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ZOOQUARIA

SUMMER 2010

FORMERLY EAZA NEWS

ISSUE 70

In black and white
WHITE TIGERS –
THE DEBATE IN FULL

In the know
WHY ZOOLOGICAL RESEARCH
NEEDS MORE PROMOTION

Meet the next generation
THE FUTURE FOR NATURE
FOUNDATION EXPLORED

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Zooquaria

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From the Director's Chair

Many of you will have been caught up in the recent travel disruption caused by the giant ash cloud from the erupting Icelandic volcano Eyjafjallajökull. When the problems first began I was in Kolmarden in Sweden as an invited speaker at the SAZA (Swedish Association of Zoological Parks & Aquaria) annual conference and my flight from Stockholm to the UK on the Friday morning was cancelled. With various abortive attempts to get home via flights from Oslo (cancelled of course) and long train journeys I had plenty of time for thought and the most prominent thought was how lucky I am to work for EAZA! During the six extra days it took to return home I was the recipient of lots of 'zoo hospitality' and was therefore in a far better position than many other disrupted travellers.

First my colleagues at SAZA. I want to thank Mats Hoggren, initially, for the invitation to speak on activities at EAZA and for all his hospitality and that of his colleagues at the meeting. But also for his concern and help when it became apparent that the ash cloud might be here for a while. Jonas Wahlstrom of Skansen-Akvariet offered accommodation at the 'baboon Hilton' in Stockholm at his zoo if I travelled that way – and although I didn't take up the offer, I'm very grateful to Jonas. When I got a flight from Oslo, Ewa Wikberg and Bo Norming of Nordens Ark gave me a lift to Gothenburg on Friday afternoon and later that evening Bo and Lena Linden, Director of Nordens Ark, hosted a lovely dinner in Gothenburg. I had planned to travel to Oslo on the Saturday morning but with a cancelled flight I instead travelled south to Denmark and Copenhagen. After queuing for a few hours at the ticket booth in Copenhagen Central Station I eventually got tickets for a train to Hamburg, connecting to Cologne, then on to Brussels and the Eurostar back to London, where I live at weekends. There was only one problem – it didn't leave until the following Wednesday morning.

So, of course, I phoned my nearest EAZA zoo. Bengt Holst, who with Lars Lunding Andersen had driven on Friday from Warsaw to Copenhagen after their return flight from South Africa landed in Poland instead of Denmark, quickly arranged for me to stay in the Copenhagen Zoo visitors' flat and provided me with desk space on the Monday and Tuesday in their offices at the zoo, alongside Ann-Katrine Garn and Frands Carlsen. Ann-Katrine and Frands were marvellous hosts and made sure I was well looked after during my stay.

I left well rested on Wednesday morning for a day of travelling. Alas within one hour the train broke down and it was soon apparent that I was going to miss my connections and therefore the last Eurostar train of the day. What now? Well Eoghan and Fleur at the office looked into every possible option but it was clear very quickly that I would need to spend another night away from home. Luckily at Hamburg I managed to change my tickets, get new connections and a seat on the Eurostar the following day. I knew I would get to Brussels on the Wednesday evening and so phoned our colleague Kristin Leus in Antwerp to beg a night on her sofa bed – luckily she was at home.

I eventually made it home to London on Thursday morning but the journey was made far less complex and less stressful due to zoo colleagues who helped me out every step of the way. And I feel confident that there are not many places in Europe where I could be stranded and not find a helping hand from a local EAZA zoo or aquarium – we really do have a community and that is the great strength of an association such as EAZA. It's the same sense of community that we apply to all aspects of our work which means that, despite our occasional differences, we can find common goals.

The other thought that occurred to me repeatedly on my trip across Europe, and I am sure it's one you share, is the overwhelming reminder that humans are not masters of this planet, that nature can quickly disrupt our so called sophisticated and technological society. Researchers from the Delft Technology University have suggested there may even be a connection between increased volcanic activity and human-mediated global warming. Whatever the cause, the ash cloud reminds us that the planet is a volatile 'living' structure and we are just parts of the biodiversity on the planet. However, as the dominant animals on Earth we are charged with stewardship of the planet and in the International Year of Biodiversity we need to be more aware than ever of our responsibilities. I know EAZA members are doing their bit for biodiversity education and conservation but please do keep letting us know about your projects so we can publicise the work you do.

Dr Lesley Dickie
Executive Director, EAZA

NOTICEBOARD

EAZA AT THE MOVIES

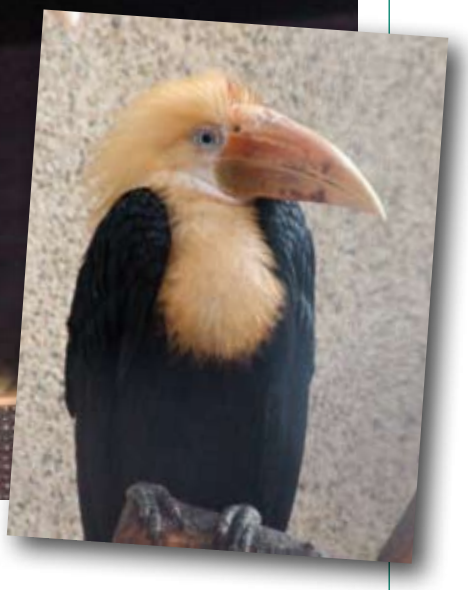
AS PART OF OUR ACTIVITIES marking the United Nations International Year of Biodiversity, EAZA has produced a short film highlighting a few examples of how our members contribute to *in situ* conservation. The ten minute film, which can be found on the EAZA website or on our YouTube channel (www.youtube.com/eazavideo), is primarily aimed at people outside the immediate zoo community. We hope it will be of interest to the wider conservation world, to policymakers and politicians, and indeed to anyone that has an interest in the activities of zoos.

The film was designed to convey two key messages: firstly that EAZA exists as an association of modern, progressive zoos and aquariums; and secondly that our members are actively engaged in wildlife conservation in the field. We hope that it will serve to increase awareness of and support for the excellent work our members are doing.

It features contributions from Bengt Holst (Copenhagen Zoo), Christoph Schwitzer (Bristol Zoo and AEECL), Nguyen Van Thai (Carnivore and Pangolin Conservation Program, Vietnam), Patrícia Medici (Lowland Tapir Conservation Initiative, Brazil), and Stewart Muir (Newquay Zoo). It was produced by Paul King, a wildlife filmmaker based in Amsterdam, in conjunction with the EAZA Executive Office.

Let us know what you think!

DEVELOPMENTS AT DORTMUND



THERE HAVE BEEN a number of arrivals at Germany's Dortmund Zoo in recent months. For the first time in its history the zoo has received a pair of masked palm civets (*Paguma larvata*), rarely found in European collections. The animals came from Ueno Zoo, Tokyo (Japan) and they have been named Akihito and Michiko in honour of the Japanese Emperor and Empress.

The maximum age for the species in captivity is 27 (Nogeyama Zoo), though the vast majority live for around 15 years on average. Dortmund Zoo is therefore lucky to have a true opportunity to establish a good population of the species in the future as the two animals were no more than two years old when they arrived.

Dortmund Zoo has also enjoyed some exciting breeding developments, in particular with tapirs and hornbills. A young male lowland tapir (*Tapirus terrestris*) has been successfully reared by his mother Indra. He is her fourth offspring, and all were reared without any problems on the mixed species exhibit 'South American Plains'. This is particularly good news as Indra faced a severe illness the year before last and it was feared she would never give birth again.

Then, in December, there was the birth of a male Malayan tapir (*Tapirus indicus*). Malayan tapirs are still rare in European zoos and the ongoing breeding success at Dortmund (the young one is the third offspring) should be considered a major contribution to the EEP.

Malayan tapirs are kept in a mixed species exhibit with Sumatran orangutans (*Pongo abelii*) in the newly renovated rainforest house.

In December the zoo also celebrated the hatching of a Papuan wreathed hornbill (*Aceros plicatus*), its parents' first offspring in their eight years in Dortmund.

NOTICEBOARD

TRAINING IN ARGENTINA

IN MARCH THIS YEAR, population management in Latin America started to become a reality, *writes ALPZA's Adrián J Sestelo*. This was thanks to two courses run by ALPZA (Asociación Latinoamericana de Parques Zoológicos y Acuarios), and supported by EAZA, the Zoological Garden of the City of Buenos Aires, Bioandina Argentina Foundation and ISIS.

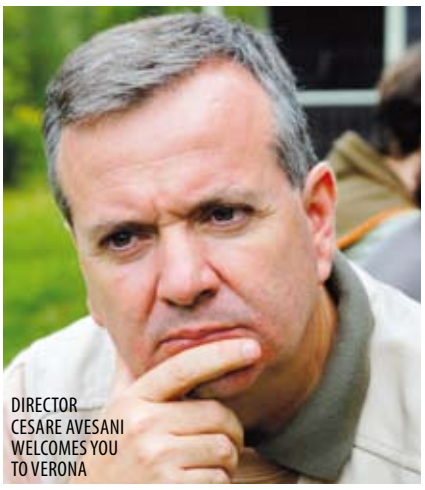
The courses included the first Captive Population Management advanced course in the area, and an Introduction to Studbooks and Captive Population Management, the third time this course has been run. Increasing knowledge on population management in Latin America is particularly important as the ALPZA Species Cooperative Management Committee has only recently started organising the species kept in captivity in the region.

In total ALPZA is developing 17 studbooks for species in the Latin American region. ALPZA and the EAZA Penguin TAG are also working together towards establishing a viable captive Humboldt penguin population. The next step will then be to review the current status of captive populations and to determine their potential contribution to conservation.

COUNCIL CHANGES DURING THE SPRING COUNCIL MEETING ON 9 MAY 2010 TWO SEATS ON THE EAZA COUNCIL 2009-2012 WERE REASSIGNED. JUKKA SALO (HELSINKI ZOO) IS THE NEW COUNCIL MEMBER FOR FINLAND AND JOHN DE HOON (VOGELPARK AVIFAUNA) REPLACED ONE OF THE COUNCIL MEMBERS FOR THE NETHERLANDS. THERE ARE CURRENTLY TWO VACANT POSITIONS ON COUNCIL, ONE FOR SPAIN AND ONE FOR THE CZECH REPUBLIC, THE LATTER DUE TO THE EXCLUSION OF ZOO DVUR KRALOVE.

IN ADDITION, A NUMBER OF TEMPORARY MEMBERS OF EAZA WERE UPGRADED TO FULL MEMBERSHIP: JESPERHUS JUNGLE ZOO (DENMARK), WADDESDON MANOR AVIARY (UK), FOLLY FARM (UK), MARINELAND ANTIBES (FRANCE), AND PARQUE OASYS – PARQUE TEMATICO DEL DESIERTO DE TABERNAS (SPAIN). CONGRATULATIONS TO ALL OF THEM.

ANNUAL CONFERENCE: A SPECIAL INVITATION



DIRECTOR CESARE AVESANI WELCOMES YOU TO VERONA

COME FOR THE CONFERENCE, stay for the culture. This year's annual EAZA conference is being held from 22-25 September at Verona's Parco Natura Viva, and the glories of northern Italy await you. There's a host of fine accommodation available to you throughout Verona, the city that's world famous for its opera festival that takes place in the Arena di Verona. We're laying on a number of great social events, too, to give you the chance to meet as many European zoo colleagues as you can. And while you're there, you might wish to book an extra day or so to enjoy this stunning region of Italy.

There are the famous attractions of Venice, as well as Padua, 'city of art'. Meawhile, Parco Natura Viva itself sits up on the hills that overlook the finest lake in all Italy, Lago di Garda, with the famous pink mountains, the Dolomites, nearby.

At the Park itself, you'll be able to find out more about its exciting new developments. The masterplan for the zoo entails a gradual exclusion of private cars from the safari park - an area dedicated to African animals - and the development of a pedestrian zone divided in two continental areas: South America and Europe. The most important breeding successes in the Park include the regular births of red panda, spectacled bear and birds like the Indian vulture, griffon vulture and a large Chilean flamingo colony.

So make sure you book your place today. It promises to be one very memorable conference.

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COLLARING A PECCARY WITH BLOW-PIPES

SUCCESSFULLY ANAESTHETISED TIGER

STUDENTS LEARN MORE ABOUT SLEEPING

BACK IN 2008 EAZA's Technical Assistance Committee first had the idea of launching a workshop for zoo veterinarians from former Yugoslavian zoos and other Southeast European countries on the topic of modern anaesthetic methods, *writes Endre Sos*. The idea was finally turned into reality in November 2009.

Such a workshop needs to offer hands-on experience, and so Hungary's Szeged Zoo, a few kilometres from the Serbian border, was the ideal location with its education centre and huge grounds for practising.

To organise a successful event you need somebody who is familiar with the country, you need eager students who are willing and enthusiastic to learn, and of course speakers and demonstrators to do the job. In our case Davorka Maljkovic (director of Zagreb Zoo) and Ingeborg Bata (vet of Zagreb Zoo) did tremendous work to spread the word in announcing the workshop properly in the former Yugoslavian states. Other members of the EAZA Technical Assistance Committee sent out information to Turkey and Bulgaria as well. Finally, we got a very motivated group of zoo and wildlife veterinarians coming from eight countries (Austria, Bosnia-Herzegovina, Bulgaria, Croatia, Hungary, Macedonia, Serbia and Turkey).

It was good to see that, regardless of the region or zoo, we almost always had the same veterinary problems and questions popping up, with the only differences being technical circumstances. Altogether 16 participants from 11 institutions took part in the workshop. The speakers and demonstrators were Robert Veprik (director of Szeged Zoo and our host), Istvan Szoke (vet of Szeged Zoo), Viktor Molnar and Endre Sós (vets of Budapest Zoo). The organisation of the programme and technical supplies was handled by Budapest Zoo and Szeged Zoo (Dora Salkovics). The participants only had to pay for their food and accommodation; apart from this the workshop was free of charge. The anaesthetic drugs for the practical sessions were provided by Budapest Zoo.

We tried to cover the broadest field of anaesthesia possible within a two and half day event, including the history of anaesthesia, pharmaceutical aspects, distance immobilisation equipment and exhibit design. Following this we provided practical details about the anaesthesia of reptiles, birds and the most important mammal taxa (including the 'problem' animals in these regions, such as bears, carnivores, felids and different herbivore groups). As we wanted to demonstrate the real thing, we examined some red-eared sliders and rescued common buzzards, translocated a few collared peccaries and (the icing on the cake) we castrated two hybrid tigers. For all these examinations and interventions thorough anaesthesia was needed, so it was really useful to put the theory straight into practice!

The EAZA Technical Assistance Committee provides real technical help in less developed zoos regarding zoo management, facility design or husbandry. Currently, the committee is still working on the most important tasks and several CfM (Candidate for Membership) institutions and core regions work very closely with certain members of the committee.

To measure is to know

WHY ZOOS CAN'T DO WITHOUT THOSE OFTEN UNSUNG HEROES, THE RESEARCHERS

Rudy van Eysendeyk, former Director, Antwerp Zoo

With the publication of the EAZA Research Strategy two years ago, the EAZA Research Committee set a new goal for the zoo community: zoos can and should be involved as much as possible in scientific activities [see page 30 for a summary]. The strategy provides a clear framework for zoo research and its importance for conservation, with a vision, an action plan, and examples of research opportunities in zoos.

Nevertheless, although considered important by many zoo directors or managers, research doesn't seem to be high on the list of priorities of many of my colleagues. We generally tend to be more interested in publicity and commercial success, and not so much in scientific output. However, I would like to make a case that, ultimately, participation in research is a means to contribute to achieving these aforementioned 'higher' goals. Apart from the requirement to do research in the EU Zoo Directive and national equivalents, there are many good reasons for doing research in zoos and aquariums, and a need for all zoo CEOs to make every effort possible to support and stimulate such activities. Serious zoos should support science as one of their main goals in line with education and conservation, and I hope to be able to inspire at least some of the remaining sceptics in the zoo world.

SPECIES CONSERVATION

First and foremost, species conservation is, and should be the core activity of our business. We aim to achieve this by entertaining and educating our visitors; raising awareness of biodiversity conservation by using our animals as ambassadors for their wild cousins; providing information about the species on exhibit and their natural habitats; taking part in joint captive breeding programmes, and *in situ* conservation programmes for animal species or whole habitats. But keeping animals in captivity in conditions greatly different from the wild imposes a responsibility on all zoos. After all, we are the guardians of these animals, which is admittedly a huge task. Zoos should take this responsibility seriously, or the justification for our existence will be hugely compromised.

DAY-TO-DAY MANAGEMENT

Zoos can benefit directly from research as many of our activities are dependent on it, and research results can often be immediately applied in a practical context. Accommodating animals under conditions aimed at satisfying the biological and conservation needs of the individual species is one of the key requirements in the EU Zoo Directive. However, in many cases we still lack the essential biological knowledge of species to get this right. Research allows zoos to obtain the missing information, but also to measure and evaluate the effect of management decisions, and to maintain a high standard of animal husbandry with adequate veterinary care and nutrition. To be able to do this job properly, every zoo should adopt science-based working methods and draw on research as a tool to improve husbandry and animal welfare: make informed management decisions, formulate breeding and transfer recommendations, provide solutions to issues related to nutrition, health or reproduction, etc. In summary, evidence-based investigations should be the foundation of our day-to-day animal management, and a good zoo can't do without that.

SCIENTIFIC KNOWLEDGE

However, the scientific role of modern zoos should not be restricted to facilitating and carrying out research that contributes to making informed management decisions for their collections, or for the conservation of animals and habitats. Zoos also have the potential to make substantial contributions to basic and theoretical scientific knowledge. Zoos have a huge potential in providing an ideal research environment for many kinds of fundamental biological and veterinary studies because of the controlled, semi-natural conditions with animals of known genetic and behavioural origin.

By building partnerships with academic institutions, zoos can gain access to trained researchers and specialist equipment, and develop joint research projects, and this may also create opportunities for zoos to develop or even influence research priorities. Another important consideration is that being a respected partner in the

academic community gives credibility and standing to your zoo. Zoos that contribute to scientific research will inevitably have a stronger public position, as one of our recent visitor studies in different Belgian zoos clearly showed: visitors do actually recognise and value the effort we put in to scientific research. Furthermore, as I have personally experienced regularly in Antwerp, research activities offer great opportunities to tell interesting stories, and new research results create good publicity and generate considerable media attention. Who of us wouldn't go for free advertising?

STILL NOT CONVINCED?

Lastly, another good reason for supporting science in zoos, that might appeal more to CEOs, especially the more commercially minded ones, can be illustrated by the role zoo visitor studies can play. Of course our main concern as a zoo director is to offer a fun day at the zoo for our visitors, and to keep our businesses commercially healthy and thriving. We do invest considerably in conservation education and information sharing, but do we even know if that message actually gets across? By evaluating what visitors want and what they do – in other words by doing research in our zoos – we can directly evaluate our investments and see whether the conservation message, that is probably in the respective mission statements of each of our zoos, comes through. Zoos and, particularly, museums in the United States have for many years experienced the benefits of visitor studies, but in European zoos, such studies are still relatively scarce.

Research can be an indispensable tool in helping us to better understand how our visitors interact with the information we offer, and learn about their perceptions and expectations. But more importantly, research can help us improve visitor experience, and indirectly the zoo's commercial value. In Antwerp and Planckendael, for example, we have implemented such studies in collaboration with several schools and universities in Flanders and the Netherlands since 2007, using relatively simple methods like visitor surveys and observing visitor behaviour. These initial studies helped us gain lots of useful information about our visitors which will allow us to make significant adjustments in our education panels and our exhibits, and to create an even better experience for our zoo visitors.

In conclusion, I believe that every zoo, no matter how small or how large, should invest in a research department with designated scientists, and have formal relationships with universities and research institutions. And to make things easier one should definitely make use of the help offered by the EAZA Research Committee and similar research groups, like for example the BIAZA Research Group, who support, stimulate and help coordinate research activities in zoos, and organise research symposiums and other events bringing together academics, students and zoo biologists.

Zebra shark studbook

NEARLY THREE YEARS AFTER STARTING THE ZEBRA SHARK STUDBOOK AS THE FIRST OFFICIAL EUROPEAN STUDBOOK ON A FISH SPECIES, IT IS NOW TIME TO REVIEW ITS INITIAL CHALLENGES

Max Janse, Burgers' Zoo, Arnhem, Netherlands

Zebra sharks (*Stegostoma fasciatum*) are tropical sharks that can reach up to 2.5m in length. Consequently, not every aquarium has room for such a large species. However, within the last two decades we have seen more and more large public aquariums built, which has enabled the popularity of this attractive bottom dwelling shark to increase drastically. All European zebra sharks originate from the wild, and the species is listed as vulnerable on the IUCN Red List.

It is now bred in captivity in six aquariums outside of Europe, and the common practice of sustainable collection management for mammals and bird collections is now being extended towards aquarium management, too. Fish studbooks, such as that held for the zebra shark, may be a big help towards sustainable fish management.

START OF THE TRANSPORT OF THE ZEBRA SHARK TO HAMBURG

DEVELOPMENT OF THE STUDBOOK

Two studbooks have been published since the start of the programme. There are currently 25 participating aquariums, with 16.17 living sharks between them, and one of the first challenges was to gather all the species information from them all. We were delighted to see that there was so much interest within the aquarium community for the type of breeding programme we had established, and the populations of zebra sharks grew quite rapidly. At the start of the studbook it was clear only a few aquariums kept adult animals and even fewer kept couples – yet since the launch of the studbook more couples have been formed, while other animals have now reached the reproductive age.

In 2009 four aquariums had females that produced unfertile eggs. Hagenbeck Zoo in Hamburg, Germany also had a female that produced unfertile eggs, although they had no male. So it was decided, within the studbook, that an adult male from Arnhem was to go on breeding loan to Hamburg. This is of course a very common activity for birds and mammals, but not within the aquarium community. Being one of the most important specimens in an aquarium collection it's not so easy to arrange for a shark to leave the aquarium for a while, and transporting sharks of this size is not common practice either. Then, in 2010, the first husbandry guidelines were published. The information was compiled from 24 aquariums in Europe, Asia and the USA, both breeding and non-breeding institutions. As the studbook coordinator, it was fantastic to see this free and open exchange of husbandry and experience information. We can learn so much from each other's practices and experiences. Interesting conclusions from the questionnaire we compiled were that three of the breeding facilities added much more vitamin A, B1, B2 and B6 to the sharks' diet, while two others provided much more vitamin C, D3 and E. Whether it's the combination of vitamins or just one vitamin in particular that is important for reproduction is as yet unknown. Adult animals should be kept in 200,000 litres or more to permit swimming space. Temperature may also affect the breeding results, and the strongest advice was to keep the animals above 25°C.

FUTURE

Since the launch of the zebra shark programme, there are now more fish programmes being developed within EAZA. Last year a new zebra shark programme (PMP) was approved by AZA, run by Lise Christopher from Shedd Aquarium, Chicago. Since a few aquariums in USA are breeding this species the studbook is at a different stage of management, and it has been decided that offspring from American colleagues are to be added into the European population. A number of fertile eggs will be sent over and hatched in Arnhem. The most important goal in the near future is reproduction within the European population and thus ensuring no animals will be taken from the wild.

Besides the Blue-spotted stingray ESB, which like the Zebra shark ESB has existed since 2007, the EEP Committee approved the following new 'fish' programmes in March 2010: Sandbar shark (*Carcharhinus plumbeus*) ESB, Spotted eagle ray (*Aetobatus narinari*) ESB, Blue-spotted maskray (*Neotrygon kuhlii*) ESB and separate ESBs for the short-snouted seahorse (*Hippocampus hippocampus)* and long-snouted seahorse (*Hippocampus guttulatus)*. For coordinator details and contacts visit www.eaza.net.

Cruel, illegal and unnecessary

THE RISING THREAT OF POISON IS ONE OF THE TARGETS OF THIS YEAR'S CARNIVORE CAMPAIGN

Angela Glatston, Chair of the Carnivore Campaign

RICHARD BARTZ

The indiscriminate use of poison and toxins is a major threat to wildlife worldwide and carnivores are very often the victims. Type into Google the term 'poison bait' and the name of a carnivore species, and the number of hits this generates is a reflection of the scale of this problem. In 2009/2010 the EAZA European Carnivore Campaign is focusing on eliminating the deliberate use of poisoned bait to control carnivores in Europe. Many of us assume that this practice is a nightmare which has long been consigned to the past through legislation, however nothing could be further from the truth. Instances of poison deaths are widespread through Europe and the number of cases, especially those of raptors, has been increasing year on year since 1990.

In fact the illegal use of poisoned bait is one of the main causes of premature death in a number of protected species including vultures, raptors, bears and wolves causing population declines and even localised extinctions. It threatens the success of some of Europe's most successful conservation initiatives such as the reintroduction of griffon and black vultures in France or the white-tailed sea eagle in Ireland, the conservation of the bearded vulture (right) in Crete and the recovery of the brown bear. The figures we have quoted on the campaign website (www.carnivorecampaign.eu) are just from Spain and we only have these due to the dedicated work of the Vulture Conservation Fund. Elsewhere in Europe this problem is substantially underestimated and under-reported and, more importantly, it rarely reaches the media.

The use of poison to control wildlife is a cruel practice which leads to a lingering death for its victims. Furthermore, as it kills indiscriminately and therefore the victim may not be the intended target, it is not necessarily that effective in eliminating a particular problem. For example it may kill a vulture instead of the feral dogs which have been attacking livestock. Even harmless domestic pets are not immune.

Using poison in this way is also illegal under current European legislation; there are several legal instruments in place banning its use. Nevertheless all the indications are that poison is increasingly being used to protect both game species and livestock. This situation continues to worsen, both as a result of easy access to the potent toxins used in the agricultural and forestry sectors such as organic phosphates and carbamates and also due to apparent immunity to prosecution; these crimes are rarely taken to court not only because of the difficulty in detecting the illegal use of these toxins and in finding the necessary evidence to support a legal case but also because the authorities turn a blind eye. This observation is not new; for example, in 1990 one of Scotland's leading wildlife liaison officers resigned in protest because he believed the police were reluctant to treat countryside poisoning as serious crime.

Above all the use of poison is unnecessary. In most cases an alternative strategy would be equally, if not more, successful. A change in the management of natural areas to minimise habitat destruction and to prevent over-hunting would do more to preserve game stocks than trying to eliminate predators.

Equally, the provision of adequate protection for herds of livestock would prevent the need to take retaliatory action when such a herd is attacked by a predator.

2010 is the International Year of Biodiversity and stopping the use of poison as a weapon against wildlife is an essential prerequisite to safeguard our biodiversity and to ensuring the continuation of those successes already achieved in the recovery of threatened species. It is also an area where zoos can play an important role in creating awareness. The EAZA European Carnivore Campaign has adopted the call to Stop Poison in Europe as its theme for 2009/2010. Our Stop Poison petition and the conservation projects we have chosen to support will all play a role in stopping this plague.

So please join us and play your part in this important initiative.

Continuing our review of EAZA's focused conservation cam
Year of Biodiversity 2010, *Zooquaria* revisits two more camp

Rhino Campaign: charged with success

Chairman of the Rhino Campaign, Nick Lindsay, ZSL

With over €660,000 raised through the fifth EAZA conservation campaign there was considerable justification in choosing rhinos as the focus species for 2005/6, even though a relatively small number of EAZA zoos have rhinos. The other major decision by EAZA for this campaign was to work with a partner from outside the zoo world. Save the Rhino International (SRI) is a UK NGO with a specific aim of raising funds for rhino conservation, and it brought to the campaign its contacts and experience in fundraising for rhinos. SRI made an incredible commitment by employing a dedicated member of staff for the campaign, the outcome of which was that EAZA was able to provide funds to 22 projects in support of wild rhino conservation, and engage with millions of visitors to zoos in Europe about rhinos and conservation in rhino range countries.

With only about 90 zoos holding rhinos – the Southern white rhino, the Eastern black rhino and the greater one-horned rhino – the first challenge faced by the organising committee was how to involve zoos that don't house them. Using rhinos as flagship species for countries, regions and habitats it was possible to present zoos with a tremendous range of species that live in these areas and which benefit from the presence of rhinos through the way the animals 'manage' their environment, or from the protection provided for them in national parks or similar wildlife areas.

There was considerable effort put into the production of the campaign pack to give zoos up-to-date information on all rhino species in the wild and in our zoos, including details of key species that share habitats with rhinos and material to help zoos develop their own campaign activities. Through SRI, Aardman Productions gave permission for EAZA to use Douglas the Rhino as the campaign character which proved very popular. The effect was so great that 134 organisations registered for the campaign, including some non-EAZA zoos, schools and businesses. A campaign website was set up which included details of all the projects selected for support and the campaign pack plus updates and reports as the campaign year developed.

Based on previous campaign successes it was agreed that our target should be €350,000 which would enable EAZA to contribute significant funds to rhino conservation. Invitations to apply for funding prompted an incredible response, in turn causing a few headaches on how projects could be selected. To help the selection process we involved the two IUCN SSC African and Asian Rhino Specialist Groups which gave us the local knowledge we needed and gave the campaign, and its selected projects, IUCN approval which was considered important.

It was agreed that there would be at least one project selected for each of the five species and that projects would include a range of activities considered important for conserving rhinos, such as monitoring, anti-poaching, translocation, field research, community education and trade. Thirteen projects were selected for the first round to match the funding target. A reserve list of nine projects was also compiled in case the target was exceeded, and in the end all 22 selected projects were able to receive their requested funds.

Because of the obvious popularity of the campaign some funds were sent to projects as early as February 2006 although the bulk of the funds were distributed after October 2006 when the final total was known. It was with some pleasure that it was possible to send funds for the greater one-horned rhino programme in Nepal once the political issues had been resolved and a national conservation plan implemented. Other projects have also experienced problems such as a delay in Rhino Vision 20:20 in Assam and the change in the political atmosphere in Zimbabwe but funds have not been wasted or lost in the process.

In the past twelve months there has been a dramatic increase in rhino poaching in some rhino countries including South Africa, India and Nepal. This only highlights the continuing threat to rhinos for the traditional Chinese medicine trade and the need for long-term commitments to ensure wild rhinos continue to thrive. It is reassuring to know that there is a legacy to the campaign with some zoos now developing long-term partnerships with some of the campaign projects. They are to be applauded for this work.

Why was the campaign such a success? The partnership with SRI certainly made a stronger package and provided full-time administrative support. In addition, rhinos are popular animals to work with, and as EAZA members had had the experience of four previous campaigns, their appetite had been whetted.

EAZA can be rightly proud of yet another successful campaign with the result of even more funds going directly to support the conservation of wild animals. It is also important to consider the effect of informing millions of our visitors about rhinos, about the problems countries with rhinos face and about the solutions to these problems.

paigns, as part of the celebrations of the International
aigns to report on what they have achieved.

Madagascar: the first national approach

Lesley Dickie, Executive Director, EAZA

The EAZA Madagascar Campaign, Arovako i Madagasikara (Conserve Madagascar) 2006/2007 was the first, and to date only, campaign that focused on the biodiversity of an entire country. This reflects the quite amazing biodiversity found on this one island in the Indian Ocean. However, it also reflects the sad fact that time is running out for this unique and exquisite wildlife. Endemicity and rarity go hand in hand when looking at the fauna and flora of the island, and despite being close to its giant continental neighbour of Africa, the biodiversity of the island is strikingly different. Discounting bats, all its mammals are unique to the island. Other taxa such as the amphibians and reptiles exhibit levels of endemicity in excess of 90%. More than 85% of the plant species are found nowhere else. But this is an island under pressure, primarily from habitat loss for agriculture, fuel wood and mining development. More than 90% of Madagascar's original forests have been converted by man in an astonishingly short period of time, with humans estimated to only have arrived on Madagascar 2,000 years ago.

This sixth EAZA campaign was supported by two significant individuals, with the actor John Cleese as our Patron, and a letter of support received from the then President of the country Marc Ravalomanana, which we hoped would raise the profile of this campaign. In the campaign core group we already knew that a number of member zoos and aquariums were interested in conservation in Madagascar and we also hoped that the popularity of many species of Malagasy fauna, particularly lemurs, in EAZA zoos would lead to great support from the membership. We initially set six targets for the campaign: raise public awareness of one of the most important reservoirs of natural history on the planet; promote ecotourism to Madagascar; highlight ways in which the public can contribute to conservation in their own lives; alert EAZA members to the diversity of Malagasy wildlife and hence support the programmes that feature these

NICK GARBUTT

species; promote the idea of twinning between EAZA members and reserves and national parks in Madagascar; and, perhaps most important, initially raise funds for biodiversity conservation projects on the island.

When planning the fundraising target we had been impressed by the amazing performance of the Tiger and Rhino campaigns that had run in previous years. But we wondered whether such high sums had been raised as these were campaigns that focused on 'charismatic mega-mammals'. While we loved the small, the odd, the sometimes weird biodiversity of Madagascar, would everyone else? The initial target was €500,000. Was this too high? It turned out we needn't have worried with a final fundraising result of just over €600,000!

Throughout the year of the active campaign some 165 member institutions threw themselves into amazing fund raising efforts. We saw drawing competitions, sporting events, raffles of holidays to Madagascar, pantomimes and plays based on Madagascar, music events and many more innovative ways that members promoted the campaign. A number of awards were given for efforts made by institutions during the campaign including to Mulhouse, Parco Natura Viva, Blackpool, Plzen, Bristol and Newquay zoos. A special outstanding achievement award was presented to Woburn Safari Park, which raised over €40,000.

Twenty projects were initially selected for funding in two rounds. These 20 received €361,645 in funds in total. The selected projects focused on many different species and from research to education, from habitat protection to species focused projects. The final campaign reports are now arriving at the EAZA Executive Office and will all be placed on the Madagascar Campaign page on the website in the near future, allowing you to see exactly how the funds raised were spent. An additional €25,000 was sent to Madagascar to help local communities and conservation in the Masoala National Park after the devastation following a series of cyclones in March and April 2007.

The campaign group, with permission of the Conservation and Executive Committees, also set aside €100,000 as matched funds to apply to the EU, in collaboration with Birdlife International, CARE France and Asity, for a forest protection project in Tsitongambarika in south–east Madagascar. Unfortunately, after significant work on the application and getting through to the final stages of the grant process, the bid was unsuccessful. However, it does mean that, with the receipt of the final reports from the first and second round successful applicant projects, applications to the EAZA Madagascar Campaign Fund will re-open in June 2010.

Full information on how to apply to the fund will be posted on the EAZA website so please check the site regularly for that.

Colomba de La Panouse Turnbull

Position: Vice CEO, Parc de Thoiry
Hobbies: Painting, design and travelling
Last book read: *Leaf Storm* by Gabriel García Márquez
Last Movie seen: *Achilles and the Tortoise* by Takeshi Kitano
Last concert attended: An organ recital performed by a friend at Notre Dame (Paris)
Last trip made abroad: Amphibian and Reptile TAG meeting in Barcelona

QUESTIONS:

Thoiry is much more of a family business than most zoos. Do you feel that this gives you added strengths?
It gives stability within senior management so I can rely on the mission/ethos/ethical principles that shape my overall management approach being maintained in the long term. Furthermore it provides a sense of collective ownership, and therefore responsibility.

There are still comparatively few female directors in the zoological world. Do you see improvements in that proportion in the future?
In my time working in France I have seen an ever-increasing ratio of women to men working in zoos, from keepers up. I know several female zoo directors myself and have appointed one in our sister zoo in Peaugres. I believe that the proportion of female to male directors is gradually increasing.

At the end of the day, however, what matters to me is not so much how many female directors are employed but, rather, how many directors employed, male or female, are prepared to uphold the ethical values associated with good and responsible zoo management.

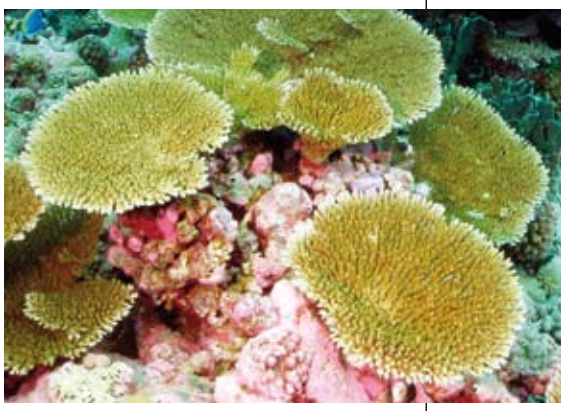
In which other directions would you like to see zoo management develop during the coming years?
- Less competitive spirit between zoos.
- More cooperation and coordination for the 'greater good' in collection planning, population management (bachelor groups, adherence to EEP recommendations), procurement of animals and disposal of surplus, marketing, media communication, etc.
- A broader approach to responsible zoo management encompassing environmental sustainability as a whole and ethical people management.

You have a close association with Komodo dragons. In what way do they represent the plight of wildlife in general?
Komodo dragons being a very charismatic species, they are obviously a good flagship for other species of reptiles, top predators, and island species and their ecosystems. Komodo dragons can be used to raise public awareness on a range of issues common to many endangered species: habitat destruction and encroachment, poaching (in this case of prey species), local population livelihood versus predator management, etc.

Do you feel that living collections are an important educational tool for young people?
I believe they are an essential tool. Only through developing empathy towards a wide variety of species will they develop the belief that biodiversity conservation is important.

Empathy cannot be developed through the acquisition of textbook knowledge alone; numerous social studies have demonstrated that human beings require direct contact experiences (even though protected), stimulation of all their senses and educational programmes such as keeper talks which bring an emotional dimension to the learning process.

Finally, if there was one species that you'd particularly like to introduce to Thoiry, what would it be?
No one species in particular but a group of species: amphibians. We have been working on a project for a few years now and we will open a 600m^2 facility for amphibian and invertebrate conservation.



Reef relief

THE ANNOUNCED PROTECTION OF THE CHAGOS ARCHIPELAGO, THANKS TO THE SUPPORT OF MANY ZOOLOGICAL ASSOCIATIONS AND OTHERS, IS A VERY GOOD START. BUT THERE'S MUCH MORE WORK TO BE DONE

Rachel Jones, ZSL

The Chagos archipelago consists of 55 tiny islands scattered across 544,000km^2 of the British Indian Ocean Territory (BIOT). They represent about 50% of the healthy reefs left in the Indian Ocean, a region where many reefs are over-exploited and degraded.

The islands represent vital safe havens for nesting birds, turtles and the spectacular coconut crab (*Birgus latro*) the worlds biggest arthropod. The reefs are in incredibly good condition due to their remote location and the lack of anthropogenic pressures such as pollution and overfishing.

Yet there have been impacts on the area from human activity. A military base on Diego Garcia, for example, now has a resident population of about 3,000 people. Islands where copra plantations once operated are now overrun with coconut palms and in many cases rats, which predate nestling birds and turtles. Most damaging of all are the two tuna fisheries that spend about a month of the year in BIOT waters. Levels of by-catch are staggering and account for approximately 10,000 sharks and the same number of rays each season.

For all these reasons the Chagos Environment Network (CEN) has spent the last two years campaigning hard to get more attention and more protection for this special place. The UK government launched a public consultation at the end of 2009 to gather information and opinions on the prospect of more statutory protection. By the end of the extended consultation period over a quarter of a million people in 223 countries across the world had pledged their support for a complete no-take zone across BIOT. Significant support also came from the zoo and aquarium community with statements of support from BIAZA, EAZA, EUAC, IAF and AZA, individual letters from zoos and aquariums and pages of signatures collected in aquariums throughout the UK. Many regional associations and organisations featured the Chagos campaign link (www.protectchagos.org) on their websites.

On 1 April 2010 the UK government announced its plan to declare the entire British Indian Ocean Territory a Marine Protected Area (MPA). The initiative, though not without controversy, has in one move increased the total of strictly protected areas in the world's oceans by 40%. The Chagos archipelago now represents a sanctuary in the Indian Ocean where natural habitats can exist without exploitation and provide a benchmark against which to compare changes to reefs elsewhere. The consultation report recognised the value of the responses from individuals and organisations, demonstrating the impact that zoos and aquariums can have in these initiatives.

There is still a long way to go in terms of building and implementing a management and enforcement structure for the Chagos. The cost of patrolling, monitoring and dealing with illegal fishing is costly, but is a vital element of the project. Illegal fishing for shark fins and sea cucumbers will continue to be threats and will need to be controlled. Discussions with all stakeholders will continue and may have impacts on the way the MPA develops. Crucially, the closure of the tuna fisheries will need to be closely monitored if its effects on the pelagic species of Chagos and the wider region are to be properly understood.

While the negotiations and legal wrangling that will lead to a well thought out and durable framework for the Chagos go on, the key hurdle has already been overcome. By setting out the aspiration to protect for the future valuable areas of our marine environment the UK has placed a marker of intent. There are other extremely large protected areas in the pipeline around the world, perhaps all made a little bit more likely by the declaration of the worlds biggest to date – the Chagos Marine Protected Area.

The Future is Ours

BURGERS' ZOO IN ARNHEM IS THE PRIME SPONSOR BEHIND THE FUTURE FOR NATURE FOUNDATION, AN ORGANISATION WHICH SUPPORTS THE WORK OF YOUNG UP-AND-COMING CONSERVATIONISTS.

Pippa M Groenenberg, Future for Nature Foundation, Netherlands

'The future is ours'. It's a much used phrase when referring to nature conservation, as we strive to protect nature, preserve rainforests and prevent the extinction of endangered species for the benefit of future generations. And so we should. Future generations should be able to enjoy the sights of majestic forests and mangroves in the Brazilian Amazon, use the medicines provided by nature, and inhale its oxygen. And not only should humankind be allowed to indulge in these luxuries, its entire future is dependent on the existence of nature and of biodiversity to be able to survive. Without a sufficient amount of biodiversity, we may become extinct sooner than many other species. Furthermore, it can be argued, whether this is done on philosophical, religious or other grounds, that humankind has a duty to protect species from becoming extinct.

Many zoos recognise such a duty, or feel a desire, to become involved in the prevention of extinction of species. The EEP (European Endangered species Programme) for example is one of the instruments which zoos employ to battle the extinction of species. This has already resulted in some remarkable achievements, one example of which was shown in the last issue of *Zooquaria*: reintroduction into the wild of a species of oryx which had previously become extinct in the wild. The article explained that the herd is currently increasing in size in the wild, on its own.

Yet the EEP is not the only way in which zoos are involved in preventing species from going extinct. Salzburg Zoo, for example, supports a project reintroducing Przewalski horses in Mongolia, while Zurich Zoo contributes to the management costs and creation of a fund for the Masoala National Park, and Burgers' Zoo

in Arnhem supports the Future for Nature Foundation.

The Future for Nature Foundation focuses on future generations of conservationists to ensure that future generations may also be able to enjoy the beauty, benefits and necessary resources provided through the existence of biodiversity. The foundation believes it is possible that there will be a world in which humans and all other species of animals as well as plants can coexist. It also believes that it is an absolute necessity to create such a world.

With the increased and increasing focus on materialistic joys, and increased prosperity globally, it may appear that the potential attainment of this world of beneficial coexistence is slipping away rapidly. Young urban professionals are interested in status, luxury and glamorous networking parties. They are only vaguely aware that the ingredients for their Mojioto's and White Russians come from nature 'out there' somewhere. Research has shown that many young citizens do not even know that milk comes from cows, thinking it comes from factories.

THE FUTURE FOR NATURE

Yet there is hope! There are also many thousands of conservationists 'out there' working daily to protect species of plant or animal from becoming extinct, including many young people. Unfortunately, however, they all run into many problems, independent of whether they are part of large institutions or operating individually. These include ignorance among the local population of the dire state of many species, conflicting interests of big businesses, lack of financing, lack of public awareness of the consequences of the loss of biodiversity, politicians looking for short wins, inability to reach decision makers and so on. Conservationists who are halfway or reaching the end of their career have in all probability managed to build a network of like-minded people, influential people and colleagues. Through such a network they find a support function, can create publicity, find funding, and so on.

Future for Nature assists young, outstanding conservationists to open up these same options to have impact. The Foundation annually honours three young individuals with an award for their exceptional achievements in protecting a species. The three winners are chosen by an international selection committee of outstanding conservationists, such as Simon Stuart (Chair IUCN Species Survival Commission) and Angela Cropper (Vice-president of UNEP), from a selection of well over a hundred applicants yearly. The Award consists of a prize of €50.000 for each of the three winners. This gives them the financial wherewithal to continue their work for a substantial period of time. Furthermore, the awarding of the prize at the annual Future for Nature Award Event, provides these young winners with exactly the kind of outreach, network and collegial feedback systems, that they would otherwise need years or even decades to build. As a result they can effectively and efficiently work to ensure a good Future for Nature.

To see some of the award winners, please turn the page.

CLOCKWISE, FROM TOP: TRAINING IN PROGRESS; INZA KONE MEMBERS OF THE RASAPCI TEAM AT KOTOAGNOUAN; FIELDWORK; LEOPARD; INTERVIEW AT KADJAKRO

Future for Nature Award Winners

On 19 March the three 2010 winners received their awards, bringing the number of winners to a grand total of nine so far. The winners have come from all five continents and have focused on a wide variety of species, including manatees, snow leopards, giant sea turtles and various types of primates. Three of the nine are featured below. For more information visit **www.futurefornature.net**

Inza Koné - Primates

Inza Koné (Ivory Coast) received the Future for Nature Award 2009 for his primate protection efforts. He has been working for several years in the Tanoé forest in Côte d'Ivoire. This forest is a top priority site for conservation of primates in West Africa – most notably three endangered primate species: the roloway monkey (*Cercopithecus roloway*), the white-napped mangabey (*Cercocebus atys lunulatus*) and Miss Waldron's red colobus (*Piliocolobus badius waldronae*). This last primate was declared to be extinct in 2000, but recent evidence revived the hope for rediscovery in the Tanoé forest.

Inza initiated a community-based management program for the Tanoé forest. Furthermore, Inza initiated and led a successful, national and international protest campaign, preventing the Tanoé forest from being replaced by palm oil plantations – which would have led to the extinction of many endangered species.

Jean Thomas – Tenkile tree kangaroo

Jean Thomas (Australia/Papua New Guinea) received the Future for Nature Award 2010 for her internationally outstanding Tenkile tree kangaroo protection efforts. She has been working on conserving the threatened Tenkile population in Papua New Guinea since 2003.

When Jean started working with the Tenkile Conservation Alliance in 2003, the population of Tenkile tree kangaroos was down to a hundred. This rare species lives only in Papua New Guinea. The main threat to the kangaroos is hunting, which became problematic with the growing human population. Jean has undertaken various community development initiatives to counter this problem including keeping rabbits and chickens domestically for protein, and installing water tanks. Furthermore, she teaches the local landowners about ecosystems and climate change, and features in a local radio programme. This work aims to establish a conservation area and it is estimated that the tree kangaroos have already increased to 300. Her innovative approach and steady commitment to the conservation of the kangaroo make her a commendable winner of the Future for Nature Award 2010.

Mohammad Farhadinia – Asiatic cheetah and Persian leopard

Mohammad Farhadinia (Iran) received the Future for Nature Award 2009 for his internationally outstanding cheetah and leopard protection efforts. He has been involved in research and conservation of the Iranian cats since 1994. Mohammad co-founded the Iranian Cheetah Society (ICS) in 2001, and has been managing it ever since. The ICS has been nationally and internationally well-known due to its impressive and continuous efforts in Iran to save the cheetah as well as other big carnivores, including the leopard. These include biological research, law enforcement, raising of public awareness and systematic capacity building.

Iran is home to the last viable populations of two vanishing cats in the world: the Asiatic cheetah and the Persian leopard. With fewer than 100 in the wild, the Asiatic cheetahs exist in a variety of the Iranian desert mountainous habitats feeding on wild goats and wild sheep, unlike their plain dwelling African cousins. Meanwhile, the Persian leopards occur in higher density (ca >500), but as a result of serious conflict with local people, they suffer high human-induced mortality.

Generically speaking

TO SET THE SCENE FOR OUR GREAT DEBATE ON WHITE TIGERS OVER THE PAGE, WE TAKE A LOOK AT THE STATUS OF GENERIC, INCLUDING WHITE, TIGERS IN EAZA ZOOS, AND FIND OUT WHAT THE INSTITUTIONS THAT KEEP THEM WANT TO DO ABOUT THEM.

Pavel Brandl, Prague Zoo

Generic tigers represent a 'grey zone' of European big cat breeding. They are presented under different names, sometimes even as pure Bengal tigers (*Panthera tigris tigris*), but they are evidently the 'zoo tigers' of unknown mixed origin. There are no Bengal tigers registered in the International Tiger Studbook in the European region (Muller, 2005).

The need to get more exact data was stressed during the Felid TAG meeting in Amsterdam, 2009. Forty-five potential holders of generic tigers have been identified through ISIS and circulated with a 'generic tiger' questionnaire. Of these, 42 holders responded. Five of them do not hold the generic animals any more. The remaining 37 were asked questions related to how many generic tigers are kept in their zoos, the proportion of white tigers they hold, the reasons for keeping generic tigers, and their willingness to replace them with pure animals.

It emerged that, of the 123 generic tigers kept in EAZA facilities, white tigers represent some 52% of the total, and are kept in 23 of the 37 responding facilities.

Various reasons were given by the zoos for keeping their generic tigers. 'Waiting for them to die out' was one, while 'white tiger breeding and keeping' was another. Lack of availability of pure animals, possession of confiscated animals, and production of cubs for marketing or presentation reasons were also cited.

Of the 37 institutions that responded, 16 already keep pure bred tigers along with their generic animals, but in total 18 of the 37 said that they would like to replace their generic tigers with pure ones if possible. Only five of the institutions that only hold generic tigers said that they did not want to replace them.

These 123 generic tigers represent approximately a quarter of all the tigers held in EAZA institutions. The remaining 75% are mainly either Amur tigers (*P. tigris altaica*) and Sumatran tigers (*P. tigris sumatrae*), with a few Malayan tigers (*P. tigris jacksoni*). Only the Amurs number more than the generic tigers within the EAZA region. Meanwhile, in the EAZA Felid TAG Regional Collection Plan, the target population of EEP subspecies is set at 200 for the Amur, and 150 for the Sumatran, the latter falling well below this number.

All in all, the conservation value of generic tigers is disputable. They definitely hold genetic information not presented in our conservation breeding programmes, but because of the non-natural mixing this information could not be used for conservation breeding. In the North American region, the generic tiger population held in AZA facilities is managed to zero, a goal that could be reached in Europe within about 20 years, based on the animals' lifespan.

The opposite approach is to include generic white tigers in the regional collection plan as a domestic breed. Several EAZA zoos expressed via the questionnaire their wish to keep the white tigers because they are charismatic animals which can be used for conservation campaigns concerning wild tigers.

Another reason put forward was education, as white tigers can be used to demonstrate colour variability within a species, and the effects of leucism.

A third approach could be to start a third EEP, based on pure Bengal tigers, while the generic tigers are managed to zero. Using the pure Bengal tigers of both colour morphs would enable the particular holders to work with the white morph and could have a positive conservation effect as well.

Now turn the page for our debate on the motion: There is no place for white tigers in a modern zoo

FOR THE MOTION: Sarah Christie, East & Southeast Asia Conservation Programme Manager, ZSL, and EEP Coordinator for Amur tigers

AGAINST THE MOTION: Eric Bairrão Ruivo, Science and Conservation Director, ZooParc de Beauval

The motion: There is no place for

Sarah Christie

The mission statements of EAZA and of most EAZA members include a clear focus on conserving endangered species. Tigers are an endangered species, but white tigers *per se* are not; they are merely individuals expressing a recessive gene recorded in the wild only in India and only rarely. There is nothing intrinsically bad about the white gene, of course; were it to crop up naturally in a zoo population of pure-bred Indian tigers our strategy of conserving wild gene diversity might lead us to treat it no differently from any other gene, selecting neither for nor against. But white tigers outside India today are all Amur-Indian hybrids and should never be labelled as Indian tigers, though they often are. They are also highly inbred, which further reduces the usefulness of their gene pool.

The non-persistence of the gene in the wild – no wild white tiger has been seen since 1958 – is a clear indication that it carries negative survival value. Actively selecting for the white gene is therefore working *against* survival value for the taxon. It's effectively creating a domestic animal – the antithesis of endangered species management, and an approach more appropriate for a 19th century than a 21st century animal collection.

White tiger enclosures in zoos reduce the space available for maintenance of populations of endangered animals. Current indications are that many of our populations are already unlikely to be viable in the long term and the IUCN has already noted that factors such as climate change imply increased need for conservation breeding. Just as the world realises the importance of our work, and just as the AZA rules that accredited members may not breed generic tigers at all, how on earth can we justify using large amounts of EAZA space for animals irrelevant to conservation? Space that could house a pair of an endangered large cats or many smaller species?

And space is not the only

consideration – there is also welfare. In order to continually express a recessive gene one must inbreed continually, or at least until the breeding pool is so impoverished that all individuals carry two copies of it. The primary result of this is expression of damaging recessive genes. Continual inbreeding of white tigers has produced profound birth defects such as immune deficiency, distortion of the spine, cleft palates, mental impairments and grotesquely crossed eyes. In one white tiger line in the US, inbred for over 25 years, neonatal mortality often exceeded 80%.

One of the more recent and visible instances can be seen in the photo above. Tigers with such problems of course never make it to display enclosures and generally die young.

Such continual inbreeding also rapidly narrows the gene pool, so that even if damaging recessives were eliminated the population becomes totally unsuitable for any future reintroduction or other genetic support for wild populations – even if it were of pure subspecies descent.

Of course, reintroduction potential is only one of the conservation support functions of zoo animals. There are also education/inspiration, fundraising, and generation of useful data and skills. *Perhaps* keeping white tigers in our zoos can be justified in these terms; we await arguments to this effect.

Eric Bairrão Ruivo

I fully agree with Sarah regarding the EAZA mission statement and the need for members to dedicate resources and space to conservation of endangered species. I also agree with all of Sarah's arguments when she opposes breeding of white tigers. Any zoo person dedicated to wildlife conservation has to agree with those arguments. So what am I doing here playing the role of devil's advocate?

It is simple, as Sarah infers at the end of her arguments: there are other factors that can support exhibiting white tigers in zoos. In our Regional Collection Plans we have agreed criteria for maintaining species in our collections. One of them is public interest: those animals that bring more visitors to our zoos. And the public (unfortunately) is attracted by curiosities such as white tigers or hand reared baby polar bears. If you look at ZooParc de Beauval, for example, the arrival of white tigers simply doubled the attendance in one year.

More visitors means more money, and more money means that more conservation is possible. Zoos can only accomplish their conservation mission if they have the financial means for this. Beauval is again a clear example. Thanks to white tigers the company can now invest almost €200,000 per year for *in situ* conservation projects. I believe this is quite substantial for a private company and it is all thanks to white tigers.

But we should also use the fact that we have more visitors coming to see the white tigers to talk about and raise awareness of the conservation of tigers in the wild. In this sense white tigers can be seen as ambassadors for the endangered tiger subspecies. Personally I feel that a zoo keeping white tigers should also have a facility available for real endangered subspecies, in order not to compete for space with the tigers programmes we have.

A final argument is the fact that in the past years, the EAZA tiger

white tigers in a modern zoo

programmes were unable to provide the animals that EAZA members needed. So for many zoos the options were to not keep tigers, to keep generic tigers or to keep white tigers. From these three options, none of which has conservation value, to keep white tigers is surely the one that has the most positive financial impact for a company (and not all EAZA member zoos are municipal or non-profit organisations). Regarding the genetic arguments for not breeding white tigers, I have to say that you also find genetic abnormalities in well-managed species. But I do not want to argue against Sarah's photo. I just want to show a photo of white tiger cubs at ZooParc de Beauval (above): the image says more than a thousand words.

Sarah Christie

Yes, white tigers are popular. So were chimpanzees' tea parties in living memory, and orangutan shows are still crowd-pullers in Asia. Should we also stage these to get the income? Surely it is our responsibility to *guide* the evolution of visitor perception; we should not trail behind it mopping up the money.

Yes, white tigers can increase income and this *can* lead to increased conservation expenditure, but one such instance means nothing. This argument only works if the average conservation contribution of zoos with white tigers exceeds that of those with proper tigers. I look forward to hard data here, but suspect that in reality the zoos that contribute most to conservation are those whose conservation mission and forward thinking preclude the exhibition of mutant freaks. Even were a direct link shown, would the amount gained really outweigh the negatives – distracting visitors from proper tigers and their conservation, and taking space needed to ensure zoos can continue to keep tigers, and generate conservation support for them, in the future?

The argument that white tigers can enthuse and inspire visitors and enable presentation of wild tiger issues is also flawed. Even if graphics explain that white tigers are not a separate or endangered taxon, most visitors don't read or understand such information. They come away thinking white tigers are endangered, an overall *decrease* in their understanding. And most such zoos are economical with the truth in their material; it is not in their interests to highlight conservation issues when to do so would also highlight that their own tigers are disconnected from such problems, and few can resist the temptation to publicise the birth of 'endangered white tiger cubs'.

In any case, when did real tigers – like this cub playing in snow at Vienna zoo (below) – stop being stunning? The tiger is the world's most popular animal, and well presented proper tigers are more than capable of engaging visitors. It is unnecessary to resort to displaying inbred curiosities. What next, a calf with two heads? Yet more space lost to 'Golden Tabby' tigers alongside the white ones?

This discussion is not just about a single taxon – it also concerns the attitude of the human race to the natural world. Humans are already far too disconnected from the realities of nature, and zoos have unique opportunities to re-establish such connections on both emotional and intellectual levels. Do we intend to do so, or do we instead prefer to be populist entertainers?

Eric Bairrão Ruivo

EAZA is a very diverse organisation, with a very heterogeneous group of institutions and people, with different views, different opinions, different goals, different agendas and even different levels of responsibility. A very good example of this is that most ancient debate in the zoo world between public and private zoological institutions. But that diversity is also what makes EAZA such a rich and unique organisation: even with different views and opinions we can work together, have common goals and do a lot for the conservation and sustainability of the incredible biodiversity of our planet.

This is also the reason why I accepted the invitation to participate in this debate, one in which, in principle, I knew from the start that I was going to stand for the 'bad' position. We always hope for progress through debates and the search for consensus is a key issue when you bring people and institutions together. I was not hoping to change anybody's convictions, especially those of Sarah, but I was hoping that we could find a way of working together and of accepting our differences.

It is not up to me or Sarah to decide what is right or wrong, but I definitively cannot accept some of her last arguments. Effectively to compare keeping white tigers in a natural environment, with all that is needed for their welfare, and performing their natural behaviour, to chimpanzees' tea parties is in the minimum unfair and I would even say offensive for people that have done a lot for the development of the profession and for conservation.

To state that zoos exhibiting normal tigers contribute more for conservation than zoos exhibiting white tigers is also unreasonable as no real figures are available and, in any case, that is not even the subject of this debate. Sarah also forgets that in the first part of this debate I said that zoos keeping white tigers should also have a facility available for real endangered subspecies, in order not to compete for space with the tiger programmes we have, and to contribute to public awareness and tiger conservation.

Something that Sarah did not mention in her arguments is that real endangered tigers are now very difficult to obtain due to the problems that the tiger EEPs have been facing with hybrids being found in the population, with the consequence that many animals had to be removed from breeding. And there are doubts regarding the 'purity' of some animals that still need to be tested. There is an increasing number of institutions opting out of keeping endangered species as they cannot find the animals they need and that are now starting to keep hybrids or white tigers. I think this a real problem that needs to be solved, much more important than the white tiger debate.

Sarah Christie

This debate is fundamentally about what zoos are for. Is our mission of contributing to wildlife conservation via inspiration, fundraising, research and the genetic lifeboat our reason for being, or are we primarily commercial operators of visitor attractions? Revenue generation should be important only in terms of enabling our mission; when it becomes an end in itself, we have lost our way. I reiterate the need for research on whether zoos with orange or white tigers overall contribute more tiger conservation funds – but my money is on the former and I have supporting data on contributions from ZSL, the EAZA Tiger Campaign, Australia Zoo and Minnesota.

My comparison between chimps' tea parties and exhibiting white tigers was not about welfare (the welfare arguments against white tiger inbreeding will suffice), but about our responsibility to guide, not follow, visitor perceptions. And I am astonished at the suggestion that temporary problems in the tiger EEP – overall one of EAZA's better programmes – are justification for allocating EAZA space to animals that are not only non-endangered but also actively distract the public from connection with the natural world.

At a time when even the Amur tiger – for so long stable in the wild – has joined the other tigers in decline, our responsibility to provide the maximum possible conservation support for tigers is greater than ever. To do so, we need to allocate all possible space to, and inspire our visitors to care about, real, wild, tigers. Not inbred – effectively, domesticated – genetic oddities.

Eric Bairrão Ruivo

The debate cannot be simply reduced to the question of what zoos are for. There are many other important issues that need to be brought into the equation; one of them is certainly how zoos can find the funds to fulfil their mission and their ideals. White tigers can be an excellent tool for this.

It is effectively a very big and difficult task, especially for private zoos, to find the necessary funds for the conservation of endangered species, and we should not ignore the fact that we are first and foremost commercial operators and only then conservation institutions. Nonetheless it is rather unfair to say that commercialism is the only end when an institution like Beauval annually allocates €250,000 for conservation and research programmes. And this is just one example among many others.

Sarah says that all available space should be dedicated to the reproduction of pure tigers. But where are all the tigers needed for all these facilities? A private zoo has pressures that don't allow it to wait for better times. And I also clearly stated that a zoo keeping white tigers should also have a facility for endangered tiger subspecies and should dedicate time, tools and staff to raising awareness of the need for the conservation of this lovely species.

At the end of this debate, I wish only that the EAZA community can continue to work together in spite of the diversity of and differences between its members, accepting the fact that different institutions have different pressures, and different ways of coping with these pressures. Of more importance is what we collectively can achieve, respecting each other in the framework of a code of ethics that we built together.

HAVE YOUR SAY

Would you like to respond to the debaters on this issue? Please write to Eoghan O'Sullivan with your comments at eoghan.osullivan@eaza.net.

Two by two on the AArk

AMPHIBIAN ARK ANNOUNCES A NEW AMPHIBIAN CONSERVATION PROJECT LIST, AND INVITES YOU TO GET INVOLVED

Kevin Johnson, Taxon Officer, Amphibian Ark

The Amphibian Ark (AArk) has just released a new list of international amphibian conservation projects which are currently seeking external support and resources to continue their work. The list is known as **Frog Match Maker – *where frogs find their princes!*** and can be found at www.aarkfrogmatchmaker.com. It currently includes 50 amphibian projects from 19 countries on four continents. The primary aim of this new list is to foster partnerships between suitable funding and support organisations and amphibian conservation projects, and we encourage you to take a few minutes to search the list for any projects that might be a good fit with your own organisations' conservation funding.

AArk's mission is ***to ensure the global survival of amphibians, focusing on those that cannot currently be safeguarded in nature***. One of the important ways we are achieving this is to help foster new, and strengthen existing partnerships between those who are striving to undertake vital amphibian conservation work, and those who are in a position to be able to assist by providing staff time and/or training support, supplies, or much-needed funding to ensure that these projects can reach their successful conclusions.

Almost a third of all amphibian species are currently threatened or extinct, and so little is known about approximately a quarter of the amphibian species, that their status cannot be determined (IUCN, 2010). Over 40% of known amphibian populations are declining and this figure is expected to rise in the coming years (www.iucnredlist.org/initiatives/amphibians/analysis). Though nearly all countries where amphibians exist are known to have declining populations, most of the worst-affected areas are in Southern and Central America and the Caribbean. This is where the resources required to help with research into amphibian declines and to establish *ex situ* conservation programmes are most needed. Frog Match Maker provides a concise and easy way for your institution to browse amphibian conservation projects, which can be searched by country, region, species, funding required, and by project type. So, as an example, if your institution has an interest in the Caribbean Islands, and an interest in captive propagation of amphibians, a couple of clicks in the database will reveal five projects in four Caribbean countries, seeking between $30 and $200,000 to assist with their projects.

Projects from the database will be featured in the AArk's new web site (due for release before June 2010) and in each edition of the AArk newsletter. We hope to be able to report on new partnerships in the coming months, and to promote the work and support from EAZA members in assisting our colleagues who are looking for help.

There are many examples of very successful partnerships that have been formed by zoological institutions and amphibian conservation organisations. Durrell Wildlife Conservation Trust, ZSL London Zoo, Parken Zoo and Chester Zoo have joined forces with local government on the islands of Montserrat and Dominica to study the mountain chicken frog, and to establish a captive breeding programme; Houston Zoo has joined with a number of other AZA zoos and aquariums, academic institutions, and international conservation organisations to establish the El Valle Amphibian Conservation Center in Panama; and Omaha's Henry Doorly Zoo is working with Johannesburg Zoo to establish the Johannesburg Zoo Frog Project which will mirror the Henry Doorly Zoo's Amphibian Conservation Area but be exclusively for Southern African amphibians. These partnerships and many more provide opportunities for zoos with much-needed resources and/or amphibian expertise to work alongside people from other organisations to achieve their conservation goals.

These projects need your support to help save threatened amphibians, so please, if you are looking for worthwhile conservation projects to partner with, Frog Match Maker is a good starting point!

HOW TO GET INVOLVED

Additional amphibian conservation projects are welcome in the list, and any organisation that would like to have their project included in this database should download the AArk Conservation Project Data form, fill it out, and return it, along with any photos of the project, to KevinJ@AmphibianArk.org. All projects in the list will be reviewed on an annual basis to assess their status, and to be removed if the required resources have been obtained, or if the project has been completed.

Frog Match Maker is yet another way that the Amphibian Ark is helping to foster partnerships among amphibian conservation organisations around the world, all of which are working together to save the world's endangered amphibians. Please visit www.aarkfrogmatchmaker.com to see how you and your organisation might be able to help.

Back from the brink

THE ENDEMIC DUCKS OF MADAGASCAR ARE AMONG THE MOST ENDANGERED SPECIES IN THE WORLD. COLLABORATIVE CONSERVATION AND CAPTIVE BREEDING PROGRAMMES ARE THEIR FINAL CHANCE FOR SURVIVAL.

David Jeggo, Harriet Whitford & Glyn Young, Durrell

Madagascar is home to a quite remarkable assemblage of endemic wildfowl. In fact, few other places in the world have such a concentration of endangered *Anseriformes*. This highlights the real pressure the wetlands of Madagascar are under and the very real threat to the wildlife that lives within them. Consequently, Durrell has been working in some of the island's wetlands for more than two decades to help conserve them and the animals that depend upon their existence. The island is home to three endemic duck species: Madagascar pochard (*Aythya innotata*) which is listed by IUCN as Critically Endangered; and Madagascar teal (*Anas bernieri*) and Meller's duck (*Anas melleri*), both listed as Endangered.

It was in the mid 1980s Nigel Collar and Oliver Langrand first highlighted the Madagascar pochard as being severely threatened. In the first of his classic Red Data Books, *Threatened Birds of Africa and Related Islands*, Collar suggested the species might be saved through captive breeding. Encouraged by this, in 1989, a joint Durrell (then JWPT) and Wildfowl &Wetlands Trust (WWT) expedition visited Madagascar in search of the bird. This expedition failed to find any and despite a single bird being caught by fishermen in 1991 subsequent further extensive searches also found none: it was feared that efforts were too late and the species had already become extinct.

However, Durrell's work with the endemic ducks of Madagascar, had begun earlier in 1977 when two pairs of Meller's duck were imported from Mauritius. Originally introduced to this island, the wild population had all but died out. At the time, the two imported pairs were the only ones outside Mauritius and Madagascar and these were joined in 1993 and 1997 by six and seven wild-caught birds respectively from two expeditions to Madagascar itself. The development of this new population resulted in the establishment of the EEP for Meller's duck in 1997. In Madagascar itself, the species occurs principally in the eastern drainage systems of the high plateau. It is now sadly uncommon over most of its former range and probably continues to decline rapidly.

With the possible demise of the pochard and the realisation that the endemic ducks of Madagascar were all under threat, Durrell next turned its attention to the Madagascar teal. In the early 1990s the teal was only known to exist at Lake Bemamba, with a population considered as low as only 20 birds. Durrell expeditions collected four teal in 1993 and four again in 1995 which were brought back to Jersey. These teal first bred in 1998 when two pairs produced young. The captive population were joined by three more wild-caught siblings who arrived in Jersey in late 1998. Ten of these wild-caught birds have subsequently contributed to the captive population which now stands at well over 200.

Although listed as Endangered the Madagascar teal is thankfully not as threatened as earlier thought. It is distributed in a narrow coastal strip of mangrove forest along much of the western coast of the island and the total population is now estimated to be between 1,500 and 2,500 individuals. However, it is still believed to be in decline.

RETURN OF THE POCHARD

The Madagascar pochard's rediscovery was made in 2006 by researchers of The Peregrine Fund while in the area looking for Madagascar harrier

OPPOSITE, TOP LEFT: MELLER'S DUCK AND MADAGASCAR TEAL BY M DRYDEN, JERSEY. **ALL OTHER PICTURES**: MADAGASCAR POCHARDS BY OWEN JOINER, WWT

(*Circus macrosceles*); just 20 pochard, comprising both adults and juveniles were located. This population seems to be confined to only one lake which is surrounded by, more or less, intact forest. Quite why the species has persisted here is uncertain but is possibly down to the isolation of the area.

Consequently, almost 20 years after their first joint expedition to Madagascar, Durrell and WWT have once again joined forces along with The Peregrine Fund and the Madagascar Government in a bid to protect this fragile population and restore it to former areas. Amid fears that delay might jeopardise its survival, plans for captive breeding were activated in 2009 and three clutches of eggs were collected and hatched in captivity. Until a new facility can be constructed within the region of Sofia where the last pochards are, the first ducklings were cared for at a local hotel but subsequently transferred to Durrell's chelonian facility at Ampijoroa where water tanks originally intended for fresh-water turtles (*Erymnochelys madagascariensis*) have been utilised as temporary accommodation for the what are now juvenile pochard.

From the eggs that were collected, 24 hatched, one duckling died, but all the rest are doing very well and the resulting sex ratio is 7:16. Avicultural staff from either WWT or Durrell have been continually present to oversee the care of the ducks. There are no plans for any pochard to leave Madagascar and so they will all reside at the Project's conservation breeding centre once it is constructed.

Of Madagascar's endemic duck species the teal is probably the most secure, there is now a far greater understanding of its biology and requirements and at least some areas of its habit are protected including Lake Bedo as a Ramsar site. The pochard is clearly by far the most at risk while Meller's duck remains under considerable threat until more can be done to halt decline and protect the water bodies on which it depends.

It now remains to be seen how the breeding in captivity of the pochard will progress but the expectations are high and chances of success good. At one time it was being bred well in France, by Jean Delacour, and in the UK and Netherlands. For the teal, this remains a popular and free breeding species in captivity; oddly the programme has no official status and the EAZA waterfowl TAG is recommending that it should become an ESB or EEP. This will be addressed soon. The challenges for this programme are and will remain to breed only those offspring that are required, and for participants to adhere to breeding recommendations. The Meller's duck EEP needs some work and to achieve its full potential will require more participating institutions. Analysis of the studbook and production of a master plan, which will be done during 2010, will produce a set of recommendations needed in order to move this programme forward. This is the only formal EAZA programme for an anseriform and presents a number of challenges to make it truly successful in contributing to the species' survival.

Eyes of the dragon

IN A COLLABORATIVE MOVE, KOMODO DRAGONS HAVE ARRIVED AT SOSTO ZOO IN HUNGARY

Dr Endre Papp, zoological vice-director, Sosto Zoo

After a two years of preparation, and thanks to the cooperation of the Indonesian and Hungarian governments, Ragunan Zoological Park (Jakarta, Indonesia) and Sosto Zoo (Nyíregyháza, Hungary) have come to a sister zoo collaboration on Komodo dragons. The first period of the agreement is for five years, and not only covers exchange of information and internship courses, but will include regular zoological exchange programmes. This will allow Sosto Zoo to share its technical and scientific developments with the sister zoo in Komodo National Park and Wae Wuul Nature Reserve.

The first stage of the collaboration was launched in February, with the introduction of a breeding pair of Komodo dragons (*Varanus komodiensis*) to Sosto Zoo that were born in Ragunan Zoo. The imposing 11-year-old animals (the male, Bagol, is 3m and the female, Indri, is 2.7m) – along with other endangered animals such as a breeding pair of greater one-horned rhino, a Bornean orangutan family and Bali mynahs – will be the pride of a brand new exhibit which opened at the end of April 2010.

This new 'Green Pyramid' at Sosto Zoo represents the marvellous flora and fauna of Southeast Asia and, in particular, Indonesia. Expanding across over 4,000 square metres in a three-storey complex, it includes a new tropical house and aquarium enabled by a €7 million aid grant. Throughout the complex, the zoo is striving to present a wide range of the continent's wildlife from microscopic marine fauna to the Asian elephant. The dragons arrived after a 46-hour journey, and quickly settled into their 200 square metre exhibit, which provides them with a variety of natural substrates and structures, plantations and UV penetrating skylights. They adapted very rapidly, thanks to the thorough preparations in advance, and the welcome presence of their Indonesian caretakers, who escorted the animals from Indonesia. We are proud that the arrival of these dragons has become possible as part of a long-term scientific collaboration between Hungary and Indonesia. The understanding between the presidents of both countries guarantees that a fruitful cooperation can be established between the Hunagarian and the Indonesian authorities involved in the conservation of the species.

Komodo dragon EEP

The Komodo dragon EEP population currently stands at 52 animals (19.14.19) kept in 16 institutions. Over the last five years the breeding results of Komodo dragons in captivity have increased. In 2009 13 juvenile Komodo dragons were hatched in two institutions (Praha and Rotterdam). However, given the small founder basis, new genetically independent animals are very welcome. The Komodo dragon EEP is actively involved and providing funding for an *in situ* project on Flores, called the Wae Wuul project. The EEP funds the project combining infrastructural development, social awareness and education programmes, warden patrols and legislative enforcement, and annual population surveys.

Classic cracids

A GERMAN ZOO HAS BECOME A SPECIALIST IN CURASSOWS AND GUANS, THE LARGE BIRDS OF SOUTHERN AMERICA THAT ARE STRUGGLING IN THE WILD

Simon Bruslund Jensen and Frank Lehmann, Weltvogelpark Walsrode

Together with the Cracid Breeding and Conservation Centre (CBCC), in Zutendaal, Belgium, the Weltvogelpark Walsrode is intensifying its breeding of and research on curassows and guans. Under the term cracids they represent a separate suborder of the *Galliformes*. These charismatic pheasant-sized, almost turkey-sized birds are distributed throughout South and Central America, and of the 50 different species, 13 species are Threatened while the Alagoas curassow (*Mitu mitu*) is Extinct in the Wild.

In the neotropical region they belong to the most important bio-indicators of the quality of the environment. They are under considerable hunting pressure for human meat consumption but also play a significant role as prey for wild predators. They are important distributors of seeds too. Most species inhabit the tropical rainforests but some are also found in other habitats such as vast grasslands and wetlands like the Pantanal. Others have very restricted distributions such as the horned guan (*Oreophasis derbianus*) that is only found in the cloud forests of the mountains of southern Mexico and on volcanoes in northern Guatemala.

Due to specialised and prolonged tracheas the males of the subfamily *Cracinae* (curassows) are able to produce extremely low tones, the so-called booming. These can be detected by other cracids over large distances and are particularly effective in penetrating the thick foliage of the rainforest.

The Weltvogelpark is particularly excited about the two new and very rare bird species in their collection. The red-billed curassow (*Crax blumenbachi*, an EEP species) and black-fronted piping-guan (*Pipile jacutinga*) both originate from the Atlantic coastal rainforests that once stretched along the entire Brasilian coastline. This rainforest has suffered enormously under the

RED-BILLED CURASSOW MALE IN THE WELTVOGELPARK

INGO KLINGER

BARE-FACED CURASSOW MALE IN THE WELTVOGELPARK

WELTVOGELPARK WALSRODE

influence of man, particularly due to the development of sugarcane plantations to the point where only small island-like fragments of forest remain. As the Atlantic costal rainforest has always been isolated from the Amazon rainforest, its wildlife and plants have evolved independently and many are endemic. Today there are considerable efforts made not only to save these remaining forests but also to reestablish the forest where ever possible. In cooperation with CRAX Brazil and CRAX International the Weltvogelpark is actively supporting the development of healthy populations of the red-billed curassow and black-fronted piping-guan in Brazil. Over more than a decade successful reintroductions into safe rainforest areas have been made with captive bred birds of both species. Credit for this successful programme belongs not least with Roberto Azeredo who heads it up and has put his vast experience into the CRAX Brazil breeding centre from the beginning. To create an additional focus on these species and the conservation efforts made, a natural rainforest exhibit has been created at the Weltvogelpark and the birds seem to have settled so well that we could hope to breed them already this season. The Weltvogelpark is the only zoo where the black-fronted piping-guan can be seen in Europe.

The blue-billed curassow (*Crax alberti*) is very rare in Europe, and even in their native Columbia they are becoming a very rare sight and considered Critically Endangered. Together with the CCBC in Belgium and a partner in Spain the Weltvogelpark is aiming to establish a genetically diverse population in Europe. In recent years this goal has come closer thanks to good breeding results which also provided valuable details on their reproductive biology. As indicated by their name they are the only species in the genus that has blue wattles at the base of their bills.

Until recently the bare-faced curassow (*Crax fasciolata*) was fairly common in aviculture, but in recent years they appear to have become more scarce. In the wild the populations still seem to be safe though, as the species is more often encountered in fairly open areas than most other curassow species. The name is fitting as the sides of the head are naked; the base of the bill is covered with a wide patch of yellow skin but lacks prominent wattles.

In the Weltvogelpark Walsrode all cracids are provided with spacious aviaries. They generally do quite well in mixed exhibits with other bird species such as parrots, passerines and sometimes even other smaller *Galliformes*. For their wellbeing and natural behaviour it is important to provide natural foliage and good perches placed fairly high up in the aviary. The aviaries must have adjacent suitable indoor facilities as all cracids are sensitive to frost and temperatures below freezing.

In the wild they are predominantly vegetarians that feed on fruits, berries, buds and seeds. In aviculture they need in addition to this a high quality pheasant-pellet as main diet which provides the birds with the needed protein as well as vitamins and minerals. As extra supplements they enjoy boiled eggs, rice or yams once in a while.

In an aviary as well as in the wild cracids place their nests at a high and protected site. If enough foliage is available at this site they will break off twigs and use them as nesting material. In captivity they will settle with a large basket or another platform if they are in the right mood.

If available they also like to add leaves and twigs to the nest from the immediately surrounding area. These are also used as gifts that are handed from the male to the female and strengthen the pair bond even further. A clutch consists of two eggs; the chicks are precocial and even capable of flight shortly after hatching and will roost with their mother on a perch during the night.

Altogether 10 of the 50 species can currently be seen at the Weltvogelpark Walsrode, and we aim to increase this number in the future.

Remember the EAZA Research Strategy?

DEVELOPING THE RESEARCH POTENTIAL OF ZOOS AND AQUARIUMS

Vision: EAZA has the aspiration that every European zoo and aquarium will:

- make a significant contribution to ethical and highly effective research, particularly in the areas of biodiversity conservation and animal welfare;
- produce and use excellent science to increase knowledge which improves the quality of decision-making and management of collections, programmes and projects;
- engage in and foster scientific education, training and benefit sharing.

The purpose of the EAZA Research Strategy is to help further develop appropriate and excellent research and training within the European Zoo and Aquarium community and among its many partners. To this end the following goals were formulated:

Each EAZA institution will:

- Identify and pursue its own research policies and priorities.
- Participate in research.
- Develop infrastructure and equipment, and allocate sufficient staff time for research, taking into account the policies and priorities of other conservation and research agencies.
- Link research priorities and policies to the regional and institutional animal collection planning process and the relevant activities of others.
- Increase the dissemination of research plans, news and results.
- Identify research priorities and projects in which they can cooperate collectively.
- Ensure that all staff and departments understand the value of and need for research in zoos.
- Integrate research as a component of management decisions concerning all disciplines within the institution.
- Maximise the use of ZIMS and other zoo-based databases as research tools.
- Measure and evaluate research processes, progress and output.

EAZA Taxon Advisory Groups, Committees and Working Groups will:

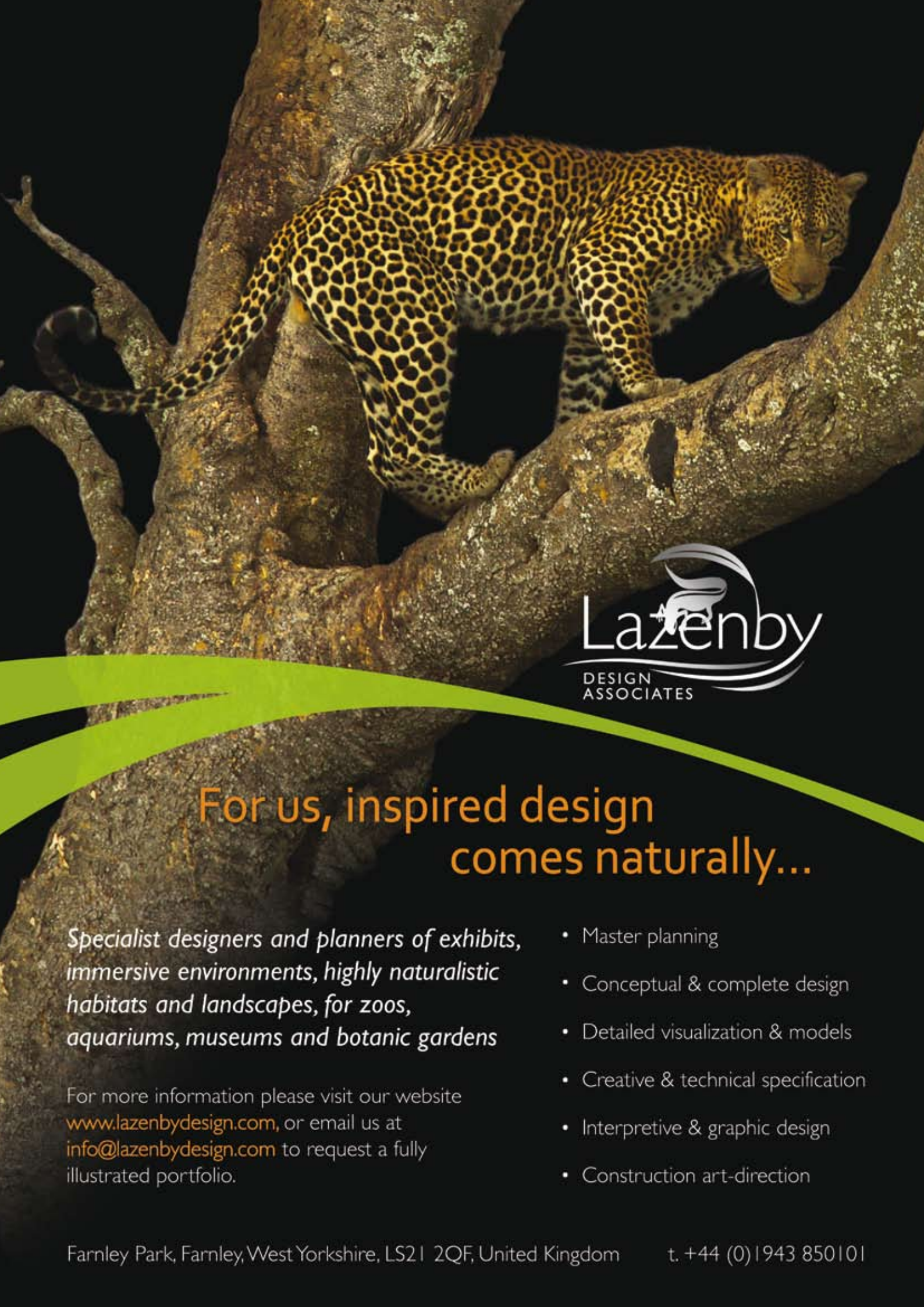
- Identify research questions specific to their taxa or area of expertise.
- Ensure that all members understand the value of and need for research on their taxa or area of expertise.
- Disseminate research plans, news and results.
- Measure, evaluate, recognise and celebrate research progress and the resultant output and success.

What EAZA Executive Office and the EAZA Research Committee will do

The role of EAZA EO and the EAZA Research Committee is to assist zoos and aquariums in establishing an infrastructure for research activities and help to guide research and set research priorities. At the same time we aim to establish and support networks of researchers in zoos, aquariums, universities and museums, and wildlife researchers. To make available the results of the joint research efforts we will provide effective, broadly accessible means of communication, discussion and collaboration.

To help EAZA institutions, TAGs, Committees and Working Groups in reaching the goals formulated in the Research Strategy we will make available on the EAZA website several relevant resources amongst which: research guidelines, protocols and priorities, annual reports, relevant websites, newsletters and research reports.

The EAZA Research Strategy is available for download from:
http://www.eaza.net/activities/Pages/Research.aspx



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