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ZOOQUARIA

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ISSUE 73

Community spirit

HOW TO INTRODUCE NEW VALUES
TO YOUR ZOO

Eating disorder

WHY LEMURS HAVE DEVELOPED
A WEIGHT PROBLEM

National treasure

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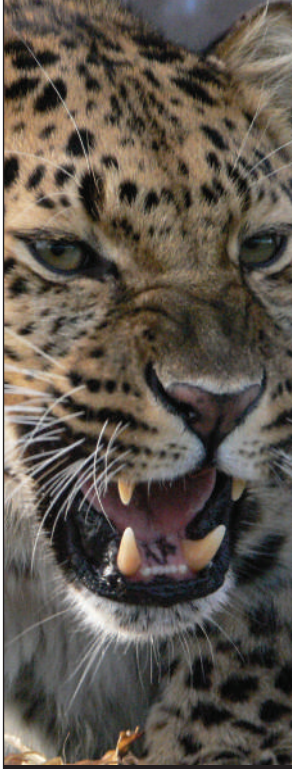
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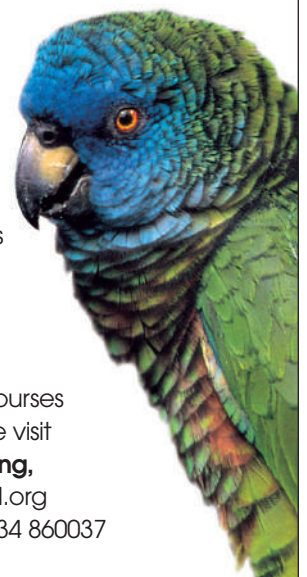
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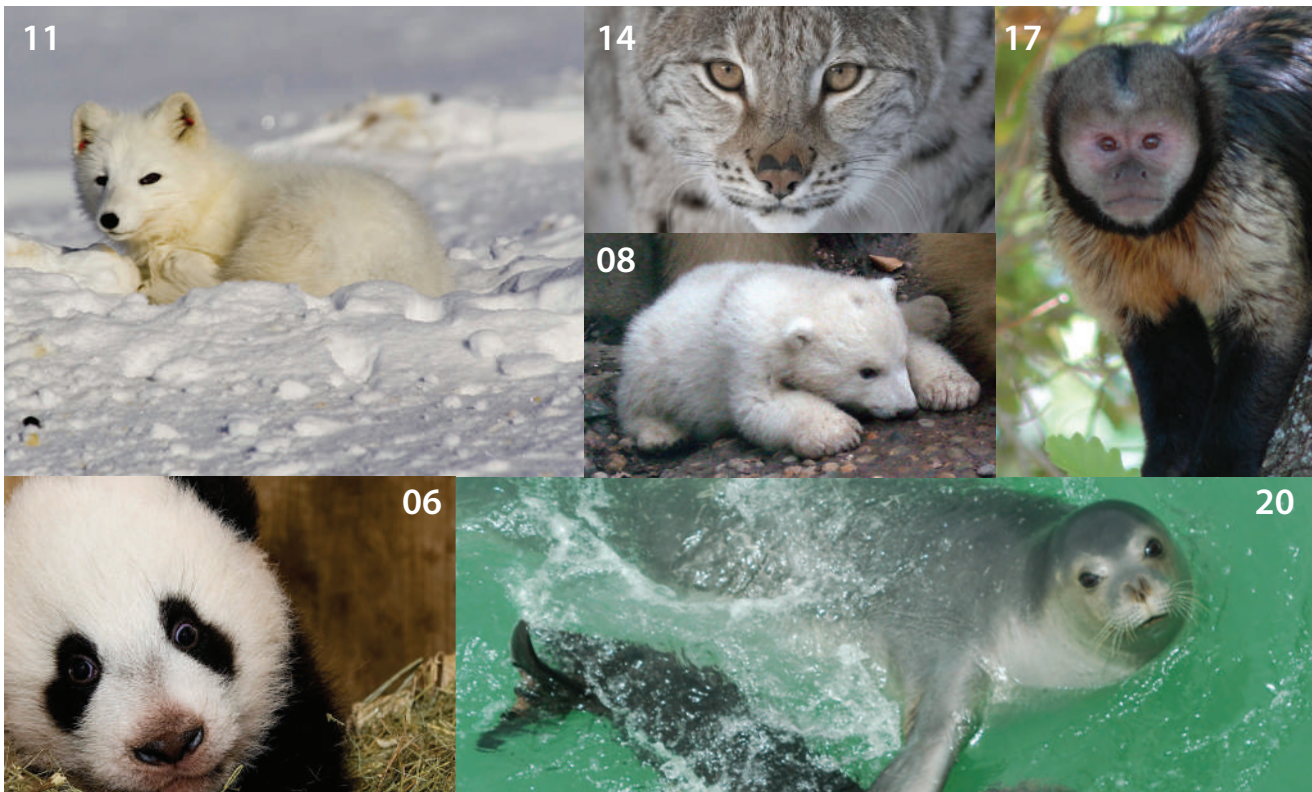
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Don't forget that this year's EAZA Annual Conference is hosted by Montpellier Zoo from 20 to 24 September. Register soon at www.eaza.net, where you'll find more details.

Zooquaria

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From the Director's Chair

So, the International Year of Biodiversity has come and gone. A celebration of biodiversity? Perhaps; but it was not a celebration of *humanity conserving biodiversity*. We collectively failed to reach the conservation targets set for 2010, in Europe and globally. The situation for wild species and places continues to decline and we are likely to see the extinction of some of the most charismatic species on our planet. We will also see the loss of lesser known species that are intrinsic components of complex ecosystems that have evolved over millions of years. To me that is a frightening and astounding thought: in my time on Earth will I bear witness to the loss of the orangutan, the tiger, the bluefin tuna? Is my generation already apathetic to such losses?

Late in 2010 it was reported that the South China tiger subspecies is probably gone forever. Its disappearance had been reported over many years; now it seems there is no hope in the wild and the animals in zoos are hybrids. This reaffirms the need to manage our populations rigorously with respect to the possibility of hybrids while we have the opportunity. But what struck me most was that other than reports in one or two newspapers and a website or two, there was little public concern or outcry. If we tolerate or are indifferent to the loss of this subspecies in our lifetime, how easy could it be for every last tiger to disappear – a slippery slope into oblivion perhaps?

But can this seeming lack of concern from our collective community be explained? As the global economic crisis continues and with some European economies on the brink, what do we, as European citizens, see as our highest priority? For the family that is struggling with rising costs, it can seem inappropriate, even perverse, for groups such as EAZA to say that conservation needs a higher priority. However, this is precisely where we – as educators, communicators and conservationists – need to work our hardest.

Our next steps as a conservation community were debated in 2010 in Nagoya where the Conference of the Parties to the Convention on Biological Diversity met to debate and reach consensus on the 2011-2020 CBD targets. Christened the Aichi Biodiversity Targets, they align under five strategic goals:

- Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society;
- Reduce the direct pressures on biodiversity and promote sustainable use;
- Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity;
- Enhance the benefits to all from biodiversity and ecosystem services;
- Enhance implementation through participatory planning, knowledge management and capacity building.

Twenty targets for 2020 underpin these strategic aims and we as zoos and aquariums have a fantastic opportunity to help deliver these for the planet. The very first target says that, 'By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve biodiversity and use it sustainably'. Who is better placed to do this for Europe than EAZA members? We have the opportunity to help our 130-140 million annual visitors to value species by giving them positive access to biodiversity, giving them joyful experiences that will last a lifetime, and presenting the most effective messaging. We should also pay close attention to Target 12, 'By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained'. Intensively managed populations, often in zoos, have for some species as much importance for conservation as those which are extensively managed in large reserves or in the wild.

The right form of messaging is important. Futerra Sustainability Communications, the consultancy that developed the IYB 2010 messaging, last year developed a thought-provoking guide to making conservation messaging as effective as possible, *Branding Biodiversity*. Instead of presenting the usual statistics that invariably say things like 'this species has declined by 90% in 20 years' they recommend a more positive approach that can be summarised as 'more love, less loss'. We should think carefully about our approach to messaging to make sure we do as well as possible at this most fundamental goal for our community.

And that brings us back to the families who wonder why they should focus on biodiversity. With the right kind of messaging leading to a new awareness of how biodiversity losses and gains will affect all of us, and most importantly future generations, I have faith that we will all want to see biodiversity conservation raised high on the agenda.

I urge you to read the Aichi Biodiversity targets (www.cbd.int/sp/sp2010p/aichi-targets) and plan how your institution will best help secure them – at the EEO we will be planning how we as an association can do the same. I also recommend that you read Futerra's *Branding Biodiversity* report (http://www.futerra.co.uk/revolution/leading_thinking) to consider how you will present messages to your public and partners.

I hope 2011 has started positively for all our members.

Dr Lesley Dickie
Executive Director, EAZA

NOTICEBOARD



GETTING TO KNOW YOU

THE NEW YEAR BROUGHT NEW FACES and new roles to the EAZA Executive Office. Myfanwy Griffith (left) joined as EAZA Training Officer and Anouchka Jacquier (right) as Executive Coordinator, both based in the Communications and Membership department. Danny de Man (centre) is, of course, well known to the EAZA community already, but as of 1 December he has taken up the position of Manager for the Collection Coordination and Conservation department.

Myfanwy joined EAZA from Askham Bryan College in the north of England where she led the Animal Management department. The department delivers further education and higher education at five college sites around Yorkshire and also has a relationship with Flamingoland (Malton). She has an MSc in Behavioural Ecology and a BSc in Zoology as well as a Postgraduate Certificate in Education, and in the past she has spent a year as a park presenter at Chester Zoo.

Anouchka replaces Sietske Veenman, who left us in December to travel and seek new challenges, particularly in the field of conservation. Anouchka comes from Sion, in the French-speaking part of Switzerland. In addition to three months spent working as an intern for EAZA last year she has completed internships in a number of zoos including Servion and Zurich. Her academic background is in biology and she holds an MSc in Biology of Parasites and Behavioural Ecology.

We wish all three of them every success with their new EAZA roles!



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Tomistoma success

IN SEPTEMBER 2010, BIOPARC FUENGIROLA was delighted to witness the hatching of new tomistoma, a large crocodile species of the peat swamp forests of Southeast Asia. Fuengirola had been the first zoo to breed this species in Europe in 2005, but since then, although mating and nesting behaviour were regular, the female developed nesting stress and failed to produce new offspring. This year saw some changes made in the reptiles' enclosure, tripling its size and giving them access to two separate pools. It clearly worked, with the new hatchlings turning the park into only the second zoo worldwide to breed the species more than once. Breeding tomistoma remains quite a challenge, and the park is constantly learning new processes that will hopefully result in even stronger management of the species, for which an ESB already exists.

The latest global population assessment of tomistoma by IUCN in 2001 estimated a total population of no more than 2,500 adults, scattered in isolated parts of Indonesia and Malaysia. It is considered extinct in Vietnam and Thailand and its habitat is seriously jeopardised by the spread of the logging and palm oil industry. The tomistoma has the potential to be a good figurehead species for the forthcoming EAZA/SSC campaign focusing on Southeast Asia.

NOTICEBOARD

NATURAL BREEDING OF GIANT PANDAS IN ZOO VIENNA

THE DATE OF 23 AUGUST IS A TRUE red-letter day for Tiergarten Schönbrunn, Zoo Vienna, write *Dr Dagmar Schratler & Dr Eveline Dunzl*. First in 2007, and now again in 2010, the zoo's female giant panda Yang Yang gave birth to twins on that date. The offspring on both occasions were conceived by natural mating with Long Hui. Twins can be born in the wild, however usually only one twin survives.

One of the most important aspects of the panda husbandry and management at Zoo Vienna is the provision of conditions for natural behaviour as much as possible. Besides climbing structures, ponds, a fog system and 95% of their feeding consisting of bamboo, natural panda husbandry includes a wooden breeding den. As the wooden den is designed to provide a secure breeding area, access by keepers is limited. On both occasions, mirroring the usual situation in the wild, one twin died.

Giant panda cubs are born with an average weight of 100g. In fact, among all mammal species the greatest weight difference between mother and cub is found in this species. The helplessness of the newborn requires considerable effort from the mother to raise it, and explains why pandas can only raise one cub. Among captive pandas an inability to

mate and raise offspring is well described, but so far Yang Yang has raised two cubs without help from the keepers. They were monitored 24 hours a day during the first weeks and Yang Yang was provided with everything she needs, but she managed the rearing process single-handed. The first direct contact the keepers had with the cub – a weight check – was at the age of about 10 weeks, when Yang Yang already left the den for a few hours at a time to feed on bamboo.

Fu Long, Yang Yang's first cub, was transferred back to China in 2009 and Fu Hu, the second cub will follow him according to the agreement with China in about two years. The total number of pandas in captivity already exceeds more than 300, a figure which is believed to be the population size at which the captive population can survive even if the wild population disappears. The wild population, consisting of 1,600 – 3,000 individuals, is, because of habitat loss, fragmented in small isolated sub-populations. The public awareness brought about by the pandas at Tiergarten Schönbrunn contributes to the panda conservation, the conservation of their habitat and therefore the conservation of many species living in that habitat.

PLANT CONSERVATION COURSE

SINCE 2007 THE ROYAL BOTANIC Garden Edinburgh (RBGE) has been delivering a unique practical course that teaches the essential skills needed for plant conservation work, write *Laura Cohen, Leigh Morris and Eddie Mole*. The Certificate in Practical Horticulture (CPH) is an eight-day practical training course covering the fundamental skills of horticulture – and now, the scheme is broadening out. Working alongside Bristol Zoo Gardens (BZG), RBGE is linking the learning in with the zoo community. This year, we'll be running a CPH 'Train the Trainers' course at Bristol Zoo from 18-31 July. Once successfully trained, these trainers will be able to deliver CPH themselves for their own organisations.

This represents an exciting and important step forward in horticultural training for zoos. There are benefits for staff, plus for the zoos themselves and wider conservation. The course will increase the skills of your horticultural staff by setting high minimum standards, and opens up possibilities for zoo horticulturists to work on conservation projects at home and abroad.

It has already proved a valuable income stream for those delivering it – it means your zoo is better placed to apply for funding grants and awards, raising your profile and helping you tackle plant conservation issues at home and abroad.

Laura Cohen is the Certificate in Practical Horticulture Co-ordinator at RBGE, Leigh Morris is Head of Education at RBGE and Eddie Mole is the Head of Horticulture at BZG and Chair of EAZA. You can find out more about CPH and download the course handbook from www.rbge.ac.uk/certph, or contact Laura Cohen at l.cohen@rbge.ac.uk. For more information on the Train the Trainers course at BZG please contact Eddie Mole (emole@bristolzoo.org.uk).

FU HU AT TIERGARTEN
SCHÖNBRUNN



ALPZA CONGRESS COMESTO CHILE

EAZA HAS A MEMORANDUM OF UNDERSTANDING with ALPZA, which was renewed at the Verona conference, and it therefore gives us pleasure to report on the latest of ALPZA's own annual conferences, as described here by Andrea Caiozzi, Executive Director, and Mauricio Fabry, President.

Held from 15 to 19 November 2010 at the National Zoo of the Metropolitan Park of Chile, *they write*, the 17th Congress of the Latin American Association of Zoos and Aquariums (ALPZA). The main theme of the Congress was 'Reconnecting human beings with nature', and what better place for a beautiful opening ceremony than the Pablo Neruda Nations and Arts Auditorium, located at the top and heart of the Metropolitan Park, a place with a panoramic view of Santiago city and the impressive Andes Mountains.

The participants were able to attend a variety of plenary talks given by international authorities, including Gerald Dick, Executive Director of WAZA, Kris Vehrs, Executive Director of AZA, Manfred Niekisch, Frankfurt Zoo Director, and Eric Bairrão Ruivo, Science and Conservation Director at the ZooParc de Beauval. The event welcomed over 180 attendees from 20 countries, and 40 speakers of international standing. During the conference, four mini-courses were offered to attendees: animal conservation, animal behaviour and welfare, environmental education, and bird husbandry. In addition, the congress held vital workshops on animal transport, aquariums, animal escapes, euthanasia, animal reintroductions, animal exhibits, zoological management, and much more. In addition, representatives from various zoological institutions of the Association presented more than 30 scientific studies in posters or oral presentations.



STRATEGIC MARKETING IN ACTION

THERE ARE MULTIPLE CHALLENGES facing modern zoos and aquariums as they simultaneously strive for setting and maintaining high standards and sustainable practices in education, conservation, research and recreation. Having an effective marketing strategy is crucial for communicating the value that zoos and aquariums serve in these multiple roles. To help achieve this goal, representatives of the global zoo and aquarium community will gather for the 7th International Zoo and Aquarium Marketing Conference, taking place in Canada in June, to share case studies and best practices on a range of topics including social marketing and how to turn bad news into good news.

EAZA is endorsing this WAZA-

organised event and will programme one of the conference sessions, asking whether the conflict between marketing and education is real or imagined?

'We encourage management, strategic planning and marketing people to share best practices by answering the call for papers and attending the conference to enlighten the discussions and create value for each participant,' says Joanne Lalumière, Executive Director of the host institution Granby Zoo. 'All the team at Granby Zoo is waiting to greet you in great numbers and to provide, under the auspices of WAZA, a successful conference and a memorable experience in Granby and its region. Southern Quebec is also a great place

for vacations for those who wish to stay longer.'

The conference is jointly organised by WAZA and Granby Zoo and runs from 13 to 16 June, 2011. A call for papers has been issued with a deadline of 28 February. More information from www.waza.org.

CORRECTION *In issue 72 of Zooquaria, in our article on Leipzig Zoo's venomous reptile collection, we published an image of a non-venomous species, and omitted to caption it accordingly. A venomous species would have been a more appropriate choice, and we would like to make clear that the image was chosen by the editor and not the author, Fabian Schmidt, and apologise for any confusion that may have arisen.*

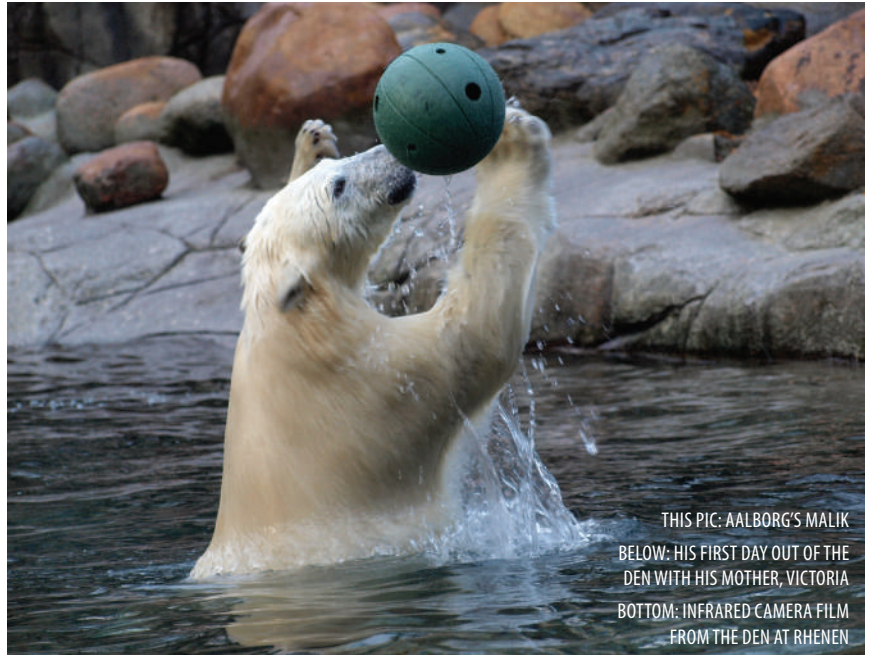
NOTICEBOARD

BEAR FACTS

THERE HAS BEEN AN EXTRAORDINARY number of polar bear births at EAZA zoos in recent times. In early December 2010, Nürnberg Zoo's bear Vera gave birth to two healthy cubs, while Aalborg's youngster, Milak, has been a favourite with visitors for some time. Rotterdam and others have also had recent successes – and yet not all cubs survive. As Artis Zoo's János Szánthó, the EEP Coordinator for polar bears, explains here, the mortality rate needs to be improved if the EEP population is to build.

One important role of European zoos is to educate visitors, *he writes*. With many species, but particularly with polar bears, we aim to provide a greater awareness of the effects of climate change and global warming which has direct consequences for the future of these important and wonderful top predators and their habitat. The polar bear is designated as Vulnerable by the IUCN and zoos have a key role in its future conservation. The value of zoo populations and their educational and engagement ability is recognised by conservationists who declare that in the future zoos and conservationist need to work together in the fight to save this species from extinction.

There is also the important need for greater collaboration between different regional associations to provide a standardised approach for the future of polar bear *ex situ* populations around the world. A major task of the EEP (established in 2007) is to develop a self-sustaining captive population and to provide a higher level of focus for the species than currently exists. Although the EEP shows low breeding results, Europe remains the most successful breeding region in the world, as well as housing the most significant population of animals.



THIS PIC: AALBORG'S MALIK
BELOW: HIS FIRST DAY OUT OF THE DEN WITH HIS MOTHER, VICTORIA
BOTTOM: INFRARED CAMERA FILM FROM THE DEN AT RHENEN

Over many years the EEP population showed a stable level of the number of polar bears, but we have recently noticed a small decline. This is due in part to low infant survival and that specimens imported during the 1970's are now past viable reproductive age. The following demographical requirements will therefore guide our breeding goals for the next 10-year period of the EEP:

- * Increase the growth rate of the population from the current 1% loss each year to a 1% gain each year.

- * Increase the proportion of individual bears that are involved in breeding from 27% to 33%.

- * Increase the carrying capacity from 134 to 142 specimens.

To achieve these targets we need to see 16 cubs born this year. This number caters for the likelihood that a number will be stillborn, die at birth or before becoming adults. Assuming the average litter size is 1.5 cubs, and that 25% of the breeding pairs actually produce cubs, then we will need to set up 43 breeding pairs to produce the 16 cubs.



JENS SIGSGAARD, AALBORG ZOO



Population paradigm shift

INTENSIVELY MANAGED PROGRAMMES HAVE BEEN UNDER REVIEW

Lesley Dickie, Executive Director, EAZA



At the EAZA Annual Conference in Copenhagen in 2009 Kristen Leus presented work carried out by the EAZA Executive Office and students of the Van Hall Institute. This study looked at the sustainability of our managed programmes. Although there were some positives there was also concern raised that the programmes were not performing to their best ability. This coincided with additional studies by colleagues at AZA and ZAA examining their managed programmes and similar results were found. So, what to do? It was clear that we needed to identify what was working well, but also, and more importantly, identify what was not working and to develop new approaches and innovative technologies to improve the situation.

CBSG had previously convened working groups on the topic of sustainability of zoo populations at their 2008, 2009 and 2010 annual conferences, and they took on the task of arranging a dedicated meeting to bring together experts from many regional zoo associations (EAZA, AZA, ZAA, JAZA, SEAZA, SAZARC, AMACZOOA and ALPZA), WAZA, the Amphibian Ark, Botanic Gardens Conservation International and ISIS. The meeting was hosted by San Diego Zoo from 6-9 December 2010 with EAZA being represented by myself, Danny de Man and William van Lint. Our colleague Kristen Leus was also

in attendance, but on this occasion wearing her CBSG staff cap.

What followed was an intense but stimulating discussion between all the participants. Early on in the meeting terminology was discussed; this followed on from the presentations given by Evan Blumer (then of The Wilds) at previous CBSG meetings, where he suggested along with others, that the words *ex situ* and *in situ* were perhaps not helping to fully examine the variety of conservation techniques that could be explored. Instead he highlighted the terms 'intensively managed populations' and 'extensively managed populations'. It was noted that intensively managed populations or IMPs not only were found in zoos and other captive breeding centres but in the wild where numbers of some species are under extreme threat and only survive due to significant human intervention. Thereafter we concentrated on thinking about the IMPs maintained in our collective institutions.

PURSUING THE MISSION

A draft vision and missions for IMPs had been developed at the CBSG annual meeting in Cologne in October and these were brought forward to this gathering to direct our efforts. The group of more than 40 participants broke into various working groups including species

assessment and prioritisation, different types of management programmes and promoting a paradigm shift in transforming zoos into holistic conservation centres, amongst others. The results of the whole meeting are being compiled with all working groups preparing reports and action plans and a final over-arching report of the entire meeting will be available soon. A slideshow of results will also be produced to enable the results and recommendations to be disseminated further. We will bring the results to EAZA members as soon as possible and would welcome your input in further working to make our zoo populations more sustainable and to use them as productively as possible; for breed and release where appropriate; conservation education; conservation fundraising; conservation research; and to inspire our visitors to live more sustainably in their daily lives.

LOOKING FORWARD

The meeting also gave an opportunity for EAZA's Collection Coordination and Conservation team to meet with colleagues in other regions, and discuss the similar challenges that are found. In particular Danny and William had extensive discussions with Sarah Long and colleagues of the Population Management Centre of AZA. This productive dialogue will continue into the future, as will my fruitful discussions with Paul Boyle, Senior Vice President, Conservation of AZA on how AZA and EAZA can work productively together on many issues of common interest.

Of course, this meeting also gave the opportunity to see the San Diego Zoo. This was a first chance for me personally to see the zoo and I was suitably impressed with the extensive grounds, range of species and exemplary welfare standards – and I had never seen a moving outdoor walkway in a zoo!

Thanks go to CBSG for bringing this meeting together and the typically brilliant facilitation from Kristen Leus, Kathy Traylor-Holzer and Bob Lacey. Columbus Zoo helped financially support the meeting and San Diego were excellent hosts, with our thanks going to Bob Wiese and his team at the zoo.

Educational snowball effect

THE APE CAMPAIGN CAN DEVELOP A TRULY RAPID MOMENTUM THROUGH THE CLASSROOM

Constanze Melicharek, Education Officer, Apenheul Primate Park



STUDENT AT BOEMERANG SCHOOL IN APELDOORN FINDING OUT MORE ABOUT CHIMPANZEES

It's a familiar pattern. Each year, in the first few months after the launch of a new EAZA conservation campaign, the main emphasis lies on brainstorming, planning and preparation. Yet we still have some weeks before Ape Week kicks off at Easter, so there's still enough time as the chilly months fade away to think about how we as a zoo community can develop a real snowball effect in the campaign.

One thing is clear – just a few months after the launch of the campaign in Verona, we can already be very proud of the number of participants that have already signed up and their fundraising pledges. But to reach the ambitious fundraising goal of €1 million, we'll have to find partners beyond the zoos themselves. Schools, scouting clubs and other types of youth groups could all be very valuable partners in The 3333 Challenge!

The campaign planning team is already working hard to provide zoos and other participants with educational material about apes. From audio bites to film fragments, from pictures to colour-in sheets, from help in how to face-paint to serious facts in info-sheets... everything can be used

in informal or formal education in the zoos themselves. And more material, especially designed to be used without a zoo educator in the background, is on its way. For example, in January we made a new Powerpoint presentation which is available for use by everybody who wants to teach 6-8 year olds about apes. A version for older pupils is to follow. These presentations can be used by teachers and students alike.

START THEM YOUNG

Primary schools have busy schedules, but most still have the freedom to chose a theme to focus on for a term. Before spring, a more multidisciplinary package of ape-ideas for in-class projects will be up on the website. It will ensure that primary schools can more easily integrate the Ape Campaign into their teaching schedule, as it will focus on several ape-related topics, in addition to 'just biology'. For primary schoolchildren, it is a big and fascinating step to realise that children in other parts of the world, such as where apes are found, live a very different life from them, and we can tailor part of their learning to this theme. As all the projects have quite a clear human-orientated wing, it is easier to put

the Ape Campaign into the bigger picture, and provide lessons on global citizenship.

In fact, using the internet to connect schools from *in situ* sites with European schools can strengthen that effect. The areas around our preselected projects tend to have poor internet access, but this is likely to change in just a few years' time – we're already seeing signs of this, as the zoos that embrace the Cao Vit gibbon project, for example, could offer schools a 'partner school' in Vietnam relatively soon.

BROADENING OUT

For now, it is important to provide as many people as possible with ready-to-use material, not just the zoo educators. In current teaching circles, it is now important to involve the children more actively than before. So if a teacher suggests apes as a topic, the pupils can then start working on the ape-related issues that particularly interest them. We can help them form their own questions to follow up, work out their own methods of finding answers, and encourage group work for the older pupils that can be pursued across the internet via social media. And then, of course, there are also the trips to the zoos themselves to actually meet the apes – all these methods will together form a package that the pupils will not only remember for a long time, but hopefully also get them in action to face The 3333 Challenge.

The first school, the Boemerang in Apeldoorn (Netherlands) is already hard at work! The great enthusiasm of the pupils there shows that it is feasible to motivate schools to participate. So please try to get momentum for the apes going among the teachers of schools your zoo is in contact with. Of course 300 European zoos have a great educational potential, and a fantastic reach. But the more than 100,000 schools within the EAZA region that we can reach out to represent a potential for awareness and fundraising we simply can not neglect.

Capping off the carnivores

THE CARNIVORE CAMPAIGN DRAWS TO A CLOSE WITH MANY GREAT CONSEQUENCES EMERGING FROM ITS TWO YEARS OF SUCCESSFUL FUNDRAISING

Ann-Katrine Garn, Campaign Coordinator and Angela Glatston, Chair, EAZA European Carnivore Campaign

The EAZA European Carnivore Campaign has been very successful both in terms of numbers of participants and in the spread of that participation through Europe. In total 173 institutions representing 30 countries participated at some point during the two years that it ran. Many zoos have been very creative in their campaign activities and showed that you can create awareness in many different ways; some chose to repeat the successfully teddy bear picnic event while others organised drawing competitions. Some even got visitors to 'think' like a carnivore by providing different carnivore props and games, while others presented story-telling events and plays where carnivores were the centre of attention. You can see many of the results at www.carnivorecampaign.eu by clicking on the 'Activities' section.

At the campaign's official finale during EAZA's Annual Conference in Verona, two special awards were handed out. Parc Zoologique de Lille received an Awareness Award in recognition of their many creative activities, despite the fact that their collection doesn't include any of the relevant European carnivores. Meanwhile, Parc Zoologique d'Amneville received a Fundraising Award as they raised the impressive total of €58,960.

WINNING WAYS

Further fundraising awards were issued during the second year of the campaign. Fifty fundraising certificates have been issued to campaign participants including three platinum certificates (for raising €20,000 or more). At the time of writing 61 EAZA members have fundraised the impressive total of €381,450. This together with support from other sources gives us a grand total to date of close to €400,000!! And funds in support of the campaign continue to come in to the EAZA account so hopefully that total will continue to grow over the next few months. Thank you to all campaign participants for their creativity and fundraising and for



supporting Europe's carnivores!

The funds you have raised are already being put to good use. The campaign committee distributed funding to eight of the 10 first round projects selected back in 2009 during the first year of the campaign. By the end of last year we were able to fund another of these first round projects, the reintroduction of the European mink onto Saaremaa Island in the Baltic Sea, as well as two of the projects selected for the extended campaign. These were one project aimed at preventing the use of poison against the black vultures and imperial eagles in the Iberian peninsula, and another dedicated to promoting the survival of the Egyptian vulture in Bulgaria. We hope we will soon be able to offer support to more of the projects on our list including the development of the anti-poison database.

On the subject of poison, we should mention that the anti-poison petition is closed. If you have collected signatures for the petition but haven't yet sent the signatures, please do so. Before posting the signed petitions to the campaign coordinator (Ann-Katrine Garn c/o Copenhagen Zoo) please count the total number of signatures and email the total to her at akg@zoo.dk.

All the projects which received

support early in 2010 have provided mid-year updates on their activities which are available on the campaign website, and hopefully the end of year reports will be available there soon as well. In the meantime it is good to know that 25 arctic fox litters were born in the 2010 season, and that their survival has been helped by our campaign funding. Additionally, the research we funded has demonstrated that wolverines are more scavengers than predators where reindeer are concerned and that lemmings are high on the wolverine's preferred menu, both facts that might improve this carnivore's image with local people. Other research has shown that brown bears in Albania are more likely to attack beehives than livestock – again, useful information for mitigating human-bear conflict in the future. It is equally good to know that the source of the chronic kidney disease in the Iberian lynx has now been solved, although rather depressing to realise that this problem was caused by an incorrectly balanced mineral supplement in the first place.

Overall I think we can all be very proud and pleased with the achievements of the projects, made possible by our support.



The community spirit

ODENSE ZOO HAS REPLACED RULES AND GUIDELINES WITH VALUES, WHICH SERVE AS THE BASIS OF EVERYONE'S WORK AND APPLY ACROSS ALL DEPARTMENTS AND WORK AREAS. THE RESULT? A BOOST TO STAFF MOTIVATION AND JOB SATISFACTION, AND A BETTER EXPERIENCE FOR ZOO VISITORS

Henrik Lehmann Andersen, Director of Odense Zoo

When I arrived at Odense Zoo eight years ago, I encountered a top-down, hierarchical, yet growing enterprise. Although everything seemed to be working smoothly on the surface, something was missing: contact and communication among the employees. Everyone was minding their own business: animal keepers and zoologists were focused entirely on the animals; information employees were busy with texts and training; and marketing employees were completely absorbed with websites, target groups and ads.

Perhaps this situation is still true at many of Europe's zoological gardens. But in my view, tunnel-vision enthusiasm for one's own area of expertise needs to be allowed to blossom into enthusiasm with a holistic, overall perspective. From the outset, my mission has been to transform the organisation from everyone minding his or her own business to everyone minding our zoo.

FROM OSTRICH TO TORTOISE

Today, the management style practised at Odense Zoo is based on values. These are easy to understand and can be put into practice in natural, engaging and quantifiable ways. You might say we have progressed from head-in-the-sand ostrich tactics to a concept I call values-based management, or the tortoise perspective, meaning that whatever you want to put into motion should be designed to last forever and work right now.

We set up a staff committee with representatives from every department of the zoo, and they eventually came up with six values: Respect; Enthusiasm is Infectious; Creativity; Competency;

Responsibility; and Dedication. We used animal drawings to illustrate the six values, we drew up action plans and explanations and we incorporated them into a context with our vision, mission and strategies.

But values are vague, and ultimately empty, if we fail to put them into operation. It is one thing to publish one's values in a pamphlet, write them down in employee handbooks and publish them on the internet, but another to put them into practice so they make sense on a daily basis to everyone, regardless of where they work at our attraction.

VIABLE VALUES

Values do not become rooted in an organisation by themselves, even when formulated and visualised by employees. It is essential to plan specific activities relating to the values and then incorporate them into a fixed framework. Each day all year round I send two positive value-related text messages to two employees. An example of such an employee is someone who has performed an assignment with exceptional enthusiasm, who has praised or shown respect to a colleague, or who otherwise excels in relation to one of our values.

Values are also a fixed item on the agenda of our weekly and monthly meetings. In our Tuesday meetings, we assess our values using a special 'values barometer'. How high does the value 'creativity' rate today; how are 'respect' and 'responsibility' doing, and how high should we rate our 'competencies'? Each employee rates the value in question on a scale of 1 to 10, giving us an up-to-the-minute account of how the six values are weighted. At the next meeting, we compare and discuss the fluctuations. We actively use Facebook and have developed an 'instrument panel' we post in our common lunchroom. It has meters showing attendance figures and lamps which shine to indicate our current budget status and key figures. These are also updated on a daily basis to include news items large and small so that everyone working at the zoo can keep up with what's going on.

We conduct a 'value week' three times a year. Each week is based on one of our six values, and various activities are associated with this value. As part

of the 'respect' value, we schedule time to visit one another's workplaces. The aim of this is for our employees to become better acquainted with each other, thereby making everyone more respectful of the effort each employee contributes towards the whole.

CREATIVE WISH LISTS

We bring our values into play all the time. Recently, the staff committee decided to focus on the 'creativity' value just before Christmas. Instead of receiving the usual Christmas basket from Odense Zoo, the Christmas present was converted into a creativity value. Each employee drew the name of a colleague, to whom the employee – without revealing this to the recipient – would give a gift costing an agreed sum of money (paid for by the zoo). The purpose of this assignment was to get each employee to find creative ways of expressing what they wanted for Christmas. And the methods they used were inventive, to put it mildly. Some posted slips on a bulletin board, others created wish lists on Facebook, wrote small notes, e-mails or text messages. The winner of the competition had a letter to the editor printed in the local newspaper, and was even on the radio nationwide talking about what she would like as a Christmas present

Obviously, our values are also an integral part of our annual job appraisal interview and, in true Academy Awards style, we give out an 'Employee of the Year' award for each of the six values. We literally roll out the red carpet with lots of razzamatazz, and the reasons for each award are solemnly read out loud at the ceremony.

Odense Zoo's new job-satisfaction policy from 2010 also grew out of our value-related efforts. It includes a number of social and health-related initiatives to make it more stimulating and healthier to work at the zoo. We carry out health check-ups and have a running coach and dietician associated with the programme. Another example is our Zoo Marathon, which involves paying a visit to an employee's home after work. The visit starts out with a cycle trip, a run or a walk and ends with everyone eating together afterwards.

We carried out five Zoo Marathons in

the summer of 2010, with some thirty participants at each event.

Not everyone was enthused about this concept at first. The change to values-based management was a completely different management style from what they were accustomed to. Some felt that the values-based activities were artificial and a little naïve. As values became more visible and were embraced by more and more employees, these attitudes have changed, however. And this trend has had a cumulative effect. Although it was originally just a process I put into motion, our employees have been responsible for embracing it and actively participating in this process.

The positive impact of this on our workplace is documented by employee and customer surveys, and is also manifested in the rising number of job applications received at Odense Zoo. Regardless of which position needs to be filled, we receive between 200 and 400 applications every time, and in 2009 we were even named the best traineeship venue in Denmark. Overall, this is due to Odense Zoo's good image and because our employees are satisfied with their jobs, happy, get involved and shoulder their share of the responsibility for the well-being of one another and the animals. And all of this has a big rub-off effect on our visitors when they leave Odense Zoo a little wiser, and a little happier, than when they arrived.

IT NEVER STOPS

The results of our values-based activities have opened up the eyes of others to what a zoo can be. This has paved the way for good relationships with our sponsors and other stakeholders and helps to make our work easier whenever we apply for co-funding for our major investment projects.

Our biggest challenge is to keep our values alive and live by them – every day, all year round. A persevering effort involving day-to-day activities throughout our attraction makes the difference. Because if our values do not correspond with our actions, everything starts to fall apart. A zoo is a good starting point for efforts like these as everyone loves their work – we just have to keep refuelling and fanning the flames of their enthusiasm at regular intervals.



Celebrating the International Year of Forests 2011

ARKIVE, THE ULTIMATE MULTIMEDIA GUIDE TO THE WORLD'S ENDANGERED SPECIES, GIVES ZOOQUARIA ITS VIEW OF THE ROLE OF FORESTS FOR PEOPLE AND BIODIVERSITY

Helen Shrimpton, Communications & Marketing Manager, Wildscreen

Declared by the United Nations as the 'International Year of Forests', 2011 is dedicated to raising awareness on sustainable management, development and conservation of all types of forest around the world. The idea is to benefit both current and future generations, and so the theme has been titled 'Forests for People', in celebration of the central role that people play in sustaining the forests that are so vital to their interests and survival.

The importance of the world's forests is often underestimated, yet their contribution to ecological processes, alongside human economic and social well-being, is hugely significant. More than 1.6 billion people worldwide depend on forests for their livelihoods in some way, with forest industries turning over US\$200 billion each year.

Of course, it is not just people who depend on forests – they are also home to nearly 80% of the world's terrestrial biodiversity. Up to half of all known species may reside in tropical forests, as well as many yet to be discovered.

Europe's forests are home to the largest number of vertebrates compared to any other ecosystem on the continent. They are also the last stronghold for some of the most charismatic European carnivores, including wolves, bears and lynx; as well as many more species of invertebrates, birds, reptiles and amphibians.

FORESTS AND SOCIETY

Covering approximately 30% of the world's total land area, forests provide an immense resource for society and have a wide ranging economic impact.

Forest industries are of huge importance to the global economy, and are central to the growth of many developing countries. Some 30% of the world's forests – 1.2 billion hectares – are used primarily for the production of wood, including harvested timber, deadwood, bark, cork, fuel wood and charcoal, and non-wood products such as latex, honey, rubber, gum, nuts, berries and fruits. In addition, around

1 billion people depend on medicines derived from forest plants.

Around 330 million hectares (that's 8% of the world's forests) are designated for the conservation of soil and water, regulating groundwater level, reducing the risk of severe flooding and preventing erosion. They are important in the control of avalanches, desertification and coastal protection, and play a major role in the storage, purification and the release of water, helping to maintain water quality and soil fertility. Forests also remove CO² from the atmosphere and it is estimated that the world's forests store as much as 650 billion tonnes of carbon annually.

MAJOR THREATS TO FOREST ECOSYSTEMS

Around the world, forest ecosystems provide critically important habitats for a great diversity of species, as well as supporting more threatened species than any other ecosystem, especially in tropical regions.

The conversion of forests for



CLOCKWISE FROM TOP LEFT: **SESSILE OAK** THE MAJESTIC SESSILE OAK, FOUND IN ANCIENT WOODLANDS THROUGHOUT MOST OF WESTERN EUROPE, SUPPORTS UNIQUE COMMUNITIES OF PLANTS, ANIMALS AND FUNGI.

CRITICALLY ENDANGERED NORTHERN MURIQUI IN ATLANTIC FOREST HABITAT (SOUTH AMERICA) THE CRITICALLY ENDANGERED NORTHERN MURIQUI IS AN AGILE, ARBOREAL MONKEY THAT INHABITS THE ATLANTIC FORESTS OF SOUTH AMERICA.

VULNERABLE BRAZIL-NUT TREE (BRAZIL) THE BRAZIL-NUT TREE IS CONSIDERED TO BE ONE OF THE MOST ECONOMICALLY VALUABLE PLANTS OF THE AMAZON.

ENDANGERED BORNEAN ORANG-UTAN (BORNEO) 80 PERCENT OF ORANG-UTAN HABITAT HAS BEEN LOST TO ILLEGAL LOGGING, GOLD MINING AND CONVERSION TO PERMANENT AGRICULTURE, IN PARTICULAR, PALM OIL PLANTATIONS.

agricultural use and plantations, and the degradation through logging, fires, pollution, climate change, pests, diseases and invasive species, all have a huge impact on the world's forest biodiversity. Around 20,000 hectares of forest are lost every day through deforestation – an area close to 27,000 football pitches – with the highest rates found in tropical developing regions, putting thousands of unique species increasingly at risk.

EDUCATION AND CONSERVATION

Many of the world's remaining forests are considered to be 'biodiversity hotspots', representing some of the most remarkable and threatened places on earth. The forested regions of South America for example are hugely diverse. The Atlantic Forest, of which less than 10% remains, is home to 20,000 plant species and 950 bird species, with over 20 Critically Endangered vertebrates found in the area alone. The Tropical Andes are even richer, containing almost a sixth of all known plant species in a comparatively tiny area, with more amphibian species than anywhere else on the planet.

In addition, of course, the great apes are forest-dwellers, and EAZA's Ape Campaign, running alongside the UN's International Year of Forests, is well-timed to take advantage of this global focus (for an update, please turn to page 10).

Even with such astonishing numbers of species, and the huge amount under threat in these extraordinary forests, there is often too little emphasis placed on the importance of conserving whole ecosystems.

Many EAZA members support *in situ* conservation projects which have an encompassing approach. The involvement of zoos and conservation organisations in funding, education and research of such projects, plays an essential role in ensuring entire ecosystems, including the species and ecological processes they support, will endure for future generations.

With so many people and so much of the world's biodiversity relying on forests, raising awareness of sustainability can only be good news all round.



ARKive

Using the power of wildlife imagery as a conservation tool ARKive, a not-for profit initiative of UK-based NGO Wildscreen, is leading the 'virtual' conservation effort, creating the ultimate multimedia guide to the world's threatened species using the very best wildlife media. ARKive is freely available to all for educational and conservation purposes, via its award-winning website www.arkive.org.

To date, ARKive has published thousands of films and photographs that were previously inaccessible to the public, creating multimedia profiles for more than 5,600 forest-dwelling species. By revealing what species look like, how they behave and what makes them special, ARKive aims to shine the spotlight on the many thousands of endangered forest plants and animals, thereby raising their public profile and, ultimately, helping to ensure their conservation and the protection of the forest ecosystems they inhabit.

Capuchin monkeys in European zoos: what are the priorities?

CAPUCHIN MONKEYS CAN LIVE FOR UP TO 45 YEARS AND HAVE HIGH REPRODUCTION RATES. AS AVAILABLE SPACE IN ZOOS IS RESTRICTED, IT IS CLEAR THAT THIS IS THE TIME TO MAKE RESPONSIBLE DECISIONS ON THEIR FUTURE

Jan Vermeer, Director, ZooPark Metelen, Germany in cooperation with Jean-Marc Lernould, Yellow-breasted capuchin EEP Coordinator

Capuchin monkeys (genus *Cebus*) are very popular in zoos. According to ISIS there are some 775 individuals from six different species living in the European ISIS member zoos. The genus has a huge distribution in Central and South America, but due to their great phenotypic variety their taxonomy is still disputed. At the moment it is generally thought that there are four non-tufted species and at least six tufted species, some with several subspecies.

Of the 775 capuchins in European zoos reported in ISIS, only 68 are identified as the non-tufted species, *C. capucinus*, which is managed at ESB level. The origins and phenotypes of the animals suggest that there are several subspecies present (my personal observation) and we can conclude that there is no viable pure population in European zoos. The situation is not much better for the members of the *C. apella* group, of which the huge number of 670 are reported in ISIS. Based on the ISIS data and personal observations, it is clear that the majority of these animals are subspecific or specific hybrids.

The species with the largest pure population in Europe is the yellow-breasted capuchin (*C. xanthosternos*), (128 animals). This species is managed in an EEP within the framework of an international (Brazilian and European) breeding programme that is part of a global conservation programme for the species, under the authority of the Brazilian Government.

It is astonishing to conclude that only 16% of the 775 capuchins in European zoos are of direct conservational value, the yellow-breasted capuchin being listed on the IUCN Red List as Critically Endangered. All other individuals that we keep in Europe, including the pure *C. apella apella*, are listed by the IUCN as Least Concern.



The breeding programme for the yellow-breasted capuchin was initiated in 1980 at the Rio de Janeiro Primate Center (CPRJ). The programme was expanded to Europe in 1990 when Mulhouse Zoo imported the first animals from the CPRJ. The species has been managed since 1992 and the EEP was established in 2000. Until now, the European population was based on a restricted number of founder animals. Breeding results have been very good and the European population grew to 128 individuals. For the genetic viability of the population several additional animals of unrelated bloodlines are expected to arrive shortly from Brazilian zoos.

The yellow-breasted capuchin EEP participants are together one of the main supporters of the *in situ* conservation programme since 2002.

With CEPA (Conservation des Espèces et des Populations Animales), ZGAP (Zoologische Gesellschaft für Arten- und Populationsschutz) and two zoos not belonging to this EEP, they contributed a total of more than €160,000 from 2002 to 2010. The programme is conducting surveys of the remaining feral populations of yellow-breasted capuchins and studies the ecology and behaviour of the species. Despite the positive outcome of the surveys, the conservation status of the species is critical (high fragmentation of habitat, isolation of small populations, high hunting pressure) and more protected areas are necessary.

MAKE THE RIGHT DECISIONS NOW!

Because of the reproductive biology of capuchin monkeys, our present reproductive strategy affects the next 30 to 40 years. We can expect the population of yellow-breasted capuchins to grow considerably in the future, so more space will be necessary. Zoos which currently keep a group of non-endangered capuchins should consider stopping or limiting breeding, in order to avoid space-competition with yellow-breasted capuchins. Other zoos can anticipate to this growing demand for space by including yellow-breasted capuchins in their collection planning.

The Yellow-breasted capuchin EEP needs more space for breeding groups, but also for some bachelor groups. The sex ratio of the population is highly skewed towards males, due to the birth of many male infants. Fortunately capuchin monkeys can live very well in bachelor groups, and some zoos are requested to support the EEP by taking an all-male group.

Keeping yellow-breasted capuchins offers great advantages for the participating zoos. These monkeys are very attractive, due to their high activity rates and expressive faces. The species offers also great educational opportunities, as there is a clear link between the captive population and *in situ* conservation activities. The species deserves the support of European zoos!

For more information about supporting or participating in the Yellow-breasted capuchin EEP, please contact its coordinator Jean-Marc Lernould (jean-marc.lernould@9online.fr).

Interpreting the invertebrates

THE RENOVATION OF PLOCK ZOO'S INSECT HOUSE PROVIDED THE PERFECT OPPORTUNITY TO INTRODUCE NEW SPECIES INTO THE MIX

Aleksander Niwelinski, Director, Plock Zoo, Poland

Following a two year major overhaul of the Terrarium and Aquarium Pavilion in the Plock Zoo, it was time to prepare some new exhibits to go inside it. We had improved the configuration and environmental enrichment in the terrariums for amphibians and reptiles, but the overall arrangement had remained unchanged. The renovated interior of the pavilion, however, offered the chance to prepare new invertebrate exhibits, and we decided to use our brand new space for two species of ants, flower chafer beetles, a tropical forest with butterflies and a beehive.

We built two glazed formicariums of 90x45cm, the first being for the carpenter ant (*Camponotus herculeanus*). This is the largest European ant species; the body length of the queen is 16mm and that of a worker ant, 12mm. Due to its size, it is an attractive species for visitors. Furthermore, it can be used as a key species for disseminating knowledge of native protected species. Carpenter ants nest in conifers where they drill corridors and build their nest cavities. They feed on honeydew and saps and also hunt insects. So, the formicarium

contains a vertical part which imitates a trunk while the interior nest is made of cork. Natural cork is a very good nest basis because it keeps proper humidity and does not develop mildew. It is also soft enough to drill corridors for the ants. Initially, in October 2010, we started with one queen and four workers. After a short time the colony grew to 20 workers, but then our carpenter ants got ready for the wintering period which lasted eight weeks. In January 2011 they resumed their activity again. The carpenter ants are a good educative species; visitors can easily distinguish the queen, the major worker ants – guards – and the minor ones which are typical workers.

SPECIALITY HOUSING

The Mediterranean harvester ant (*Messor barbarus*) is kept in our other new formicarium. These insects have a particular way of life, feeding on grass seeds and insects. The queen is 13mm in length, whereas worker ants can reach 10mm. The largest workers are soldiers which perform the function of nest defenders but also crack the seeds for food. This species

builds subterranean nests and in our formicarium they have a horizontal cork nest. The Mediterranean harvester ant is a very active insect with a quick population growth, and the visitors enjoy watching workers care for the larvae, and the soldier ants carrying and cracking the seeds.

The third species of social insect at Plock Zoo is the honeybee. The glass beehive located inside the pavilion is fitted with a glass tunnel which serves as an exit for worker bees. This transparent construction enables visitors to observe wandering worker bees flying off and coming back with nutrients. People can also see workers caring for the larvae, producing honey and building honeycombs, as well as the famous bee dance. These typical behaviours are described on the interpretation boards. Visitors can also easily distinguish workers, drones and the queen, which is marked by a special circular mark on the thorax. The wintering period is induced in all of our social insect exhibits electronically, by bringing in fresh air from the outside. This method turns out to be perfect, as our bees remain in good health and condition.

Our newest exhibit is a tropical forest with butterflies, two species of sun beetle, (*Pachnoda marginata peregrina* and *P. flaviventris*), and some reptile species. Visitors can walk through the tropical forest and they enjoy watching animals without any barriers, excluding a terrarium for the sun beetles which is arranged inside a hollow in a trunk. Visitors can watch butterflies flying around and also leaving the chrysalis stage in the incubator.

All of the above-mentioned exhibits have educational boards with detailed descriptions of the lives of the presented social insects and the structure of their colonies. There are also tactile screens with interactive presentations about the lives of social insects and protection of the species.



HARVESTER ANTS

Upping the standards

A REVIEW OF THE NEW AND IMPROVED BALAI QUARANTINE FACILITIES AT AMSTERDAM'S ARTIS ROYAL ZOO

Christiane Willard, Transport Coordinator and Corinne Bos, Policy Officer, Natura Artis Magistra

The quarantine facilities at Artis have recently received Balai approval, which means they have met a set of standards laid down by EU legislation. By renovating the old facilities according to the required standards of biosafety, hygiene, veterinary care, safety and welfare, the best possible care can be provided for animals during their mandatory isolation period. Moreover, the approval has greatly increased the possibilities for Artis to import animals from non-Balai facilities.

The story actually began in 2007, when Artis first received Balai approval for most of its facilities, but not the quarantine areas. As a result, Artis could not take in animals from non-Balai institutions, and as a result a number of potential animal acquisitions were not possible.

It soon became obvious that Balai-approved quarantine facilities were crucial for obtaining and maintaining our desired animal collection, and so a working group was formed to study the requirements, conditions and potential for these facilities. The working group included a curator, transport coordinator, vet, policy officer and architect, and they decided not just to fulfil Balai's essential requirements, but push on and work toward an even higher quality situation. This would benefit animals and staff, but also reduce the likelihood of further work down the line should the regulations become more strict in the future.

THE NEW-LOOK FACILITIES

Two existing facilities were first chosen for renovation, the first, and larger, being already used for non-Balai approved quarantine. The second facility was the former guard dog kennels. Now that renovation is complete, our first facility contains four separate, completely airtight units, which can be used independently of each other. All units have a roof window to allow the provision of natural light, have their own climate

control system and a ventilation system with a virus filter. From a service area which includes storage space and a central kitchen all the units can be reached through separate hygiene corridors. In each corridor, special clothing and necessary equipment for that unit are stored and hand-washing equipment included. These units can also be divided into two separate spaces, for safe cleaning and minimal stress levels for the animals in isolation.

The second facility is built similarly, but with three units, each smaller and particularly suited to bird quarantine. All units have the same hygiene corridors and the provision of access from the rear when an animal is placed

in the front separation of the unit. In addition, two units can also be joined to create a bigger area as required. One of the units has shower facilities in both its hygiene corridors, necessary to fulfill the strict hygiene conditions to allow for the quarantine of primates.

Since achieving Balai approval, Artis has been able to provide high quality quarantine. To ensure the animals' well-being even further, two further programmes have been developed: enrichment and a veterinary care.

As a result of all this, the Balai approval of our new quarantine facilities has certainly improved our opportunities of acquiring further species.



ACROSS THE BOARD

EAZA members in the EU are strongly encouraged to work towards Balai approval. More members are receiving approval status, and the EAZA Executive Office keeps track of Balai approval numbers to help facilitate animal transports (see the Transport Working Group workspace in the Member Area of the website). The EAZA Veterinary Committee, led by Jacques Kaandorp, continues to lobby in Brussels in order to improve EU-wide implementation of the Directive.

The conservation collective

SINCE THE LAUNCH OF THE DUTCH ZOO CONSERVATION FUND IN 1997, MORE THAN 80 CONSERVATION PROJECTS HAVE BEEN SUPPORTED WORLDWIDE. NOW, 14 YEARS LATER, IT'S TIME TO SEE HOW FAR THE FUND HAS COME AND WHAT THE FUTURE HOLDS

Mirko Marseille, Knowledge and Membership Coordinator, Dutch Zoo Association

The establishment of the Dutch Zoo Conservation Fund (in Dutch, NVD Natuurbeschermingsfonds) was initiated by members of the Dutch Zoo Association (NVD) who felt that zoos needed to implement the recommendations of the World Zoo Conservation Strategy in a more proactive and rigorous way. Most NVD zoos already had a zoo specific conservation fund in place, but it was expected that a pooled conservation fund under the banner of the NVD would have a greater impact, not just financially but also in terms of capacity-building, communication, education and public relations.

It was also felt that a pooled conservation fund would be a unique and interesting formula to emphasise the commitment of NVD zoos to nature conservation. The project that kicked the process off supported the development of the Uganda Wildlife Education centre project in Entebbe. The Dutch Zoo Conservation Fund (DZCF) was under way, and it wasn't long before a new logo was developed, too. Today, the DZCF board consists of five members, each representing a different zoo, and is technically assisted by the NVD Executive Office. The DZCF board meets four times a year during which project applications are discussed and reviewed. At annual NVD member meetings the DZCF chair informs NVD members about DZCF proceedings and expenditures which, over the past six years, have averaged around €160,000 per annum.

DZCF conservation projects focus on integrating the conservation of important and/or threatened species (around 80% of the species that feature



in the projects are IUCN Red List Critically Endangered, Endangered or Vulnerable) or species relevant to the protection of specific ecosystems. Project criteria require an educational component, involvement of local communities and/or NGOs and the visual promotion of the nature conservation role played by zoos.

DZCF projects are very diverse. Some project partners receive ongoing support throughout the years and build up a strong relationship with DZCF. Established projects such as the African hunting dog (*Lycaon pictus*) conservation project in Zimbabwe, the lowland tapir (*Tapirus terrestris*) project in Brazil and the Grevy's zebra project (*Equus grevyi*) in Kenya continue to develop in a professional way.

BACK TO THE ROOTS

Other project partners are relatively small-scaled and/or recently initiated. Most grassroots projects are characterised by the fact that implementation is carried out by communities in their immediate surroundings. DZCF supports such community projects in Benin, focusing on the conservation of the red-bellied guenon (*Cercopithecus erythrogaster*), the pancake tortoise (*Malacochersus tornieri*) conservation project in Kenya and the Guatemalan black howler monkey

(*Alouatta pigra*) reforestation and education project in Guatemala.

Obviously, education is a key component of all DZCF projects. However, there are DZCF projects that focus solely on educational impact. The Humboldt penguin (*Spheniscus humboldti*) bus project in Peru exemplifies this. This is a mobile exhibition that calls at local communities along the Peruvian coastline: children visit the bus and learn about the biology of the bird, why the species is threatened and what can be done in order to protect the species. A similar educational DZCF project is the travelling snake exhibit project along the Caribbean coast of Colombia. DZCF also supports projects for which the prime focus is the production of educational materials such as brochures, books (like a field guide to the tracks and signs of Indian wildlife) and nature conservation movies. The first phase of the brown bear (*Ursus arctos syriacus*) project in Iran for example included the production of the first documentary movie about locally endangered brown bears in the country. This movie is now disseminated through the communities in Iran that share their environment with free roaming bears.

Based on returned project progress reports and enthusiastic and inspiring updates from field biologists and local communities, DZCF has been relatively successful in meeting its conservation goals. Over the past 14 years DZCF has formed strategic alliances with professional project partners worldwide, has continuously supported field conservation projects and contributed to the international conservation arena by sharing expertise and knowledge.



GIRL PARTICIPATING IN THE GUATEMALAN HOWLER MONKEY EDUCATION PROJECT, BY MICHAEL DE GROOT

From an internal point of view however there still is a lot of work that needs to be done. DZCF makes a difference in relation to *in situ* conservation projects, but the (educational) conversion of these efforts to the respective NVD member zoos is still in its infancy. Most zoo visitors as well as the zoo community are not familiar with DZCF, which is a missed opportunity, as the projects provide a clear link between

conservation efforts in the wild and the species that are on display in the zoos. By informing the public and the zoo community through brochures, presentations and information panels it is likely people will connect to conservation more proactively. In order to deal with this issue, DZCF has developed a new website (www.dzcf.nl), distributed quarterly e-newsletters and started to publicise annual project reviews. In addition, the

NVD marketing concept 'junior zoo directors' has been combined with DZCF projects. Children are able to win conservation money prizes for their favourite DZCF conservation project.

DZCF still has to work hard on PR to reach a wider audience, although DZCF board members have limited time available as they're on the board on a voluntary basis. Another worrying development is the present economical situation. The forthcoming years will be earmarked by cutting budgets and declining profits, which will impact on the annual DZCF budget that is made available by the NVD member zoos. DZCF used to receive funds from a few sponsors in the past, and is on the lookout for potential new sponsors. But at the present time it is hard to secure funding. Companies outside the realm of the zoo community assume that zoos have plenty of budget available – a common misunderstanding.

One thing is certain – over the past 14 years DZCF has shown great ability to adapt and be flexible. That is the merit of the dedicated conservation mind of the people behind DZCF. As long as this commitment stands strong, it is likely that DZCF will survive into the future.

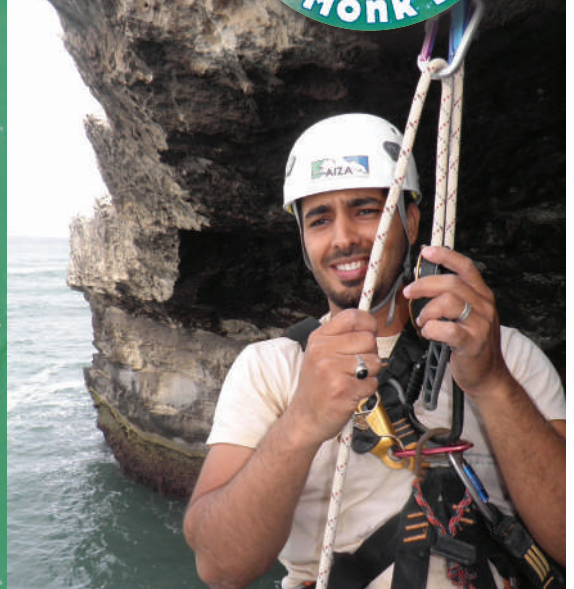
PROJECTS FUNDED BY DZCF IN 2010		
Grevy's zebra	Kenya	Marwell Wildlife
Scarlet ibis	Suriname	Stichting Vrienden van STINASU
Lowland tapir	Brazil	Instituto de Pesquisas Ecologicas
Black rhino	South Africa	Wildlands Conservation Trust
Black crested gibbon	Vietnam/Cambodia	Slothouwer Films
Orangutan	Sumatra	Institute for Biodiversity and Ecosystem Dynamics
Gorilla	Congo	ECOFAC
Painted dog	Zimbabwe	Painted Dog Conservation
Giant anteater	Argentina	El Zoo de Florencio Varela
Proboscis monkey	Kalimantan	Institute for Biodiversity and Ecosystem Dynamics
Black spider monkey	Suriname	Paramaribo Zoo
Asiatic black bear	Iran	Anatolian Leopard Foundation
Swayne's hartebeest	Ethiopia	Transnature
Cheetah	Namibia	Cheetah Conservation Fund
Black vulture	Spain/France	Vulture Conservation Foundation
Barbary macaque	Morocco	Moroccan Primate Conservation Foundation
Syrian brown bear	Iran	Iranian Cheetah Society

Supporting conservation the direct way

ZOOS CAN PLAY AN IMPORTANT ROLE IN FUNDING EXISTING CONSERVATION PROJECTS, AS THIS TALE OF THE MONK SEAL REVEALS



Jesús Fernández, Director of the Zoological department of Parques Reunidos



PARQUES REUNIDOS

The Mediterranean Monk Seal (*Monachus monachus*) is one of the world's most endangered marine mammals, with fewer than 500 individuals now populating our seas. Until recently the monk seal was a frequent sight on the Mediterranean coast, but the destruction of its habitat, due to tourism related coastal development and pollution, alongside threats from the fishing industry, has led to a dramatic decline in numbers. Today, there are only small communities left – mainly in the area between Greece and Turkey, off the coast of Mauritania (Africa), close to the Portuguese island of Madeira and near Melilla close to the Chafarinas Islands.

In an attempt to help the seal pull back from the brink of extinction, Parques Reunidos has launched a new conservation project for the mammal off the Mauritanian coast. Collaborating with the CBD-Habitat Foundation, the leisure parks group will support and promote the project through its zoological

parques and aquariums including Blackpool Zoo, Madrid Zoo, Faunia, Selwo, Oceanográfico Valencia and Marineland Antibes. Between them, they will collect money to help the CBD-Habitat Foundation as they strive to save one of the world's most endangered creatures. Encouragingly, the Spanish Federation of Zoos (AIZA) has also joined the programme, expanding the project's scope to the Spanish zoo network.

The last remaining monk seal 'sanctuary' is located on the Cap Blanc peninsula (part of Morocco and Mauritania). It was discovered in 1945 by the Spanish biologist Eugenio Morales Agacino and the last colony is currently recovering thanks to the help and support of the CBD-Habitat Foundation. Among the 300 individuals that survive in the area, 55 pups were born in 2010. In order to rear their young, monk seals take shelter in coastal areas, for which they usually have to rely on caves, leaving them vulnerable to the threat of rough seas. Thanks to the conservation project,

seals are now back at the beaches for their breeding period, which increases the chances of pup survival.

So how have they created this chance for survival? The CBD-Habitat Foundation, which is a non-profit organisation that works by bringing nature and human society together, has been working hard to improve the living conditions and safety of the monk seals. It has been educating local people in the needs of the seal, and patrolling the beaches, along with the local coastguard, to prevent illegal fishing and human interference in the animal's lifecycle. The team also monitors the colony to detect changes in population, learn more about the biology and ecology of the monk seal, and study migration patterns.

Yet this all costs money, and so Parques Reunidos is contributing €25,000 to support this vital conservation project over the next two years. In fact its cooperation with the CBD-Habitat Foundation has already won the Annual Conservation Award (€6,000) from AIZA.

Newt beginnings

HOW EAZA HAS FACILITATED PUBLIC AWARENESS TRAINING AND *IN SITU* RESEARCH OF AN IUCN LISTED NEWT SPECIES ENDEMIC TO VIETNAM

Marta Bernardes and Thomas Ziegler, Cologne Zoo; Pham The Cuong and Nguyen Quang Truong, Institute of Ecology and Biological Resources, Hanoi

Yen Tu Massif, in the north-east of Vietnam, is one of the country's largest granite formations. Within it sits Tay Yen Tu Nature Reserve, established by the Bac Giang Provincial People's Committee in July 2002. The reserve covers a total forest area of 13,022ha comprising 6,022ha of core zone and 7,000ha of ecological rehabilitation zone, and it supports one of the largest contiguous areas of lowland evergreen forest in north-eastern Vietnam. As this forest type has been lost from most other areas, Tay Yen Tu unsurprisingly supports populations of plant and animal species that are no longer found elsewhere in the country.

From a herpetological point of view, Yen Tu forest is home to a number of endemic Vietnamese species such as the Vietnam granular newt (*Tylototriton vietnamensis*), the Yen Tu frog (*Odorrana yentuensis*), and the devoured forest skink (*Sphenomorphus devorator*). The Chinese crocodile lizard (*Shinisaurus crocodilurus*) and the ornated keelback (*Amphismoides ornaticeps*) are just two of the new country records recently discovered in Yen Tu, and which previously were only known from few localities in southern China. This makes Yen Tu an important forest region within Vietnam, and also increases its significance in an international

context. To highlight this extraordinary lowland forest ecosystem and to support conservation management of the Tay Yen Tu Nature Reserve, EAZA provided €2,000 to publish a nature reserve brochure. The brochure, written in Vietnamese, contains 36 pages, with a brief English introduction that covers aspects such as biodiversity value, research, conservation and sustainable development. A pdf file, which was published at the end of the International Year of Biodiversity 2010, is available at <http://www.eaza.net/campaigns/Pages/Amphibian.aspx>.

NEW RESEARCH

To further support *in situ* activities, the EAZA Amphibian Conservation Fund sponsored research into the Vietnam granular newt in Yen Tu to the tune of €4,000. The species had only recently been discovered, and since its scientific description in 2005, no further studies had been conducted. The newt is listed as Near Threatened under the IUCN and is endemic to Vietnam. With EAZA's support we were able to perform the very first studies into the ecology of this species, in particular focusing on habitat characterisation, population size and reproduction.

Field surveys were carried out within the breeding season, between April and July 2010, and focused on one of the four sites in northern and north-

central Vietnam where the species is known to occur, namely Tay Yen Tu Nature Reserve. Of 23 examined ponds, 16 proved to be inhabited by the newt. Here, the typical habitat consisted of permanent, muddy ponds in the shadow of trees, located in a secondary forest that included bamboo. During our research period, we inspected each pond three times on average, and found a total of 163 adult newts at altitudes between 180 and 580m above sea level. Males proved to be smaller than females, with a maximum 74.7mm snout-vent length in males, and 83.5mm in females. We used the capture-recapture method for estimating population size by marking individuals with implanted micro-transponders. Recaptures were only verified in seven ponds in which 20.9% of all the marked individuals were recaptured at least once. All 16 inhabited ponds showed evidence of reproduction through presence of clutches or young throughout the whole field survey period. Terrestrial juveniles could also be recorded for the first time.

Meanwhile, the Amphibian Station of the Institute of Ecology and Biological Resources at Hanoi, was able to record the first successful breeding of this species in captivity. The data is currently being analysed and results will be published elsewhere.

At Tay Yen Tu Nature Reserve habitat degradation, due to agricultural interference, logging and the existence of a coal extraction factory, seems to be the strongest threat. In addition, more than 17,000 people live inside the reserve and within the buffer zone, and it is a popular site for domestic tourism. Future conservation measures need to be considered and implemented.

Finally, the authors as well as the Forest Protection Department of Bac Giang Province and the Yen Tu Nature Reserve are very grateful to EAZA for its support.



VIETNAM GRANULAR NEWT
(*TYLOTOTRITON VIETNAMENSIS*)
IN THE HABITAT. T. ZIEGLER

Fresh approach to fish conservation

LAST YEAR'S FRESHWATER FISH SYMPOSIUM WAS THE FIRST TO EXAMINE THE LINKS BETWEEN *IN SITU* AND *EX SITU* CONSERVATION WORK

Claudine Gibson, Programme Officer, IUCN SSC / WI Freshwater Fish Specialist Group, Chester Zoo

In November 2010, Chester Zoo hosted the fourth in a series of public aquarium husbandry symposia, entitled 'Global Freshwater Fish Conservation: linking *ex situ* and *in situ* actions', jointly organised by Chester Zoo, the IUCN SSC / Wetlands International Freshwater Fish Specialist Group (FFSG) and ZSL, with support from the European Union of Aquarium Curators and endorsement from the Aquarium Committees of EAZA and WAZA. The primary aim was to encourage relationships and identify potential freshwater fish conservation initiatives in collaboration between the zoo and aquarium and international science and conservation communities.

ZSL's Dr Heather Koldewey, Chair of the WAZA Aquarium Committee, led the contributions on behalf of the zoo and aquarium community; partnering with Gordon McGregor Reid, Global Chair of the Freshwater Fish Specialist Group and Director Emeritus (formerly Director General), Chester Zoo. This unique partnership provided a valuable opportunity to combine the strengths of the zoo community together with the collective expert knowledge of a taxonomic Specialist Group; so creating a powerful platform from which to develop holistic freshwater biodiversity conservation initiatives.

The meeting was attended by 55 freshwater conservation biologists, research scientists, and zoo and aquarium specialists, from 21 countries; an unprecedented mix of experts. In his address to the meeting, Dr Simon Stuart, Chair of the IUCN Species Survival Commission, emphasised that 'there is a significant and growing challenge ahead to conserve freshwater habitats and species, and it is important to consider all the options that are available to conservationists to

prevent or reduce negative impacts.' Participants affirmed the important role of zoos and aquariums in supporting *in situ* conservation, as well as properly planned and informed *ex situ* programmes. Professor McGregor Reid stressed the important role that zoos and aquariums can play in conservation: 'Each year, more than 700 million people visit zoos and aquariums worldwide – a bigger attendance than all football games! Because of this resource, zoos and aquariums give \$350 million annually directly to field projects. What we need to know is how to take the most effective actions, in the most important areas.'

A FINE START

The week-long meeting got off to a swimming start with presentations from FFSG Regional Vice chairs on the current situation regarding the freshwater fishes, habitats and their conservation in their respective regions. Each *in situ* presentation was matched by a presentation from a representative of the regional zoo association from the same area, who provided an update on the freshwater fish priorities for zoos and aquariums within the region. This region-by-region coverage gave all meeting participants a good introduction to the status of freshwater fish biodiversity and highlighted knowledge gaps and conservation needs worldwide.

Further themes included husbandry, veterinary care and management; management of live collections; tools

and methods for conservation priority setting and population management and integrated conservation: looking at which species benefit from *ex situ* management.

During the Husbandry, Veterinary Care and Management session, Andrew Routh Chief Veterinary Officer, ZSL and Richard Gibson, Curator of Lower Vertebrates and Invertebrates, Chester Zoo ran workshops on biosecurity and avoiding domestication. The aim of the biosecurity workshop was to catalogue and review diseases and modes of transmission from various sources, including from the wild/trade, other institutions, within an institution and potential reintroductions to the wild. The workshop also looked at key management aspects to address involving waste, disinfection and avoidance of bio-pollution, in a number of areas such as incoming quarantine, biosecurity, quarantine isolation, barrier-management and tests in the field.

The domestication workshop highlighted problems for *ex situ* management. These are numerous and include tiny *ex situ* population sizes, failure to represent wild populations *ex situ*, bottlenecks, genetic drift, inbreeding depression, mixing of distinct stocks and generations, artificial mate selection and adaptation to captivity, which all lead to domestication. The concerns with domestication include differentiating phenotypic plasticity from genetic change, increased homozygosity, loss

Each *in situ* presentation was matched by another by the regional zoo association from the same area

of variation and possible reduced fitness; ultimately putting into question their suitability for repatriation. Break-out groups worked on best practice guidelines for setting up and managing *ex situ* populations and for the husbandry and environmental provision for maintenance of *ex situ* populations. The outcomes of both workshops will be made widely available in the near future.

During the session on tools and methods for conservation priority setting, delegates from the international conservation community gave presentations on the IUCN Red List of Threatened Species and EDGE. Results from the IUCN Red List, presented by Dr William Darwall, from IUCN's Species Programme, showed that the world's freshwaters are among the most threatened of all habitats, and freshwater fishes are being severely impacted. He stated: 'Nevertheless, we still lack basic data on the biological diversity of many freshwater habitats around the world, and the threats they face.' More action on assessing the risk of extinction to species, as defined through the criteria used in the IUCN Red List, is urgently needed.

PRIORITIES

Representatives from Conservation International and WWF spoke about their priorities within their organisations' freshwater initiatives and Dr Simon Stuart, SSC Chair, presented the results of the 10th Convention of Parties to the Convention on Biological Diversity (CBD), where the 185 signatory countries agreed targets for the conservation of the world's biodiversity over the next 10 years. Greater protection for inland waters and sustainable management of inland fisheries are now, for the first time, specifically mentioned in a number of the CBD targets. This calls for a significantly increased investment in research, conservation planning, and management in inland waters.

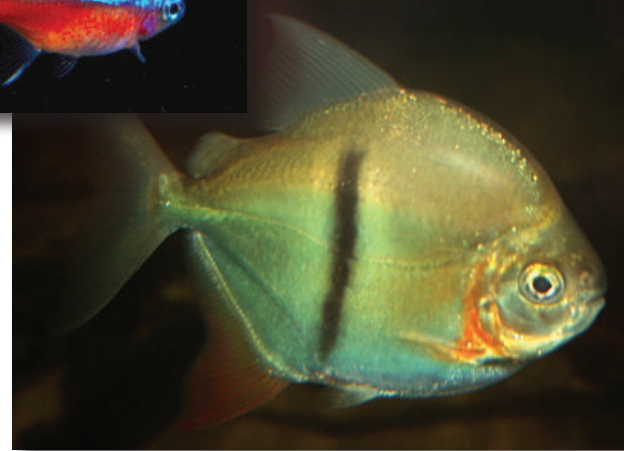
Richard Gibson presented the Amphibian Ark's Conservation Needs Assessment tool. In workshop groups, delegates investigated whether this tool could be transferred and applied to fishes. Richard will be working further with members of the FFSG to progress this process and trial assessing a region's freshwater fish with a modified



MAIN PICS CLOCKWISE FROM ABOVE: CARDINAL TETRA (*PARACHEIRODON AXELRODI*) FROM SOUTH AMERICA. THE SUSTAINABLE HARVEST OF THIS SPECIES FOR THE GLOBAL AQUARIUM TRADE PROVIDES THE LIVELIHOODS FOR THOUSANDS OF PEOPLE LIVING IN THE AMAZON FOREST AND SERVES AS AN ECONOMIC DRIVER FOR RESIDENT-BASED ENVIRONMENTAL STEWARDSHIP. PROPERLY MANAGED AQUARIUM FISHERIES ARE INCREASINGLY BEING SEEN AS AN EFFECTIVE MECHANISM TO PROTECT OTHERWISE THREATENED AREAS. PHOTO: SCOTT DOWD
BLACK-BARRED MYLEUS (*MYLEUS SCHOMBURGKI*). PHOTO: KIENAN PARBLES.

TWO MALE CHARCO LA PALMA PUFFFISH (*CYPRINODON LONGIDORSALIS*). THIS SPECIES IS ORIGINALLY FROM MEXICO, BUT IS NOW EXTINCT IN THE WILD. PHOTO: HEIKO KAERST.

FFSG REGIONAL CHAIR, ROBERTO REIS, WITH A HOLOTYPE OF A NEW SPECIES STILL TO BE DESCRIBED, WHICH WAS COLLECTED IN PERU.



tool. Brian Zimmerman, Assistant Aquarium Curator, ZSL, looked at Regional Collection Planning as a tool for freshwater fish conservation prioritisation within the zoo and aquarium community. Regional break-out groups each selected a number of threatened species from within their region to put through the process, with the aim of potentially identifying species that would benefit from *ex situ* conservation.

This intensive and productive meeting culminated in a final workshop that brought together elements from previous workshops, presentations and discussions and resulted in each of the zoos and aquariums represented

at the meeting partnering with FFSG members to look into the feasibility of creating a combined *in situ* / *ex situ* conservation initiative for one or more species within a region. Specific projects will be identified for priority species in a number of regions globally, linking *in situ* actions (i.e. conservation actions within the natural habitat and range of the species) and *ex situ* actions.

Symposium proceedings will be published as the next volume of the 'Public Aquarium Husbandry Series'. We would like to thank all the participants for their hard work and dedication during the workshop and for their continuing enthusiasm to carry this work into the future.



FEEDING LEMURS TO EXTINCTION

OVERWEIGHT LEMURS ARE NO JOKE: THEIR CONDITION CAN DAMAGE THEIR HEALTH AND MAKE THEM VERY POOR BREEDING PROSPECTS. IT'S TIME TO PAY GREATER ATTENTION TO THIS PROBLEM

Achim Johann, EAZA Prosimian TAG Chair

In spring 2010 EAZA's Prosimian TAG met to work on the Regional Collection Plan for lemurs and non-Madagascan prosimians. The process involves a review of the different breeding programmes (EEPs, ESBs), in which programme coordinators and studbook keepers report on the achievements and the failures of their programmes. When evaluating these reports it was revealed that failures in husbandry brought two programmes to a now critical state and might negatively influence at least three more programmes.

Inappropriate feeding led to such a high level of obese animals that Sclater's lemurs (*Eulemur macaco flavifrons*) and mongoose lemurs (*Eulemur mongoz*) are thus on the brink of extinction in zoos because of their poor physical state and consequential breeding failures. In fact, there are only four potential breeding pairs of Sclater's lemur left, and the situation might be even worse

for the Mongoose lemur in spite of the larger population size.

Lemur nutrition is a well-studied topic both in the wild and in zoos and, subsequently, feeding recommendations are regularly made (see literature citations on the Prosimian TAG workspace on the EAZA website). Furthermore, the tendency for obesity in lemurs is commonly known. So it was assumed that there would be no further need for concern about appropriate husbandry. Yet this does not seem to be the case. Why are we still, or once again, confronted with such a husbandry failure?

MIXED FEEDERS

Among the lemur taxa kept we find nutritional specialists (sifaka, bamboo lemurs) and more adaptable generalists (*Eulemur* species). Do we have sufficient knowledge about the nutritional adaptations and specialisations? Is more specific research needed? The TAG will work

on a compilation and summary of studies on lemur nutrition as a basic resource centre.

The checklist shown in the box is intended to raise awareness of the topic because of its urgency. Ideally, it needs to be distributed to all involved in the management and practical care of lemurs. On the Prosimian TAG website workspace you will find also a table with body-weights of wild lemurs for comparison with your own. There are good examples online of husbandry practice to work against obesity.

'Fat lemurs' are evidence of unprofessional husbandry. They are low-class exhibit animals for educational or any other purposes. And because of their inability to breed they are being lost to breeding programmes. In the case of the Critically Endangered Sclater's lemur zoos received an official mandate for *ex situ* breeding from the IUCN some years ago. It would be absurd not to be able to reach these standards:



after all, it's not as if the species is a particularly delicate one that causes huge husbandry challenges. When the Sclater's lemur EEP recently considered restocking the European population with imports from captive-bred stock in Madagascar, the Prosimian TAG refused to support such an action. Moreover the TAG requested a demonstration of our professional skills and capabilities in propagating the programme from what we still have on site. If we succeed in doing so over the next few years we will be justified in bringing in more animals to expand the population.

A final remark on responsibilities: if you create a poor creature which is a mere caricature of its natural appearance then you also have to take full responsibility.

EEP coordinators have been under pressure from some programme participants to outpace animals. When new holders were found they had not been too happy with what they received: obese lemurs that the original zoo obviously wanted to dispose of. Breeding programmes and our colleagues should not be regarded as a means and method of dumping unloved animals. And we must thank and compliment those colleagues who act as 'weight-watchers' in trying to bring the obese lemurs back into better shape again.



FOOD FOR THOUGHT

From the available knowledge zoos should provide their keepers with a written institutional feeding plan listing quality of the food and its quantity. When calculating and fixing the quantity and quality these are the key points to consider:

- There is a seasonal change of food intake in some species (for example male ring-tailed lemurs gain weight for the mating season).
- Additional feeding needs to be checked and controlled. There are a great and increasing number of walk-in lemur exhibits which make feeding by visitors – disallowed but nevertheless fairly frequent - easily feasible. In addition, permitted close contact with and feeding of lemurs are nowadays very popular as special events (birthday parties, animal adoptions, and so on). The treats given at such occasions can easily have a negative influence on a balanced diet.
- Enrichment feeding must be included in the total quantity and quality calculations. Some items seen as enrichment food (scattered seeds or raisins) are in fact of higher calorific value than the basic food.
- Lemurs are increasingly being kept in larger naturalistic enclosures. The vegetation in these exhibits must be seen as a potential source of food, sometimes seasonally, sometimes all year round.
- Mixed-lemur-species exhibits are nowadays very popular (and in fact in many cases they're recommended as a way of increasing holding capacities for a number of taxa). Care must be taken that the different species have access only to the food meant for them. Furthermore, the dominance of species and individuals resulting in the monopolisation of food must be considered. So, separate feeding of the species and even individuals might be required. Note also that exhibits that mix lemurs with completely different animal taxa (small mammals, birds) might be a problem in the same way.

Are there any further factors which affect weight gain? Maybe ambient temperature, enclosure size and structures? There is certainly some need for research.

The daily amount of food must be controlled by weighing. This is the most objective method and also helps communication among keepers. It might also be advisable to weigh the animals regularly (they can be trained to stand on scales).



The Learning Experience

THE IUCN COMMISSION ON EDUCATION AND COMMUNICATION (IUCN CEC) IS A NETWORK THAT YOU NEED, AND THAT ZOOS NEED. IT ALSO NEEDS YOU

Malcolm Whitehead, CEPA specialist and author, is a member of the IUCN CEC and has held senior education posts at Twycross Zoo, WWT and ZSL

Happy new year. Godt nytar. Gelukkig nieuwjaar. Head uut aastat. Felican novan jaron (and apologies to those languages omitted).

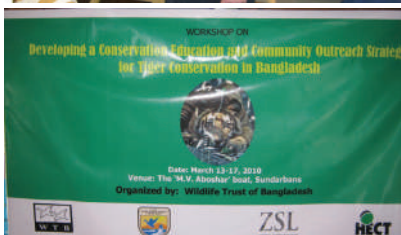
Yes, a new year and a new 'year of...'. 2010 was the International Year of Biodiversity. 2011 is the International Year of Forests. Further, it's a new decade: the United Nations Decade of Biodiversity. Get yours here, a cynic might say, while stocks last...

Oh, and not to mention that we're in the middle of the (fanfare of trumpets) World Decade of Education for Sustainable Development (2005-2014). It's confusing enough for conservation professionals, let alone the different audiences we engage with.

But it is a new year and that means time for a new start. Time to do things differently. No more 'business as usual'.

The phrase 'business as usual' has resounded around the corridors of conservation a lot recently. Following the 2010 Nagoya meeting on biodiversity, it is clear that species are becoming extinct much faster than they are speciating – in some cases more than 1,000 times faster than the fossil record. We are in danger of losing about a quarter of all vertebrate species this century unless we raise our game significantly in terms of ecosystem management, political will and adequate resources for conservation (see the Evolution Lost report for details – www.zsl.org/evolutionlost). Conservation works – there are success stories and many of these involve zoos and aquariums – but we need to operate on a new, different and larger scale.

At the forefront of facilitating change for environmental sustainability is IUCN, the International Union for Conservation of Nature. IUCN is the world's oldest (founded in 1948) and largest global environmental network. It has about 1,000 members, 200 from governments and 800 from non-governmental organisations. There



FRITS HESSELINK (CEC SPECIAL ADVISER) AT THE IUCN-CEC/ZSL/WILDLIFE TRUST OF BANGLADESH TIGER CONSERVATION CEPA WORKSHOP HELD IN BANGLADESH 2010

is a staff of about 1,100 in some 60 countries.

IUCN operates through a global network of more than 10,000 specialists from academics to social activists. These contribute (largely voluntarily) to IUCN's six commissions – on Environmental, Economic and Social Policy; Environmental Law; Ecosystem Management; Protected Areas; Species Survival; and Education and Communication. Many zoos, aquariums and zoological societies are IUCN members and some of their staff are Commission members, mostly within the Species Survival Commission (SSC) which has about 7,500 members.

FOCUS ON EDUCATION

This article, however, seeks to draw attention to the Commission on Education and Communication (CEC) (www.iucn.org/cec).

CEC is about learning, knowledge management and strategic communications to drive change for sustainability. It has about 700 members

who work at all levels from senior government to grassroots community conservation. The Commission's secretariat is based at IUCN's Science and Learning Unit. There are various regional vice-chairs (including for Europe and the Mediterranean), national activators and specialist groups, all contactable through the CEC website. The specialist groups comprise those on CEPA (communication, education and public awareness), ESD (Education for Sustainable Development), Environmental Information, Environmental Security, Knowledge Management, Learning and Leadership.

In this new decade, CEC is focusing on strategic communications across the whole of IUCN. Everything, after all, is linked and it is fairly straightforward to unravel many layers of connection. The classic Chaos Theory metaphor of a Brazilian butterfly's flapping wings setting off a chain of events culminating in a Texan tornado may or may not be true, but climate change, deforestation and unsustainable consumption are directly linked to species loss, habitat fragmentation, poverty, freshwater scarcity and much else.

Within the 'One-Programme IUCN', CEC is concerned particularly with biodiversity, climate change and environmental security. Zoo and aquarium professionals will be conversant with the first two, but the emergence of environmental security as a factor of national security is a growing area. Already some government intelligence agencies and military bodies are considering the potential security implications of, say, tsunamis or the extensive flooding seen recently in Pakistan and previously in the southern USA following Hurricane Katrina.

CEC is also prioritising the strengthening of its regional networks, engaging with new audiences, forming alliances with non-traditional partners;

and better integrating learning, knowledge management and strategic communications.

This is why zoo and aquarium educators, interpreters and marketing communicators could benefit hugely from joining IUCN CEC. Zoos and aquariums live in networks at national, regional and global level. CEC is a network of networks, offering enormous opportunities for learning, capacity building and professional development.

There's a lot of practical guidance. CEC members receive a monthly e-newsletter with numerous links to worldwide case studies, best practice and resources.

Other resources include an amazing CEPA toolkit developed for the Convention on Biological Diversity (CBD) by CEC and partners (free download from www.cepatoolkit.org). It covers an enormous amount of ground about networking and raising awareness, operating CEPA programmes for a wide variety of audiences, planning strategic communications, and why such initiatives are needed. There are many case studies, downloadable exercises, slides and other materials. Any zoo or aquarium educator would benefit, as would their marketing and development (fundraising) staff as the case is made for support that might be incorporated into grant proposals or submissions to donors.

Then there is the 'Guide to Participatory Action Planning and Techniques for Facilitating Groups' (www.ramsar.org/pdf/outreach_actionplanning_guide.pdf). Prepared by CEC and others for the Ramsar Convention on Wetlands, the guide adopts both CEPA and social marketing approaches. Workshop participants review particular conservation (or other) issues in terms of the major stakeholder groups affecting such issues, and their (the stakeholder) perceptions of the issues. The relevant stakeholder groups are then prioritised as the target audiences where behaviour changes are most likely to result in sustainability. The workshop then considers the most appropriate communication interventions to bring about the desired changes.

Zoo and aquarium educators (and other communications staff) have great skills and creativity

During 2010 Frits Hesselink, a former CEC Chair and current CEC special adviser, used the above Action Plan with colleagues from the Wildlife Trust of Bangladesh and the Zoological Society of London (ZSL) as the basis for a CEPA workshop concerning tiger conservation in the world's largest mangrove forest. During a week-long cruise in the Bangladesh Sunderbans the partners worked with Government forestry officers, biologists, social activists, media persons and others to formulate a Communications Plan for the conservation of tigers within this specialised ecosystem.

DEVELOPING INITIATIVES

The approach could just as easily be used for developing a zoo or aquarium CEPA Policy or for any number of *in situ* and *ex situ* initiatives. Further resources include a Climate Science e-learning module (<http://cec.wcln.org/climatechangeupdate/science>) as part of IUCN's Professional Updating Initiative. And remember that your zoo or aquarium is likely to use IUCN's Red List categorisations in its collection planning, inventories, population management and public signage.

If CEC can help to develop zoo and aquarium educators' and communicators' capacity to effect change, then the reverse is also true. Only around 30 EAZA member institutions and federations are members of the IUCN.

But if that's underwhelming, then the number of zoo and aquarium professionals linked to CEC is marginally better than Hainan's population of endemic gibbons. About 20 zoo professionals are listed on the CEC database, of which about one half are within the EAZA region. Almost all are directors or field conservation managers. Fair enough, but where are

the educators?

Zoo and aquarium educators (and other communications staff) have great skills and creativity. Their experience and track record with diverse formal and free-choice learning audiences, their input into curriculum-based school programmes, their contribution to public exhibits and exhibitions, their occasional forays into the magic lands of the *in situ*, their burgeoning work in evaluation and their campaigning prowess could add enormous value to IUCN, the CEC and conservation communication generally. Furthermore, they have the potential to reach 700 million visitors annually.

And consider this: education is a legal obligation for European zoos and aquariums (EU Zoo Directive 1999/22 EC). There's a new EAZA Conservation Education Strategy, available from the Member Area of the EAZA website (www.eaza.net). There is a new Biodiversity Strategy from the CBD following the Nagoya meeting (www.cbd.int/sp/sp2010p/; also see IUCN response – www.iucn.org/knowledge/news/focus/next_steps/down_to_business/). All of these should inform each other. And nobody wants 'business as usual'.

The timing is right for change. The European Zoo Educators meeting in March 2011 will focus on 'bringing the Conservation Education Strategy to life'. And it's in Valencia, the home of paella. Could there be a more biodiverse meal to fuel the future?

Linking to CEC will really help you, your zoo (or aquarium), IUCN and biodiversity to keep this new year's resolution running. Join IUCN CEC today. Membership is free and directed at individuals rather than institutions (although the zoo or aquarium may or may not be an IUCN member).

To join, contact cec@iucn.org.

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