIMALS:**

**Birds:** All aviaries are provided with natural dense vegetation in order to ensure the psychological well-being of the birds. Natural sunlight can enter the building through the translucent roof. As the soil is meshed over the whole footprint of the building, no rodent pests can enter via the soil. Free-ranging birds, are also excluded, as the whole exhibit is indoors. A stand-off area of app. 1 m is installed between visitor area and aviaries.

**Komodo dragons:** There are separate enclosures (on-show and off-show) in order to provide a solitary lifestyle for every animal. An outdoor enclosure provides the monitors with natural sunlight and is accessible throughout most time of the year. All indoor enclosures (on-show and off-show) are equipped with UV-B lights spot for animal comfort (450W, 45 cm distance to monitors). The two spacious indoor on-show enclosures have a pond each where the Komodo dragons can bathe. Waterfalls and a fog system provide the required air humidity. Rings are attached in the indoor on-show enclosures in order to tie up big carcasses. This enables the keepers to offer big prey items few times a month which simulates natural feeding behavior.

**FEATURES DEDICATED TO KEEPERS:**

Birds: Safety porches give the keepers easy access to the aviaries and exclude the risk of birds escaping. The presence of four aviaries (pigeon aviary and birds of paradise aviaries) which can be interconnected, provide flexibility in keeping the different bird species.

Komodo dragons: Since Chester Zoo has a hands-off policy with the Komodo dragons, all doors connecting the different enclosures are operated from safe areas outside the enclosures. A crate, in which a Komodo dragon can be restraint, is used when veterinary procedures are required. All enclosures are on the same level as the keeper's area and are high enough to assure a comfortable working posture.

**FEATURES DEDICATED TO VISITORS:**

Since 'Islands in Danger' is exclusively inside (except the Komodo dragon outside enclosure) it is a facility where the visitors can escape from rain.



**Komodo Dragon**

The facility is accessible for wheelchairs. Glass barriers for the Komodo dragons and thin mesh of the aviaries allow visitors to observe the animals without any obstacles and from any height. The UV-B spot lights and the pools are placed adjacent to the viewing window in order to encourage the Komodo dragons to stay near the visitors. As the Komodo dragon viewing windows start approximately 40 cm above floor level and the stand-off barrier at the aviaries are not solid, children and visitors in wheelchairs can look into the enclosures without any obstacles.

**INTERPRETATION:**

The interpretation in this exhibit aims at raising visitor awareness about the threats to island habitats in general and at highlighting the conservation work of Chester Zoo on several islands around the world. In 'Islands in Danger', a variety of interpretation modes is used. These range from simple panels to interactive

interpretation (i.e. lifting flaps and models) to encourage hands-on exploration. In addition to general information about the biology of the kept species, the main focus is on threats to the islands. Life-size models of species already extinct (i.e. dodo, hatching elephant bird, giant day gecko, moa) show the visitors that for some species time already run out.

Interpretation signs and models of Partula snail, Euglandina and Giant African land snails show how introduction of alien species on islands can be fatal. A Jade vine model and an artificial Coco de Mer seed educate the visitors about threatened plant species.

Due to their conservation status and popularity Komodo dragons have been identified as a key flag ship species, and a considerable amount of interpretation is dedicated to them. In 'Islands in Danger' several panels describe adaptations and threats faced. Interpretation in 'Dragons in Danger' (the second phase of 'Islands in Danger') was designed to be multi-sensory. Reproduction is demonstrated by an artificial nest mound with hatching youngsters.

Models of young Komodo dragons climbing on a tree make their life in the first years clear to the visitors. Other characteristics are explained via



**Komodo dragon tunnel**



**Interactive smell station**

interactive models, e.g. sense of smell using synthetic rotting flesh and burnt wood. The Gray's monitor lizard is featured as a close relative of the Komodo dragon. Interpretative signs explain the threats to this elusive monitor lizard species from the Philippine Islands and how Chester Zoo is funding the field research of Daniel Bennett for this species (as a part of the Philippine Biodiversity Conservation Programme).

After visiting 'Islands in Danger' the visitor should be aware of the threats that islands face and what Chester Zoo is doing in order to preserve the flora and fauna of islands.

**MANAGEMENT:**

**Birds:** The birds at 'Islands in Danger' are looked after by staff from the bird team. There are two keepers on a daily basis to maintain the exhibit along with several other bird exhibits. Three main cleans per week are necessary (collecting faeces, old plant material, etc.). Exchanging food and irrigating the soil is daily maintenance work.

**Komodo dragons:** The Komodo dragons are cared for by the herpetology team. The animals are trained on a daily basis to enter the off-show enclosures. This training is carried out following positive reinforcement in form of small food items and a clicker. Therefore, the enclosures can be entered each day in order to carry out maintenance work. All three animals have their own enclosures and the one who has to inhabit the off-show enclosures has optional access to the outside enclosure.

**RESEARCH:**

In 2006, there were no research projects involved with the species kept in 'Islands in Danger'. However, several projects (especially on Komodo dragons) were done in the previous years and Chester Zoo offers possibilities to carry out research, after approval of the research proposals

and application forms by Chester Zoo's Research Department ([research@chesterzoo.org](mailto:research@chesterzoo.org)).

**CONSERVATION:**

Chester Zoo's conservation work for islands does not focus exclusively on the species held in 'Islands in Danger' but includes several programmes and projects. Chester Zoo runs and coordinates two big conservation programmes which aim at conserving island fauna and flora. One is the Philippine Biodiversity Conservation Programme which focuses on conservation work on the islands of Polillo, Luzon, Panay, Negros, Cebu and Palawan in order to preserve these biodiversity hot spots. The second one is the Mascarenes Biodiversity Conservation Programme which is settled on the Mascarene Islands of Mauritius and Rodrigues.

Most species in 'Islands in Danger' are managed by EEPs or ESBs. In order to link these ex-situ with in-situ conservation efforts, several single projects are supported by Chester Zoo, too. This includes for instance a Komodo dragon project in the Wae Wuul Nature Reserve at West Flores, Indonesia and the Partula snail in-situ conservation consortium.

**LOCAL RESOURCES:**

Local contractors and materials were used wherever possible.



**Moa Wood Carving**