



TAG reports 2012

EUROPEAN ASSOCIATION OF ZOOS AND AQUARIA

INTRODUCTION

EAZA's Taxon Advisory Groups (TAG) range from Terrestrial Invertebrates to Tapirs and Hippos, from Penguins to Felids and many more. TAGs define the ex situ management level a species requires, which might be low, medium or high. Within the European Association of Zoos and Aquaria (EAZA) these levels are defined as Monitor Programmes, European Studbooks (ESB) or European Endangered Species Programmes (EEP). At the end of 2012 EAZA had 40 TAGs, 189 EEPs and 189 ESBs.

Each TAG develops and oversees the implementation of a Regional Collection Plan (RCP), in which the management level of species is outlined. The RCP is a living document, continually under revision due to shifts in both ex situ and in situ population management. RCPs can be used as the base for Institutional Collection Plans, so that institutions obtain animals that have the highest priority of being held within the EAZA community. The TAG also oversees and helps to develop Husbandry Guidelines that reflect the best practice management of the respective taxa.

The TAG itself is lead by a TAG chair who is assisted by one or more TAG vice chairs, depending on the number of species covered by the group. Within the remit of the TAG also lie the EEPs, ESBs and Monitor Programmes and the TAG encourages involvement of representatives from across the EAZA community. Most TAGs are assisted by internal and external advisors regarding specific topics, such as veterinary or research matters for instance. Additionally EAZA's EEP Committee guides the TAGs in decision making processes, such as approving the nomination of new breeding programme managers and non-EAZA institutions to participate in EEPs.

Together the EAZA's TAGs cover all groups of animals held by EAZA collections. A TAG meeting is held at least once per year, which brings breeding programme managers, other experts and interested parties together. To ensure the quality of intensively managed populations, the TAGs evaluate their EEPs every five years.

A detailed overview of these activities can be found in this TAG Annual Report. If you wish to receive more information on any of the topics raised, please contact the EAZA Executive Office via info@eaza.net.

EAZA thanks all the chairs, members and breeding programme coordinators for their hard work in 2012.

TERRESTRIAL INVERTEBRATES

TAG Chair: Warren Spencer, Artis Royal Zoo, Amsterdam, The Netherlands

TAG Vice Chair: Paul Pierce-Kelly, Zoological Society of London, London, United Kingdom

The EAZA Terrestrial Invertebrate TAG (TITAG) held its single annual meeting at Innsbruck during the EAZA annual conference and again focused efforts on the reporting of progress since the previous conference in Montpellier in 2011.

One action was to find a Regional Collection Plan (RCP) coordinator to continue the RCP development and to work towards the publication of the second version of this very useful tool. Mark Bushell, Assistant Curator of Invertebrates at Bristol Zoo Gardens has now taken up this task and has been extremely busy reviewing the current edition and planning for improvements. This second version will also incorporate feedback and guidance from EAZA and will be hopefully presented at the main TITAG meeting in 2013 in Edinburgh and published thereafter.

The 2011 Partula snail EEP studbook was produced and circulated and records 18 taxa, down from 19 in 2010. The IUCN classifies 12 of these as extinct in the wild, 5 as critically endangered and 1 as vulnerable. Field work has confirmed that some Partula species should be re-categorised from Critically Endangered to Extinct in the Wild. There is an overall increase of 9% on the 2010 population with currently 9 EEP participating collections maintaining populations of between 3-13 species. The PhD study conducted by Dr. Ana Gouveia at Imperial College UK was concluded in December. The findings of this thesis, entitled; 'Investigation of the factors affecting the population dynamics of captive Partula snails' has implications for improving husbandry practice and this is currently being assessed. The *in situ* conservation element of the programme continued its focus on preparing for the reintroduction phase to commence, initially on Tahiti. This will include extensive restoration of the surrounding native forest habitat in readiness for a planned field release in the first half of 2013.

The Fregate Beetle EEP programme summary was produced and a 2011 EEP report also circulated. The population was 1197 adult beetles held over the same thirteen institutions as the previous year. This represents a small increase of 2.6% on last year's figure and is due to a large population increase at London Zoo which masks a significant decrease in numbers at other institutions. In the wild this species appears to be



FEN RAFT SPIDER (*DOLOMEDES PLANTARIUS*) © HELEN SMITH



FEN RAFT SPIDER RELEASE © HELEN SMITH

doing relatively well. Fregate island ecology staff published a report indicating that the population is stable and that vegetation changes have not necessarily had an adverse effect. However, the population is limited and fragmented so habitat restoration is identified as a priority conservation measure. A focus goal for this programme remains the development of revised husbandry guidelines.

In the UK and number of participating zoos in collaboration with Natural England reared and released some 2500 fen raft spider *Dolomedes plantarius* spiderlings into suitable sites in the species' Norfolk and Suffolk fen habitat as part of a collaborative rearing and release effort involving 10 collections and Natural England. This programme will be repeated for the next few seasons.

New projects included are the continuing efforts to develop a European programme for the Lord Howe Island stick insect *Dryococelus australis* and colleagues in Budapest continue great efforts in this regard. Also programme work being done includes the development of a conservation programme on four taxa of highly endangered European spiders. Mark Bushell is also spearheading this work and coordinating the project team to identify an action plan and a priority of objectives. Two fresh programme initiatives are for the

European burying beetle *Nicrophorus germanicus* at Artis Royal Zoo and the greater diving beetle *Dytiscus latissimus* coordinated by Besancon in France. Both species are incredibly rare in much of their distribution and have become extirpated from many countries. A feasibility review is being carried out with a view to launching conservation projects for both species in the fullness of time.

There has been collaboration between London Zoo, London Natural History Museum and Vietnamese conservation and research agencies and IUCN to develop an emergency conservation response plan for the recently rediscovered Vietnamese magnolia giant land snail. This very striking snail is only known to occur in the Cat Tien National Park where its recent rediscovery is sure to attract high profile media coverage with associated over-collection pressure from the shell collecting community. The conservation plan includes breeding trials in the UK and in region collaboration with Vietnamese colleagues.

Research elements were also continued again with the nutritional studies of invertebrate live food by TITAG nutritional advisor Dr Andy Beer at Sparsholt College.

We continued to develop the zoo community based mosquito monitoring initiative Project MOSI. This WAZA based initiative <http://www.waza.org/en/site/conservation/climate-change> aims to establish a network of permanent mosquito monitoring sites. This work will confirm baseline species composition, abundance and activity profiles and help clarify the impact of climate change on a large number of mosquito species and their associated disease significance.

Plans to hold an Invertebrate management course have developed somewhat to occur in parallel with the first TITAG mid-year meeting intended to be held in 2014. Within the course we hope to cover many elements both theoretical and practical and reach as many of the key individuals working with terrestrial invertebrates in EAZA.

Proceedings and documents from the meetings as well as studbook reports and RCP guidance can be found on the TAG's webpage on the EAZA website's member area.

Case study: Coming to a fen near you!

UK zoo community works with wide range of partners to help conserve one of the UK's rarest spider species

ICP role: Conservation supplementation (1c) Conservation research (2a) Conservation education (3a)

Background

The UK population of the fen raft spider (*Dolomedes*

plantarius) is restricted to just 3 sites. These three isolated populations are in East Anglia, south east England and in south Wales. The current distribution indicates that the UK range of the fen raft was much more widespread than today and its decline is primarily due to habitat loss.

The Fen Raft Spider has been placed on Natural England's *Species Recovery Programme (SRP)*. The SRP is a partnership, led by Natural England and using techniques devised by fen raft spider specialist Dr Helen Smith and the John Innes Insectory. The SRP also relies on a number of 'foster parent' UK zoos to rear spiders in individual test tubes for several weeks before they are taken to specially prepared introduction sites. Three introductions are currently underway with more being considered.

Successes

- Successful mass rearing protocol developed and disease risk assessment developed (again in collaboration with the zoo community).
- Large number of spiders released into selected fenland sites
- Good levels of public awareness and associated understanding of the importance of the fenland habitat and its remarkable dependant species.

This SRP is a great example of the value of effective cross collaboration of Governmental agencies, academics, wildlife trusts and of course the zoo community. It also provides a good example of what can be achieved with very modest resources.

FISH AND AQUATIC INVERTEBRATE

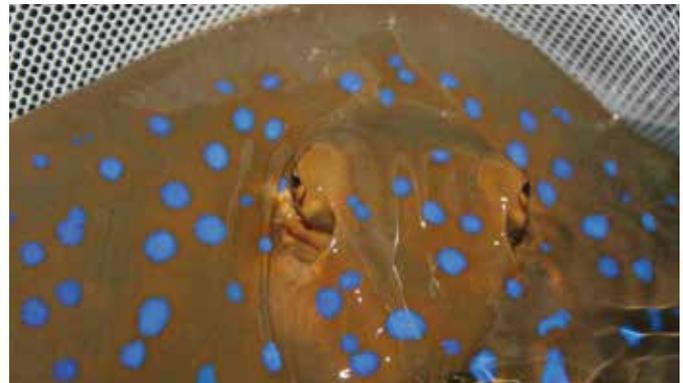
Chair: Brian Zimmerman

Vice Chair: Heather Koldewey, Zoological Society of London, London, United Kingdom

In September 2012 the Two Oceans Aquarium in Cape Town, South Africa hosted the International Aquarium Congress. The congress takes place only every four years and is known as the "Olympics of the Aquarium." This was the first time the meeting took place in Africa and the first time in the Southern Hemisphere. The hugely successful event took place from 9-14 September with the theme "The Global Aquarium Community: Sharing Experiences and Collectively Inspiring Change" and was attended by over 400 delegates from around



FISHNET TEAM RAISING A NET FULL OF ENDANGERED ANATOLIAN PUFFFISH AT LAKE SALDA IN TURKEY © ZSL



BLUE-SPOTTED STINGRAY (*TAENIURA LYMMA*) © OCEAN-RIO DE LISBOA

the world. Several EAZA institutions were represented as well as many EUAC members.

Shortly after that the Fish and Aquatic Invertebrate TAG (FAITAG) held its meeting in Innsbruck during the EAZA Annual Conference. All eight ESB programmes reported good participation with particularly strong husbandry and breeding successes with elasmobranchs. Blue-spotted maskray and Blue-spotted stingray ESBs had seven and five captive births respectively. The White-spotted eagle ray ESB also had good captive breeding success with six animals born in 2012 bringing the total number of captive births to 21 since 2009. These increases bring the percentages of captive bred animals up and therefore represent a strong step towards reducing the dependency on wild caught animals for exhibits. The Blue-spotted maskray ESB now contains 27% captive born animals which is a 100% increase over last year. The Blue-spotted stingray ESB is aiming to acquire new breeding pairs to improve the genetics of the captive population to create greater stability for the species in captivity.

Two of the three shark ESBs reported fewer captive births in 2012 but still had some successes. The Zebra shark ESB had two births among its 36 participants. The Sandbar shark ESB had great breeding success with 234 pups being produced at five different institutions. Marineland in Antibes, France produced an incredible 198 pups with many of these surviving. In addition to captive breeding success many elasmobranch ESBs such as the Horned shark programme have set further objectives such as the development of husbandry manuals and exploring the potential for *in situ* work.

The two seahorse ESBs began trialling the “three-populations” management strategy that was developed in 2011 with the help of the EAZA Population Management Advisory Group (EPMAG). The strategy splits populations into categories that allow institutions to participate on different levels: genetic management, husbandry research

and education/display. This approach is designed to develop strong captive populations and at the same time deal with the issue of disposing of large numbers of surplus individuals from highly fecund species. The seahorse programmes are therefore acting as a trial for any future teleost programmes where individuals cannot be easily identified and data are difficult to collect as a result. Lessons learned from these two programmes will inform the way many fish species are managed by zoos and aquariums in the future.

For zoos and aquariums holding both European seahorse species, husbandry, breeding and rearing success is improving each year. In 2012 a husbandry manual was produced for Short-snouted seahorses by the BIAZA Seahorse Focus Group with input from both EAZA and non-EAZA institutions. This collaborative effort has created a document that will assist aquariums that wish to keep and breed this iconic species.

A new ESB was approved in 2012 for the Sawfish species complex, *Pristis* spp. The programme will be managed by Katy Duke of The Deep in Hull, United Kingdom, with institutional support from Valencia Oceanographic. A key aim of this programme will be to develop breeding strategies to provide captive bred animals and reduce pressure on wild populations.

Case study Fishnet – is a collaborative approach to saving some of the world’s most threatened freshwater fishes. Fishnet brings together EAZA zoos and aquariums, universities, NGOs and private hobbyists in a network to prevent the extinction of neglected species such as the Acigöl pupfish from Turkey. Zoos and aquariums are the last hope for many freshwater species and maintaining populations of these fish is a direct form of conservation especially when coupled with *in situ* study and habitat restoration. Recently Vienna Zoo and the Zoological Society of London teamed up with Faruk Yalcin Zoo in Istanbul, Hacettepe University and the nature NGO Doğa Derneği in Turkey to develop a conservation

plan for five critically endangered killifish. The plan includes rescuing imperilled populations and raising awareness of the plight of these endemic species.

REPTILE

TAG Chair: Ivan Rehak, Zoologicka zahrada Praha, Prague, Czech Republic

TAG Vice Chairs: Fabian Schmidt, Zoo Leipzig, Leipzig, Germany; Henk Zwartepoorte, Diergaarde Blijdorp, Rotterdam, The Netherlands; Thomas Kolpin, Thüringer Zoopark, Erfurt, Germany; Gerardo Garcia, Chester zoo, Chester, United Kingdom; Thomas Wilms, Frankfurt zoo, Frankfurt, Germany; Ian Stephen, ZSL, London, UK

The EAZA Reptile TAG (RTAG) currently maintains eight EEPs and 21 ESBs and coordinates an optimal management of EAZA reptile collections to ensure long-term existence of populations of managed species of chelonians, crocodiles, lizards and snakes. Simultaneously, the RTAG is a platform where EAZA reptile specialists and other professional colleagues, can meet, share and disseminate information to improve husbandry, develop guidelines, protocols and recommendations. In 2012 the Reptile TAG underwent some changes in its structure, including the introduction of the two new vice chairs and increase of TAG members. By the end of the year it consisted of 31 core members and five advisors. Moreover, the TAG, with a great support of the EAZA Executive Office, strongly focused on the future direction of the TAGs work, and formulated a basic version of the Reptile TAG Action Plan for the coming five years. In 2012 an important event for the RTAGs species management programmes, dealing frequently with species of which very significant captive populations are among private individual keepers, was a signature of the Memorandum of Understanding between the European Studbook Foundation (ESF) and EAZA to join forces to maintain more sustainable populations of endangered amphibian and reptile species for the future. The RTAG co-operated closely with the EAZA Amphibian TAG, partners in other regional associations (e.g. AZA, ZAA) and relevant IUCN Specialist Group Task Forces – in particular the Crocodile SG, Iguana SG, Fresh-water Turtle SG, CSG Tomistoma TF, Turtle Conservation Alliance and other initiatives.

Two meetings were held in 2012. The first meeting in April



REPTILE TAG MIDYEAR MEETING IN ROME DURING THE HANDLING AND SEXING SNAKES WORKSHOP © MASSIMILIANO DI GIOVANNI

2012 was hosted by the Bioparco, Rome, Italy. As one of the TAG's goals is to produce an "EAZA Venomous Snakes Protocol", the meeting focused partly on (venomous) snakes. A fruitful discussion to increase safety for venomous snake zoo collections was opened by a presentation from our invited guest speaker, the Executive Director of Serum-Depot Berlin/Europe, about the largest antivenin organization in Europe and about safety precautions for venomous snakes in public institutions. It was followed by an instructive workshop "Handling and sexing snakes". A requested issue discussed in Rome was UV light for reptiles, including the introduction of a complete but simple tool on how to choose and use UV lighting. Another important topic during the midyear meeting was the analyses on participation of EAZA zoos with large herpetological collections, showing that there are a lot of potential additional spaces for reptiles in European zoos which we are currently not using – a challenge for the TAG to utilize this huge potential we have in front of us.

The second TAG meeting was held during the EAZA Annual Conference in Innsbruck, Austria, in September 2012. It included an important closed meeting, held to formulate the earlier mentioned RTAG Action Plan; ambitious, but

realistic and feasible, where a number of important issues (e.g. EEP evaluations, quick population assessments for all the programmes, solutions for programmes which are not working, reptile specific problems regarding record keeping, husbandry and conservation) were discussed in detail to find the best way to achieve the TAGs goals. During the open sessions a great variety of presentations, reports, programme updates, new information and discussions were given. Significant development continued in implementing the EAZA Research Committee recommendations and focusing on important research issues for proper species management as well as for *ex situ* conservation efforts. Thanks to the commitment of programme coordinators, institutions and academic partners, important research projects have been conducted - especially studies involving DNA analyses to clarify a genetic status of managed specimens, which are going to become more and more standard for our species management programmes. In 2012, for instance, the DNA analysis for the turtle *Mauremys annamensis* showed that EAZA population is viable for a repatriation to the wild – an ambitious project, with the EAZA RTAG participation, for the species almost extinct in wild. The new programmes, dealing with species in which potential hybridization is a great problem, like our crocodile ESBs (*Crocodylus mindorensis* and *C. rhombifer*), demonstrated an exemplary use of DNA analysis to get clarity. Some TAG members are active scientists, conducting herpetological research from reptile taxonomy to ethology, ecology and population and conservation biology, and so our meetings and internal communication provide an excellent opportunity to present, share, discuss and consequently utilize relevant research results in another development of our TAG activities and continual improving of husbandry methodologies for EAZA reptile *ex situ* programmes.

RATITE

TAG Chair: Joost Lammers, Vogelpark Avifauna, Alphen aan den Rijn, The Netherlands

TAG Vice Chair: Jo Gregson, Paignton Zoo Environmental Park, Devon, United Kingdom

The EAZA Ratite TAG encompasses all species of palaeognath birds including ostriches, rheas, cassowaries, emus, kiwis and tinamous. The TAG was established in 2008. The mission of this TAG is to facilitate management of captive ratites and



JUVENILE NORTHERN BROWN KIWI (*APTERYX MANTELLI*)

tinamous in EAZA collections and participate in and support relevant conservation efforts.

During 2012 the EAZA Ratite TAG met once in April, at the EAZA Bird TAG Mid-year Meeting at Weltvogelpark Walsrode. During this meeting Maren Frerking of Hanover Zoo, EEP coordinator for the North African ostrich, gave a presentation on collecting eggs from Morocco in 2011, which included the hatching and rearing of chicks. There are around 150 birds in Morocco originally introduced from Chad. A health certificate was issued for the collection of 24 eggs, 6.8.0 were hatched and these birds will form the nucleus of our captive population. It was planned to collect eggs again in 2012 but probably because of a cold dry winter no eggs were found in 2012. Hannover Zoo will try again in 2013 so that EEP numbers can be boosted.

During the same meeting Sara Hallager of the Smithsonian National Zoo and chair of the AZA Ratites TAG gave us an update on AZA Ratite TAG activities and programmes. During the conference the future cooperation between the AZA and EAZA Ratite TAGs was discussed as well as the establishment of the ISB for Southern cassowary of which Nicole LaGrego from San Diego Zoo will be the proposed studbook keeper.

At this moment there are an EEP programme (North African ostrich), two ESB programmes (Southern cassowary and lesser rhea) and one SSP (AZA and EAZA zoos) programme (Northern brown kiwi) within the scope of this TAG.

The personnel problems for the lesser rhea ESB that were mentioned in the 2011 report are now solved and Peter Smallbones from Paignton Zoo Environmental Park should be approved as new studbook keeper for the species early 2013. The first priority for this ESB will be to collect the data, look

at the subspecies issue, and publish the first studbook for the species.

The main news from the Southern cassowary ESB is that there are two new participants that are building brand new facilities to hold cassowaries in 2012: Marlow Bird Park in Germany and Amersfoort Zoo in The Netherlands.

Some exciting news from the Northern brown kiwi SSP is that the 2012 breeding season has been very successful and total population numbers now exceed 50 birds. A ceremony was held in New Zealand in October with a lot of media attention during which kiwi feathers, collected at ZAA, AZA and EAZA zoos, were presented to the Maori community. The majority of the feathers will be used for restoration of historical cloaks and distributed to specialist Maori weavers for special projects. All EAZA participants in the programme have been asked to keep sending the kiwi feathers to Kathleen Brader, SSP coordinator for the kiwi's, so that she will be able to ship some feathers again next year. For additional information please see this video: <http://vimeo.com/50390409>

PENGUIN

TAG Chair: Pierre de Wit, Zoo Emmen, Emmen, The Netherlands

TAG Vice Chair: Jo Elliott, The Royal Zoological Society of Scotland, Edinburgh, United Kingdom

The EAZA Penguin TAG currently oversees eight species of penguins which are managed at some level (EEP, ESB, or Monitor). In the past few years, interest in keeping penguins has significantly increased. In itself this is obviously a promising development. Yet, at the same time, it tends to be the three *Spheniscus* species dominating. Amongst these, both the Humboldt and African share most of the space.

The magellanic penguin population is growing slightly due to breeding, but at the same time birds tend to be sent out of the EAZA population. For that reason, the TAG will investigate the possibility of upgrading the species from a monitoring level to an ESB.

The populations of the remaining species, demanding a different husbandry compared to the *Spheniscus* species, suffer from insufficient breeding for growth and therefore merit a special focus from the TAG. These are the king penguin, the rockhopper penguin, the gentoo penguin and the macaroni penguin.

For the rockhopper penguin population, the issue to split



GENTOO PENGUIN (*PYGOSCELIS PAPUA*). © ROYAL ZOOLOGICAL SOCIETY OF SCOTLAND

the population into two species is pending.

The little blue penguin, currently absent in Europe, will be available from Australia in the more distant future but before releasing any birds to EAZA zoos, first priority will be given by ZAA to the exchange of well-developed husbandry information.

In 2012, Miguel Bueno, Weltvogelpark Walsrode, stepped down as TAG Chair and was succeeded by Pierre de Wit, Zoo Emmen. Simultaneously, his former position as Vice Chair was taken over by Jo Elliott, Royal Zoological Society of Scotland, Edinburgh. At the end of 2012, the position of EEP coordinator for the Humboldt penguin - in former times run by Pierre de Wit - became vacant.

For the King penguin, the position of EEP coordinator changed from Roslin Talbot to Lynda Burrill (both of the Royal Zoological Society of Scotland, Edinburgh) and for the African penguin from Janos Szanthó to Corinne Bos (both of Artis Zoo, Amsterdam).

In cooperation with other regions, an MoU with ALPZA resulted in 2011 in the establishment of a minor population of Humboldt penguins in Latin America. In 2012, the network was increased with the membership of La Aurora Zoo, Guatemala. This zoo is due to receive Humboldt penguins from the EEP in 2013.

Bonds with SANCCOB in the preservation of African penguins have been intensified by endorsing the TAG's willingness to be mentioned as a potential source of funding for SANCCOB.

One TAG meeting was held during 2012, in September at the EAZA conference in Innsbruck. In addition to presentations on managed species, other topics dealt with were the experiences of king penguin breeding and behaviour at Basel Zoo, rockhopper breeding at Vienna Zoo and an analysis of the genetic structure of the colony of African

penguins at Living Coasts, Torquay. The documents and presentations from the meeting can be found on the TAG's workspace at the EAZA website member area.

Future plans for 2013 of the TAG comprise:

- to revise the current RCP document
- to update the EAZA Penguin TAG webpage
- to revise the husbandry guidelines for *Spheniscus* species and to develop those for the other species
- to compile a wish-list of priority research for the more vulnerable species in the RCP
- to formulate a TAG mission statement
- to develop an integrated conservation strategy
- to link up in the upcoming International Penguin Conference in September 2013 in Bristol
- to strengthen the bonds with counterparts in other regions
- to hold full one TAG meeting during EAZA conference 2013 at Edinburgh Zoo

Case study

The Humboldt penguin is an endemic species in Chile and Peru. In Peru, its largest colony occurs at the peninsula of Punta San Juan. Here, guano deposits permit the birds to breed. For more than a century, however, this very guano has also been harvested as fertilizer. Before 1998 this activity was performed in such a way that local fauna was disturbed and uncontrolled damage to its habitat was inflicted.

By 1998, however, the Punta San Juan project was asked to advise the public corporation that mines the guano deposits on the timing, location, and manner in which to carry out guano harvesting at Punta San Juan and to provide observers to monitor the harvest so that the disturbance to the local fauna would be minimized. The PSJ project is the key project involved in the preservation of the site.



GUANO HARVEST AT PUNTA SAN JUAN, PERU 2012. © LUZ LANNING / ZOO EMMEN

In 2001, the first successful controlled harvest with a volunteer observer program took place. As once in five years sufficient guano has accumulated for harvesting, another controlled harvest took place in 2007. As a follow up, the third one took place in 2012 and this was also for the first time that observers were recruited from EAZA zoos participating in the EEP. For EAZA, the project was coordinated by Alex Waier, SSP coordinator for the species.

PELECANIFORMES

TAG Chair: Bjarne Klausen, Odense Zoo, Odense, Denmark

The EAZA Pelecaniformes TAG was established on 10 September 1999, and just prior to that had its first informal TAG meeting on 8 September. The species that fall under the remit of this TAG are not only those of the order Pelecaniformes, but also of the orders Gaviiformes, Podicipediformes and Procellariiformes. According to this taxonomy the name Pelecaniformes does not adequately cover the remit of the TAG, but the species that the TAG predominantly focuses on are included in the order Pelecaniformes.

There are currently four programmes under the remit of the Pelecaniformes TAG: two EEPs and two ESBs. In 2011 an EEP evaluation of the Dalmatian Pelican was performed. The evaluation revealed issues that the coordinator during 2012 improved significantly, including producing a studbook and improving the dataset. This has since been done and a studbook has been submitted to ISIS. Some of the problems to be solved in the EEP include the fact that a very high proportion of the birds originate from one breeding institution. Parent identification is also a challenge that the



EASTERN WHITE PELICANS (*PELECANUS ONOCROTALUS*)



EEP and TAG will work to solve in the future.

For the little pied cormorants, which were imported into EAZA in 2005, an ESB was established at that time. Since then eight institutions currently keep them, but only two institutions breed them. It is not a species with special demands in terms of husbandry, so the TAG expects this number to increase. The little pied cormorant was imported to the TAG because the TAG wanted to use a small freshwater species as a model for the European pygmy cormorant.

Spot billed pelican are increasingly being imported, so Roman Horsky from Zoo Zlin is monitoring this species for the TAG. There are 3 institutions within EAZA keeping spot billed pelican: Zlin, Prague and Tierpark Berlin. It is expected that more pelicans will be imported in the future and the focus is on optimising husbandry and stabilising breeding.

The TAG chair wrote a paper for *Zooquaria* (issue 77) describing a new aviary for flamingoes and pink-backed pelicans in Odense Zoo. Hopefully this article will encourage more zoos to invest in aviaries and keep their pelicans fully winged. The pelicans have shown that they are very agile and seem to enjoy flying around in the big aviary.

CICONIIFORMES AND PHOENICOPTERIFORMES

TAG Chair: Cathy King, Weltvogelpark Walsrode, Walsrode, Germany

TAG Vice Chair: Andrea Bracko, Zooloski vrt Zagreb, Zagreb, Croatia

Twenty years after its formation, the Ciconiiformes and Phoenicopteriformes TAG was pleased to unveil its perfect new logo, designed by Igor Ivanek of Zagreb Zoo, during the first of its two meetings in 2012. Cooperation with the IUCN-SSC and Wetlands International Flamingo Specialist Group (FSG) was a focus of the first meeting, with Rebecca Lee, FSG Chair, giving a presentation on integration of *in situ* and *ex situ* efforts. The TAG has a close working relationship with the FSG; the TAG Chair is also the FSG *Ex situ* European Coordinator. Additionally, Kitty Ludwig and Steven van den Heuvel, Van Hall Larenstein students, presented results on their pilot-project to establish a database for finding information on existing large aviaries when planning one. Several EAZA bird TAGs have expressed the need for zoos to hold birds in aviaries more often, and it is hoped that having information on building and using aviaries more easily available will encourage zoos to do so. Ironically, the information that people want the most: product names, suppliers and manufacturers; is also the most difficult to collect, and we encourage zoos to have this information easily accessible. Zagreb Zoo is further developing an online version of the database.

It was a year of change in designated persons for the 22 breeding programmes managed as EEPs, ESBs and Monitor by Persons (MPs). The vacancy for the Hamerkop (*Scopus umbretta*) ESB keeper was filled by Ross Snipp (Flamingo Land Resort), the Puna ibis (*Plegadis ridgewayi*) MP vacancy was filled by Tjerk ter Meulen (GaiaZOO) and the African spoonbill (*Platalea alba*) MP vacancy filled by Johnpaul Houston, (Blackpool Zoo). Two species previously designated



SHOEBILL (*BALAENICEPS REX*), MABAMBA BAY, UGANDA © SERGEY DERELIEV (UNEP/AEWA)



NORTHERN BALD IBIS (*GERONTICUS EREMITA*) PREENING © CHRISTIANE BOEHM

as “Monitor by TAG” in the regional collection plan were upgraded to MPs: the Boat-billed heron (*Cochlearius cochlearius*) with Arnaud Dazord (La Bourbansais Zoo) as the species representative and the White stork (*Ciconia ciconia*), with Agnieszka Cwjowska (Miejski Ogród Zoologiczny) as its champion. Dionne Slagter (Artis Royal Zoo) has replaced Mariano Cuadrado (Zoobotanico de Jerez) as the Eurasian spoonbill (*Platalea l. leucorodia*) MP representative, and Koen Peters (Zoo Parc Overloon) has replaced Sabine Boucherie (also Overloon) as the Straw-necked ibis (*Threskiornis spinicollis*) MP representative. Species representatives had the opportunity to report on their programs during the second TAG meeting, highlighting relevant issues. Information was also presented on the EAZA leg band service that the TAG helped the EAZA Office develop in 2000 to have a central location for purchasing bands that allow identification of individual birds from a distance. As of September 2012 a total of 34,209 bands had been ordered, averaging 2,800 per year. Flamingo leg bands are the most commonly ordered, German zoos have bought the most leg bands per country, and red, green and blue bands are the most popular colours. Approximately half of the EAZA member institutions have ordered leg bands.

The Oriental white stork EEP was evaluated, and deemed a “good” program. A number of males are being sent to Europe from Japan, as the EEP population is strongly female-skewed. Husbandry surveys were carried out for both Saddlebilled storks and Eurasian spoonbills in 2012, and a study on intraspecific killings of black storks was initiated. Methodology is similar to that for investigating intraspecific killings in marabou storks, a topic now being researched by AZA and EAZA together. Several papers were published on preliminary investigations of foot lesions in flamingos in EAZA zoos, setting the stage for a cooperative study by EAZA and AZA. Cooperation with AZA also involved sending of 16 rehabilitated white storks to the US by Warsaw Zoo for the

AZA managed program. The TAG will be working further on placement of rehabilitated white storks. The TAG was represented in an AEWA shoebill conservation action plan meeting in Entebbe, Uganda, and will work further towards global captive management of this iconic bird. Articles on shoebill husbandry and marabou training were published in the International Zoo Yearbook in 2012, with TAG involvement.

Case study Northern Bald ibis (NBI)

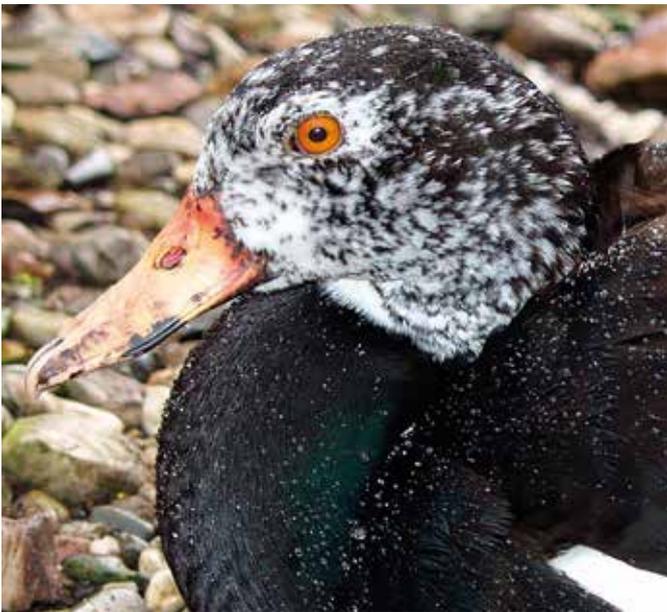
The NBI EEP population, numbering 1200 birds and 70 colonies, has a well-balanced age and sex ratio; breeding management is now needed as the carrying capacity has been reached.

The *in situ* western (Morocco) population of NBI numbers ca. 500 birds including ca. 110 nesting pairs. Habitat degradation and hot, dry summers cause lower numbers of fledglings. New management and satellite tagging programmes are on-going.

The Eastern population, breeding in Syria and migrating along the Arabian Peninsula to winter in Ethiopia, numbered only four birds in 2012. A semi-wild eastern population of ca. 150 birds exists in Birecik, Turkey. Experimental reintroduction trials have been undertaken in Spain and Austria/Germany/Italy, and are planned for Algeria.

In November 2012 the AEWA (The Agreement on the Conservation of African-Eurasian Migratory Waterbirds, also known as AEWA or African-Eurasian Waterbird Agreement)

NBI International Working Group met in Jazan, Saudi Arabia. Hosted and sponsored by the Saudi Wildlife Authority, Jazan University, BirdLife International and RSPB, the meeting was attended by 23 participants. The major outcome of the meeting was a revision of the AEWA SSAP (Single Species Action Plan) for the Northern bald ibis.



WHITE-WINGED WOOD DUCK (*CAIRINA SCUTULATA*) © KÖLNER ZOO

WATERFOWL

Chair: Bernd Marcordes, Kölner Zoo AG, Cologne, Germany

Vice Chair: David Jeggo, Durrell Wildlife Conservation Trust, Jersey, United Kingdom

The EAZA Waterfowl TAG was established at the EAZA conference in Prague 2001 and includes all Anseriformes species – currently 150 species.

The first European Regional Collection Plan (RCP) was published in 2002. This plan was revised as and when required. A second RCP was developed in 2008 with the use of a revised decision flowchart. Attention has been focused on IUCN listed species. Currently the Waterfowl TAG oversees 4 managed breeding programmes: Meller's duck (*Anas melleri*) EEP, an 'international studbook' for Madagascar teal (*Anas bernieri*) and, as newly established in 2012, an ESB for white-winged woodduck (*Cairina scutulata*) and Baer's pochard (*Aythya baeri*) - especially for the latter an *ex situ* programme deemed to be vital for this species given its status in the wild according to BirdLife International (Collar, N. Birding Asia, 2012). The TAG is working on the preparations for the establishment of an ESB for the Scaly-sided merganser (*Mergus squamatus*) in 2013. Nine species are monitored by different persons, twelve other IUCN red listed species are monitored by the TAG.

The number of EAZA institutions keeping Waterfowl is slowly growing, as well as the total number of Anseriformes kept in EAZA. However the breeding of Anseriformes in

EAZA institutions is still very limited. Most institutions regularly acquire birds from the private sector. The breeding success in EAZA institutions can't guarantee sustainable populations for most Anseriformes species yet. The newest discussions about pinioning of birds in different EU countries won't influence this trend in a positive way.

The TAG had two meetings during 2012, the first during the Bird TAGs Mid-year Meeting in Weltvogelpark Walsrode, and the second one during the annual conference in Innsbruck. During the first meeting important updates were presented by Glyn Young (Durrell Wildlife Conservation Trust) about the developments regarding the Madagascar pochard (*Aythya innotata*) (building a safety net population in captivity in Madagascar), the reintroduction project of the lesser white-fronted geese (*Anser erythorpus*) in Sweden and an overall presentation of Baz Hughes (WWT Slimbridge) about 'saving threatened waterbirds'.

The next Waterfowl TAG meeting will be held at the Bird TAGs Mid-year Meeting 2013 at Parc Des Oiseaux, Villars les Dombes.

FALCONIFORMES AND OWLS

TAG Chair: Shmulik Yedvab, The Tisch Family Zoological Gardens, Jerusalem, Israel

TAG Vice Chair for Falconiformes: Mark Habben, Zoological Society of London, London, United Kingdom

TAG Vice Chair for Owls: Barbara Mihelic, Zivalski vrt Ljubljana, Ljubljana, Slovenia

2012 was a year of progress and changes. The ESB of the Egyptian vulture was upgraded to an EEP managed by Antonin Vaidl from Praha Zoo. A Ruppell's vulture ESB was established and is now managed by Yitzhak Yadid from Rome Zoo, and an Imperial eagle ESB was established under the coordination of Jan Hanel from Liberec Zoo.

The TAG held two meetings during 2012: a mid-year TAG meeting held in Weltvogelpark Walsrode, and a meeting at the EAZA Annual Conference in Innsbruck. These fruitful meetings emphasized the need for an accurate and up to date Regional Collection Plan (RCP). The 2008 RCP forecasted the need to establish breeding programs for African vultures. Since 2008, their threatened status according to IUCN Red List has in most cases been upgraded to Endangered.

During the Innsbruck meeting, Antwerp Zoo presented a



BONELLI'S EAGLE (*AQUILA FASCIATA*) © YOAV KAMARAT



EURASIAN GRIFFON VULTURES (*GYPS FULVUS*) IN 'FEEDING' CAGE © SHMULIK YEDVAB

summary of the research which was conducted during the past years in regard to the Eurasian black vulture population, and again it was clearly demonstrated that it is highly important to continue the research, expand our knowledge and by that improve our breeding programme results.

For the first time in at least a decade an extensive presentation of the very successful Bearded vulture EEP program was presented by DVM Hans Frey- the EEP coordinator. This program was one of the first EEPs and is unique. It is lead by a team of none-EAZA partners and is very active in ongoing re-introduction projects. Although some elements of the EEP mechanism are missing it was agreed that the cooperation with field researchers, breeding facilities and EAZA zoos is very fruitful. It was agreed to bridge the gap of the needed EEP's procedures and continue the mainframe work of this important programme.

The TAG is still changing and developing. A priority is the need to update the RCP based on the most recent population trends of the different falconiformes populations. An action plan is still needed in regard to two "hot" topics:

- 1 Bird demonstrations and the TAG mission statement to this topic; and,
- 2 Combining the Owls into the TAG with all the relevant

action plans related to this group.

Shmulik Yedvab, Tisch Family Zoological Gardens, stepped down as TAG Chair at the end of 2012, and Mark Habben, Zoological Society of London, took over as chair. The TAG wishes him all the best for the sake of these beautiful birds of prey!

CRACID

TAG Chair: Geer Scheres, Weltvogelpark Walsrode, Walsrode, Germany

The EAZA Cracid TAG's highlight of 2012 was the EAZA Bird TAGs Mid-Year Meeting held 18 -22 April in Weltvogelpark Walsrode in Germany. The meeting had a strong cracid emphasis - particularly regarding Brazilian cracids, as seven people from Brazil attended. Their presentations focussed on the Alagoas curassow (*Pauxi mitu*) and red-billed curassow (*Crax blumenbachii*), for which there is an EEP. With many stakeholders present, there was a good opportunity for an informal closed meeting to discuss monitoring of reintroduced populations and further conservation of red-billed curassows as well. As a consequence of reintroduction efforts the red-billed curassow is one of only 18 species BirdLife reported to be downlisted on the IUCN Red List. The now extinct in the wild Alagoas curassow (*Pauxi mitu*) is being bred at Crax Brazil; the population included 39 males and 36 females at the time of the presentation. With only three founders and past hybridization in the captive population there certainly are some challenges in maximizing genetic diversity of the captive population.

Weltvogelpark Walsrode helped support the the XIII Cracid Symposium, "Reproduction and Conservation Ex-situ", organized by Juan Cornejo, Co-chair of the Cracid Group of the Galliformes Specialist Group, in June 2012. The objectives of the symposium were to provide a forum for discussion and exchange of experiences among zoos and breeding centres involved in the *ex situ* conservation of cracids, while stoking the interest of the ALPZA zoos in cracid conservation. It was agreed to create a shared library of DNA primers for facilitating the analysis of kinship in captive populations, work on a manual for cracid release that summarises the experiences of existing programs, and to publish the meeting proceedings as a special issue of Papéis Avulsos of Zoologia.

The successful rearing of a horned guan (*Oreophais derbianus*), for which there is an EEP program, at the Cracid Conservation and Breeding Center (CBCC) in Zutendaal,



HORNED GUAN (*OREOPHISIS DERBIANUS*)

Belgium was considered a triumph; this species is difficult to breed successfully in captivity, and it is only found in Walsrode and CBCC in Europe. Small population size is a problem for other cracid breeding programs in Europe as well: as with all Galliformes, zoos are reducing the number of species and individuals kept. For example, there are only 21 Nocturnal curassow (*Nothocrax urumutum*) in EAZA facilities, and none are younger than 5 years of age, according to Joost Lammers, Vogelpark Avifauna, who monitors this population. New blood lines are needed to increase population viability, and the same is true for the black-fronted piping guan (*Pipile jacutinga*) monitored by Geer Scheres, Weltvogelpark Walsrode. The EAZA Cracid TAG and Galliformes TAG will be joining forces to try to increase EAZA zoo commitment to working with these exceptional birds.

Case study

Captive management of the critically endangered blue-billed curassow (*Crax alberti*), endemic to Colombia, is making great strides. Chris Holmes, international studbook keeper and also the AZA Galliformes Chair, travelled to Colombia



JUVENILE BLUE-BILLED CURASSOW (*CRAX ALBERTI*)

in August 2012 for a workshop in *ex situ* breeding and conservation of this species. Both AZA and EAZA will be supporting the Colombian Zoo Association (ACOPAZOA) in its efforts to get a breeding program off the ground for this curassow by raising funds for equipment and training zoo staff in advanced cracid husbandry. This is the first species managed cooperatively in Colombia; and Miguel Bacca has been appointed regional coordinator. While there are a number of potential founders in Colombian zoos most are confiscated birds that were held as pets; imprinting and aggressiveness of males are challenges in breeding them.

GALLIFORMES

TAG Chair: Jan Dams, Weltvogelpark Walsrode, Walsrode, Germany

TAG Vice Chair: Ludo Pinceel, The World Pheasant Association, Hampshire, United Kingdom

During the EAZA Bird TAGs Mid-year Meeting in Walsrode, the Galliformes TAG had two closed meetings: one focussing on the Edwards's pheasant, and the other on Galliformes in general. The presence of non-EAZA attendants, including Nigel Collar (Birdlife International), Chris Holmes (Houston Zoo, AZA Galliformes TAG Chair), Edell R. Harrison (Sacramento Zoo, AZA Galliformes TAG vice Chair), Roland Wirth (ZGAP) and several WPA representatives helped to make these meetings very constructive. In the interests of further collaboration with external parties, both the TAG Chair and Vice Chair are members of the IUCN Galliformes Specialist Group and maintain contact with the co-chairs and other members of this group on a regular basis. The vice chair is also chairman of the European Conservation Breeding Group (ECBG) which was formed by WPA to promote interest in keeping game birds for conservation purposes.

The Galliformes TAG had an open meeting during the EAZA annual conference in Innsbruck. Tomáš Peš, Zoo Plzen, gave an update on the situation of *Phasianus* sp. and ssp. in the wild and in captivity; Tomáš will monitor these species for the Galliformes TAG. The need for additional suitable enclosures and funding to ensure that the captive population of the critically threatened and possibly extinct in the wild Edwards's pheasant is optimally preserved, was discussed; the TAG was also able to make a plea for engagement by EAZA members in saving this species during a plenary talk on Southeast Asian birds. During a closed meeting in Innsbruck for the Congo



KORI BUSTARD (*ARDEOTIS KORI*)

peafowl EEP Peter Galbusera (Antwerp Zoo) explained how inbreeding in the captive population is negatively affecting reproductive traits. New bloodlines are necessary to increase population viability; however there are many obstacles to overcome to import individuals or eggs.

The EAZA Galliformes TAG is concerned about the dramatic decline in spaces for Galliformes within EAZA institutions; the last Galliformes RCP survey indicated that 60% of the recommended species had declined in population size by more than 50%. This means there are insufficient spaces for Galliformes to house the numbers of birds needed for important conservation breeding programmes. This is why the EAZA Galliformes TAG would very much like to change our zoos' approach towards Galliformes, and help them to remember why the Galliformes were historically very popular birds to keep: they are beautiful, usually fairly hardy, educationally interesting and they also have a high conservation value, as almost one quarter of all pheasant species is threatened. The TAG strongly urges EAZA member



KAGU (*RHYNOCHETOS JUBATUS*) ON NEW CALEDONIA

to invest in off-exhibit bird breeding facilities and to have a higher commitment towards the species we keep.

Case study

The main focus of the EAZA Galliformes TAG in 2012 was the Edwards's pheasant (*Lophura edwardsi*). Only two sightings of this pheasant have occurred since 2000, and failure to record any by a camera trap survey in 2011 made it clear that urgent action is needed to help this species. Tomáš Kapic from Prague Zoo was appointed as the new EEP coordinator taking over from Alain Hennache whom we want to thank again for doing a superb job as the Edwards's pheasant EEP coordinator as well as ISB keeper. Alain is still helping to find the best strategy for establishing a genetically optimal, viable captive population of Edwards's pheasants. The first step would be to evaluate the genetic variation in a large sampling of birds in the different captive populations (European, American, Japanese and Vietnamese). If there is genetic variation among individuals, purity of interesting birds could be analyzed. These individuals would be pseudo founders of a captive population that can be a source for reintroduction when there is an appropriate situation for this. The Galliformes TAG is working closely with AZA Galliformes TAG, WPA, ECBG, ZGAP and the IUCN Galliformes Specialist Group to reach this goal.

GRUIFORMES

TAG Chair: Geer Scheres, Weltvogelpark Walsrode, Walsrode, Germany

TAG Vice Chair: Rob Belterman, Diergaard Blijdorp, Rotterdam, The Netherlands

The Gruiformes TAG had the honour of holding the final session during the EAZA Bird TAGs Mid-year Meeting in Weltvogelpark Walsrode, 18-22 April, and several excellent presentations were given. Claire Mirande (International Crane Foundation; Baraboo, USA) reviewed the history and lessons learned in conservation activities for Whooping cranes (*Grus americanai*) and Siberian cranes (*Leucogeranus leucogeranus*). Luud Geerlings (Cracid Captive Breeding Center, CBCC, Zutendaal) reported on a workshop that took place in Bharatapur, India to discuss feasibility of establishing a semi-captive population of Siberian cranes in Keoladeo National Park. The central Siberian crane population wintered in this park; the major cause of its disappearance is believed to be hunting during migration. The EEP has

been asked to provide birds and CBCC to help in capacity building for this project, should it become a reality. The Indian government's Minister of Environment and Forestry has asked WWF India and WII to further research the possibilities.

Sara Hallager, the International Kori Bustard *Ardeotis kori* Studbook keeper and AZA Kori bustard programme manager (Smithsonian National Zoological Park, Washington DC, USA), discussed husbandry issues and the current status of the AZA and EAZA population. The EAZA population consists of only 3.13.0 birds, with two of the males of advanced age, though not yet post-reproductive. Sara suggested several possibilities for managing the EAZA population which need to be discussed and a decision made.

Luud Geerlings, coordinator of the Kagu (*Rhynochetos jubatus*) EEP, showed that the European Kagu population has the opposite skewed sex-ratio problem, with 25.10.0 birds. Michael Merker from Halle Zoo demonstrated that parent-rearing Grey-winged trumpeters (*Psophia crepitans*) is not impossible, although it has generally been found to be difficult.

Evaluation was completed in 2012 for three EEPs: White-naped crane (*Grus vipio*), the Red crowned-crane (*Grus japonensis*) and the Siberian crane, and all three received positive recommendations overall. The Siberian crane EEP coordinator Rob Belterman is working closely with the international studbook keeper to maintain good records for that species. Rob has now coordinated the Red-crowned crane EEP for 25 years, since its inception in 1987. He can be proud that it is one of the few EAZA programs that is currently considered to be viable over the long term. Ruben Holland Zoologischer Garten Leipzig, the relatively new White-naped crane EEP coordinator, has been making a valiant attempt to solve as many of the dauntingly ubiquitous unknowns as possible in the European studbook. Nick Dowling (Edinburgh Zoo) has found that management of the Western African crowned crane (*Balearica pavonina*) ESB is hampered by a similar problem, and it is hoped that all participants in these programmes will do their best to help these programme managers in their detective work. In June 2012 a delegation headed by Almudena Lorenzo, Director of Parc Zoologique & Forestier Nouméa, New Caledonia, visited Weltvogelpark Walsrode and had a meeting with the Gruiformes TAG Chair and the EEP coordinator about future cooperation and mutual assistance in breeding and conservation of the Kagu.

Case study

The TAG became involved in an effort to establish a captive research population of the subspecies *Grus grus archibaldi*

in Turkey. This crane, which differs from the nominate form of the common crane by lacking a red crown, is only found in a small area in eastern Turkey, northern Iran, Armenia and Georgia. Omar Custodio, trained in crane and cracid husbandry at CBCC, travelled to Turkey to help set up artificial incubation and hand-rearing facilities at the Faruk Yalcin Zoo near Istanbul, and to assist in egg collection. The primary bird keeper at Faruk Yalcin Zoo, Elçin Goktas, spent some time in Weltvogelpark Walsrode learning relevant avicultural skills. Only a few pairs of this subspecies were found nesting in Turkey in 2012, and it was decided to wait until there is a better understanding of the population before proceeding further in developing a captive population.

CHARADRIIFORMES

TAG Chair: Dionne Slagter, Artis Royal Zoo, Amsterdam, The Netherlands

TAG Vice Chair: Kirsi Pynnönen-Oudman, Helsinki Zoo, Helsinki, Finland

At the beginning of 2012 the previous chair of the EAZA Charadriiformes TAG stepped down to the position of Vice Chair, and Dionne Slagter, Artis Royal Zoo, assumed the role of Chair.

The TAG oversees a variety of bird species including waders, gulls, terns and alcids. Only one ESB, for the Inca tern (*Larosterna inca*), falls under the remit of the TAG. A brainstorming session will be held at the beginning of 2013 to tackle the problems faced in the Inca tern population: genetics and colony birds - how do you make recommendations if relationships within the population are unknown?

One of the first actions of the TAG in 2012 was the



BIRD HOUSE, ARTIS ZOO, AMSTERDAM



INCA TERN (*LAROSTERNA INCA*) IN THE BIRDHOUSE IN AMSTERDAM

establishment of a Seabird working group. At the beginning of the year the working group was formed and a mission statement was put to paper: 'the group is formed to raise awareness and improve the husbandry of seabirds in EAZA zoos.'

One of their tasks is to update the TAG on wild status and numbers within EAZA and AZA collections of the gulls, terns, auks, gannets and sea ducks. Based on that data, a 5 year collection plan will be built. For the recommended species husbandry guidelines should be produced. Husbandry workshops will also be organised to improve the husbandry standards for this group of birds. Another aim is to form an EAZA oiled seabird response team.

An article entitled 'Seabird conservation status, threats and priority actions: a global assessment' was published by Birdlife International in *Bird Conservation International* (2012) 22:1-34. © BirdLife International, 2012. It confirms the concern and action we need to take to start managing captive populations better, as all 346 seabird species are more threatened than other comparable groups of birds and their status has deteriorated faster over recent decades.

During the Bird TAGs Mid-year Meeting in Weltvogelpark Walsrode in April 2012, the group presented to EAZA bird colleague's and laid out the next steps the different champions in the Working Group are starting to take with the missions they have adopted. The uniqueness of this group is that it goes further than just Charadriiformes. It overlaps other TAGs and bird species that have similar husbandry issues or breeding needs (such as gannets and sea ducks).

In a closed meeting held with the Seabird working group members at the annual conference in Innsbruck in September 2012, big steps were made regarding the gull species and the alcids.

The champions presented population sizes within EAZA,

conservation status, threats and challenges in captivity. This resulted in updating the RCP for those species, research on husbandry issues being made more clear and contact being made with AZA and ALPZA colleagues to compare population size and exchange husbandry guidelines and issues for these species.

It was decided that both Atlantic puffin subspecies in EAZA zoo's should be managed separately at ESB level. The TAG is currently working on a proposal that can be forwarded to the EEP Committee for official approval. An available and wanted list will be compiled as well to see what breeding and housing capacity is in EAZA zoo's regarding puffins.

The RCP update for the terns, gulls and alcids is nearly finished and will be published at the beginning of 2013 on the member area of the EAZA website.

Because of great success and steps made with the Seabird working group for such a wide span of species at the same time, the plan is to start a similar structure with experts on waders in 2013. During the mid-year meeting in Walsrode, Baz Hughes (WWT) updated the attendees about their efforts to establish a captive population for the spoon-billed sandpiper, a major operation for this highly threatened wader species.

PIGEON AND DOVE

TAG Chair: Duncan Bolton, Paignton Zoo Environmental Park, Devon, United Kingdom
TAG Vice chair: Jo Gregson, Paignton Zoo Environmental Park, Devon, United Kingdom

The EAZA Pigeon and Dove TAG had an open meeting during the EAZA Annual Conference in Innsbruck in September 2012. The audience was updated on the status of the new Regional Collection Plan (RCP). The plan was to publish the RCP before the end of the year but unfortunately this proved unrealistic. The RCP will now be published by mid-March 2013.

The Socorro dove EEP elected a new species committee and the Mauritius pink pigeon EEP is working on formalising the new coordinator position. The difficulties relating to the Mauritius pink pigeon EEP and its dwindling population size cause concern over the future of this species in EAZA collections. The TAG has encouraged the EEP to become more proactive in producing recommendations and participants to increase efforts in breeding this species.

There is a strong possibility for a number of birds to be imported to the EAZA region from AZA collections and a number of suitable birds have been identified for this. The wild population of pink pigeons is lacking in the genetic representation we believe to exist in the EEP population and there is a need to produce sufficient birds to return to the wild, without compromising the future of the EEP population further.

One of the issues for 2012 was the lack of volunteers to take on the ESB keeper role for the three crowned pigeon species for over a year since Joeke Nijboer, Diergaarde Blijdorp, had to give these up. Luckily Calviac stepped up to take over the management of the Victoria crowned pigeon (*Goura victoria*) and a student will update the data for the remaining two species, which once updated will be taken on by another EAZA member.

PARROT

TAG Chair: Roger Wilkinson, Chester Zoo, Chester, United Kingdom

Sub-group Leader (Old World Parrots): Bernd Marcordes, Zoologischer Garten Köln, Cologne, Germany

Sub-group Leader (New World Parrots): Simon Brusland-Jensen, Loro Parque, Tenerife, Canary Islands, Spain

The EAZA Parrot TAG was established at the ninth EEP Conference held in Edinburgh in July 1992 and has the remit of including all parrot species – currently held to be 374.

The first European Regional Collection Plan (RCP) was published in 1998/99 and a global overview of captive management programmes for parrots followed in 2000. A second RCP was developed in June 2008 with the use of a revised decision flowchart. Attention has been focused on the larger parrots and especially the more popular Cockatoos, Macaws and Amazon Parrots. Currently the Parrot TAG oversees 24 managed breeding programmes: 12 as EEPs and 12 as ESBs.

Except for the Red-fronted Macaw EEP (the evaluation of which is currently in progress having only recently been taken on by Jo Elliott of Edinburgh Zoo) all our 12 current Parrot EEP programmes have now been evaluated. Three EEP programmes required re-evaluation - these were the Red-browed Amazon (*Amazona rhodocorytha*) EEP, Blue-throated Macaw (*Ara glaucogularis*) EEP and the Ecuador Amazon (*Amazona autumnalis lilacina*) EEP. Both the Red-

browed Amazon and Blue-throated Macaw re-evaluations are currently on hold. The Ecuador Amazon was re-evaluated in 2012 – this was accepted by the EEP Committee with a request that we reevaluate in 2014.

Over the last two annual meetings we agreed to break this large TAG down into manageable sections and to share the workload by having two Sub-group Leaders – one for Old World parrots and one for New World parrots. Bernd Marcordes, Zoologischer Garten Köln, stepped up to the challenge in 2010 in agreeing to assist with the Old World parrots and at our 2012 meeting Simon Jensen-Brusland, Loro Parque, agreed to assist with the New World parrots.

Case study: DNA Markers for subspecies in Palm cockatoo EEP

An excellent case study on solving the problems presented by subspecies within an EEP is that conducted for the Palm cockatoo *Probosciger aterimmus* at Beauval by Dr Hélène Bussière and Dr Baptiste Mulot under the enthusiastic guidance of the EEP Coordinator Eric Bairrão Ruivo. The aims of the study at Beauval were: a) to genotype all bird in the EEP using the mtDNA marker; b) to find nuclear DNA markers to identify possible hybrids; and, c) investigate the correlation between genotype and morphology. Requests were sent to each EEP participant to send a blood sample and complete a questionnaire with presumed subspecies determination and morphological data for each individual.

Morphology mostly correlated with genotype in that, as anticipated, those with *goliath* haplotypes were usually larger than those with *aterrimus*. However that was not always the case, showing the importance of also determining the genotype. Four cockatoos were found to have a genotype and/or morphology that did not match the prior subspecies determinations and recommendations were made revising their subspecies. A further five cockatoos bred in the EEP were confirmed to be hybrids. The decision was made with this information to have separate programmes within the EEP for *aterrimus* and *goliath* and not to hybridise these populations.

Case study: Ecuador Amazon parrot EEP– First steps to the field.

A two week investigatory field trip was undertaken in November 2012 by the EEP Ecuador Amazon Coordinator Dr. Mark Pilgrim and his technical assistant Becca Biddle to the coastal mangrove and dry tropical forest habitats of the Ecuador Amazon parrot. The Ecuador Amazon Parrot is categorised by the IUCN as Endangered and previous research suggests there

may be as few as 400-600 individuals in the wild. During seven days in the field a total of 178 Ecuador amazons were seen within three of the four identified subpopulations. However, the extent of habitat loss was clearly visible (predominantly as a result of the shrimp farming industry and conversion of forests to cocoa / banana plantations) as was the need to protect the dry tropical forests where the parrots feed. To help tackle this the two met with Fundacion Pro-Bosque, a local Ecuadorian conservation foundation, who with help of Chester Zoo funding will from July 2013 be initiating a monitoring and research programme on the Ecuador Amazon parrot whilst continuing their existing park guard programme. The results of this research will help gain further understanding of what steps can be taken to ensure the future survival of this species in the wild.

HORNBILL

TAG Chair: Koen Brouwer, Bioparc Valencia, Valencia, Spain

The EAZA Hornbill TAG conducted two important meetings in 2012. TAG members gathered in Chester Zoo on 12 June, and an open meeting was conducted on 28 September in Innsbruck. A highlight of the latter meeting was a presentation by Lucy Kemp of the Mabula Southern ground hornbill conservation project in South Africa; ZooParc de Beauval is leading support of this project by EAZA zoos and Baptiste Mulot or Roger Wilkinson, Vice Chair of the Hornbill TAG, can be contacted for more information.

Cathy King, Weltvogelpark Walsrode, is replacing Blanka Dolinar, Ljubljana Zoo, as ESB coordinator for Wreathed hornbills (*Rhyticeros undulatus*) and Papuan wreathed hornbills (*Rhyticeros plicatus*). Intensive management of both species in European zoos is needed; breeding results for Rhyticeros species, like most other Asian hornbills, have been poor. The Von der Decken's hornbill (*Tockus d. deckeni*) ESB formerly managed by Cathy King was transferred to Daniel Roth of Boras Zoo. Cathy King and Blanka Dolinar are both thanked for their many hours of voluntary labor and enthusiasm in managing their ESBs.

Husbandry guidelines

The TAG strives to provide EAZA zoos with as much guidance as possible to raise hornbill husbandry standards and breeding success. The EAZA Hornbill management and husbandry guidelines, published ten years ago, are due for an update. Responsibilities to tackle this project have been delegated



RHINOCEROS HORNBILL (*BUCEROS RHINOCEROS*) CHICK IN NEST AT PRAGUE ZOO © PRAGUE ZOO

among TAG members and the revision should be ready for worldwide distribution by September 2013.

Veterinary issues

Yersinia related deaths occur in several species of hornbills, but not all zoo veterinarians are convinced of the efficacy of the available vaccine. More data and discussion are needed to produce an official TAG statement on this issue.

Introductions in hornbills

Patience is needed when introducing hornbills. Ideally, potential pairs should be placed in adjacent enclosures with visual, auditory and limited physical contact, and then introduced simultaneously into a new, breeding enclosure only after positive interactions are routinely observed. Killings occur in some species, e.g. *Aceros corrugatus*, and young, sexually immature females should not be paired to adult males. Caution is also required after temporary separation of hornbills, e.g. a young male Von der Decken's hornbill killed

his sister in quarantine after two days of travelling in separate transport boxes.

Training of hornbills

Tools for training can be important for keepers working with hornbills. Target training may help reduce aggression of hornbills. Copenhagen Zoo staff taught hand-reared Abyssinian ground hornbills (*Bucorvus abyssinicus*) to “station” rather than to attack their keeper; these birds went on to successfully rear a chick. While research is needed for more general application, such training may be useful with other problematic hornbills. Weight training of hornbills used in educational presentations seems to be easily accomplished; weight training is useful for monitoring hornbill body condition, especially prior to nesting.

Research

Several projects were prepared or initiated in 2012, including studies into nutritional requirements of *Buceros* hornbills, nest parameters (e.g. humidity and temperature) in Asian hornbills and pair bonding in breeding pairs of Wrinkled hornbills (*Aceros corrugatus*). A space survey will be conducted in 2013 to identify which hornbill species EAZA zoos want to keep in the future, and how many enclosures can be dedicated. Revision of the Regional Collection Plan (RCP) will be undertaken once the survey results are in.

Case study

While many zoos wish to display the attractive *Buceros* hornbills, *Buceros* breeding in zoos has been particularly difficult. Numbers need to be increased quickly in order to maintain populations of these species in European zoos. The TAG is considering encouraging “harvesting” fertile eggs for artificial incubation and hand-rearing of *Buceros* chicks. A working group has been established to draft protocols for egg removal, incubation, hand rearing methodology, diet etc. Furthermore, successful parent-rearing of eight Rhinoceros hornbills (*Buceros rhinoceros*) in five EAZA zoos during 2012 occurred. The programme for this species was upgraded from ESB to EEP in 2012 to manage this species more intensively, and the coordinator Eric Bairrão Ruivo, Zooparc de Beauval, is doing an outstanding job inspiring participating zoos to breed this species.

PASSERIFORMES

TAG Chair: David Jeggo, Durrell Wildlife Conservation Trust, Jersey, The United Kingdom

TAG Vice Chair: Theo Pagel, Zoologischer Garten Köln, Cologne, Germany

The Passeriformes TAG meet at the Bird TAGs Mid-year meeting in Weltvogelpark Walsrode and during the EAZA Annual Conference in Innsbruck. In addition, a subdivision of the TAG, the ‘Threatened Songbirds of Asia Working Group’ held a two day meeting for the second year running, this time in Plzen.

This working group is of growing importance, rising to the challenge of helping to conserve not only Bali starling (*Leucopsar rothschildi*) but the increasing number of Asian passerine species that are gravely threatened. Conservation breeding may have a role to play for many of these but the group is also actively trying to support *in situ* work. The enthusiastic and active participation of Dr Nigel Collar from BirdLife International is much appreciated and hugely benefits the working of the group.

One of the species that comes within the remit of the working group is the black-and-white laughingthrush (*Garrulax bicolor*), endemic to Sumatra. In common with many of the Passeriformes from the region it is under severe pressure from trapping for the caged bird market. A few pairs have been gathered together at the Cikananga Wildlife Centre



BRAZILIAN TANAGER (*RAMPHOCELUS BRESILIUS*) © GREGORY GUIDA

in Java and the excellent news is that these are now beginning to produce offspring successfully. The ESB, co-ordinated by Andrew Owen at Chester Zoo and comprising some 40 birds, is slowly growing as well. The first studbook was published in March 2012 and this documents the progress being made. In 2011 thirteen young were raised at 4 institutions, with successful parent rearing at both Zoologicka zahrada Praha and Waddesdon Manor Aviary which is a big step forward as previously hand rearing had been the norm.

The blue-crowned laughingthrush (*Garrulax courtoisi*) has a wild population of just some 250-280 birds at Wuyuan, Jiangxi Province, Eastern China. In 2012 WAZA gave approval for the captive population to be managed internationally as a Global Species Management Plan (GSMP). The first GSMP master planning session is scheduled to be held during 2013. All in all this relatively newly formed group is making great strides in trying to aid the very urgent conservation needs of a number of highly threatened species in Asia and seeking to link our EAZA programmes with *in situ* efforts.

Among the new developments within the TAG an ESB has been approved for the Brazilian Tanager (*Ramphocelus bresilius*). This is being co-ordinated by Nigel Simpson at Bristol Zoo Gardens, and the first studbook has already been published and lists just over 100 living birds. Neotropical passerines are poorly represented in the RCP and this is the first programme for any species from the region. Tanagers are an important element of the avifauna and forest ecosystems of the Neotropics. So while it is not an endangered species it is important and hopefully the population in Europe will now improve. Tanager numbers in EAZA institutions have declined steadily in recent years and it is only the Brazilian Tanager that currently seems to have the potential of anything like being sustainable.

Also from the New World the Mexican Green Jay now has a designated monitor. Rosanna Gallego at Barcelona has taken on this task. There are only a few individuals of this attractive species in EAZA collections but some breeding success is being achieved in her institution.

So while there is still an enormous amount to do progress is being made in both the sustainability of at least some species within EAZA and in supporting *in situ* conservation.

Case study: 1: Implications of Atoplasma in the Blue-crowned laughingthrush ESB

Atoplasma is a parasite that has implications for a number of the passerines species we manage in our EAZA collections. One species it particularly effects is the blue-crowned

laughingthrush, where it is responsible for deaths in juvenile and adult birds and may well contribute to the high chick mortality that there is in this ESB programme.

Research carried out by Anais Tritto during 2012 on the implications of Atoplasmosis in this species is therefore particularly valuable. It advanced our understanding on how Atoplasmosis impacts this species and therefore suggests how to manage our birds in such a way to minimise the effect of the disease.

Anais contacted all the participants in the programme via a questionnaire. She amassed data on a range of aspects, including the prevalence of Atoplasmosis, seasonal patterns of mortality, accommodation and treatment protocols

As a result there are some clear trends, for example critical periods are during the first year of life, during the first breeding season and in general between August and December. Further research is required but we are closer to being able to reduce the impact of this troublesome disease in the captive programme for this highly threatened species.

Case study: 2: Montserrat Oriole

When in 1997 the Soufriere volcano erupted on the small Eastern Caribbean island of Montserrat there was great concern for the indigenous flora and fauna. Much of the suitable habitat for the island's only endemic bird, the Montserrat oriole (*Icterus oberi*), was destroyed. Therefore in 1998 eight orioles were captured and brought to Jersey to establish husbandry techniques. This species had never before been maintained and very little was known of its requirements in captivity. This was a precaution in case the species should become so severely threatened that a captive population would need to be established as a safeguard.

Today, fifteen years later, their management requirements are well understood and the captive population in Europe has grown to some sixty birds, distributed between twelve EAZA institutions and still includes three of those brought from Montserrat.

The species is listed as Critically Endangered, the latest estimate putting the population at some 750 birds, and overall it may still be in decline. The volcano continues to be active, periodically causing habitat damage through ash fall, and rats and pearly-eyed thrashers predate nests, so the species faces an uncertain future. A close watching brief is being kept and, while not needed as yet, a more intensive captive programme may be required at some stage.

MONOTREME AND MARSUPIAL

TAG Chair: Udo Ganslosser, University of Greifswald, Greifswald, Germany

TAG Vice Chair: Peter Dillingham, Blackpool Zoo, Blackpool, United Kingdom

TAG Vice Chair: Achim Winkler, Zoo Duisburg, Duisburg, Germany

In 2012 the EAZA Monotreme and Marsupial TAG went through some organisational changes and decided upon some long term projects. Achim Winkler, Zoo Duisburg, was elected as an additional vice-chair, to help the TAG with the responsibility for international cooperation. One new EEP was established – the Yellow-footed rock wallaby (*Petrogale xanthopus xanthopus*) EEP - and Benoît Quintard, Parc zoologique et botanique de Mulhouse, was elected as the EEP coordinator. This EEP will be run in close collaboration with American counterparts from the Association of Zoos and Aquaria (AZA). The Brush-tailed bettong (*Bettongia penicillata*) EEP also saw a change in coordinator – Esmeralda Dols stepped down and Christina Henke, EAZA Executive Office, took it on. In order to have an official liaison to the Australasian region, Erna Walraven, Taronga Zoo, was asked to act as a TAG advisor.

The Monotreme and Marsupial TAG also worked on improving international collaborations and discussions on setting up two Global Species Management Plans (GSMPs) for Matschie's (*Denfrolagus matschiei*) and Goodfellow's tree kangaroos (*Dendrolagus goodfellowi*) were initiated. GSMPs are established to help make *ex situ* breeding programmes sustainable on a global scale and involve collaboration with the various worldwide regional breeding programmes.

Two statements were issued by the TAG in 2012 both in relation to the importation of animals from Australia. The TAG is keen to coordinate such imports from TAG to TAG level.

For 2013 Peter Dillingham, the TAG vice-chair, decided to compile husbandry guidelines for all species under the TAG's remit. The coordinators and studbook keepers will be involved in the process and the aim is to give clear guidance on the keeping of monotreme and marsupial species to participants. Also the determination of birthdates needs to be reviewed as it is particularly difficult to determine this in marsupials due to the size of the young when they are born and the length of time they stay in the pouch for.

Especially in the Matschie's and Goodfellow's tree kangaroo EEPs, but also in the Wombat (*Vombatus ursinus*) EEP,

research and conservation initiatives are being carried out. Tree kangaroos and wombats are poor breeders in captivity and therefore research is focussing on the reproductive status of animals. It is hoped that the analysis might highlight new ideas to encourage the successful breeding of these species.

PROSIMIAN

TAG Chair: Achim Johann, NaturZoo Rheine, Rheine, Germany

TAG Vice Chair: Delphine Roulet, Parc Zoologique de Paris, Paris, France

The main focus of the EAZA Prosimian TAG in 2012 was on *in situ* conservation. The mid-year meeting was entitled “*in situ* conservation workshop”. 30 participants – from zoos and NGOs as well from the Ministry for Environment of Madagascar and the Madagascan primatological research and conservation association GERP – met at NaturZoo Rheine to present and discuss *in situ* conservation activities for prosimians. The involvement of a delegation from Madagascar (at the invitation of the TAG and with financial support from EAZA and individual zoos) was regarded as most worthwhile: in demonstrating their activities, the TAG and the zoo community contributed to much needed transparency, and gained the trust of the Madagascan authorities. Further, closer cooperation was confirmed and signalled by signing an agreement of cooperation for the “Sifaka meta-population project”. Moreover, the Ministry for Environment of Madagascar asked the TAG for support (advice and capacity-building) when creating a captive breeding cooperation in Madagascar.

The workshop revealed that there are numerous *in situ* conservation projects for prosimians with some kind of involvement of individual zoos and also zoo-based organisations. The TAG consequently worked on a priority list of *in situ* conservation projects, the so called “Prosimian TAG *in situ* conservation plan”. These projects are recommended by the TAG as they are linked to the EEPs and ESBs. The respective coordinators can promote these projects to and via the participants. The *in situ* conservation plan also considered non-Madagascan Prosimian taxa, namely tarsiers in the Phillippines and slow loris on Java.

To ensure continuous work on the *in situ* conservation plan the TAG welcomed Peggy Lavergne, Bioparc Doué as the new TAG member who will monitor the projects and update the plan as appropriate. Also Milada Rehakova, Decin Zoo, was



PROSIMIAN MIDYEAR MEETING IN RHEINE, WITH REPRESENTATIVES FROM MADAGASCAR



JAVAN SLOW LORIS (*NYCTICEBUS JAVANICUS*) © WAWAN TARNIWAN

appointed as TAG member to keep an eye on tarsiers, a taxon which is not kept in EAZA zoos but which needs attention regarding *in situ* conservation.

Resulting from a recent evaluation process (by IUCN PSG and other authorities with expertise) the Madagascan prosimian taxa became re-categorized in the IUCN Red List leading in many cases to upgrading to Critically Endangered, Endangered or Vulnerable level. In consequence the Prosimian TAG Regional Collection Plan was reviewed and updated. More work on this must be done in the year 2013.

The TAG's individual programmes (13 EEPs, 7 ESBs) were regarded as being run appropriately. There was some individual coaching of new coordinators which proved to be a worthwhile exercise and also revealed strong and weak performances of a breeding programme.

As a result of the efforts of the respective coordinators, the EEPs for Black-and-white ruffed lemurs (*Varecia variegata*) and Red ruffed lemurs (*Varecia rubra*) improved considerably. However, it is the commitment of the programme participants which is needed to ensure genetically and demographically healthy populations of these charismatic as well as highly endangered species.

Husbandry research focused on preparing a comparative study on ambient temperature and the light regime under which lemurs are kept. There might be links between ambient temperature and body-shape (obesity) and the study is aimed to reveal such links and potentially to improve the husbandry.

Proceedings and documents from the workshops and meetings mentioned above as well the RCP can be found on the TAG's webspace on the member area of the EAZA website.

Case study The *in situ* conservation plan

The "Prosimian TAG *in situ* conservation workshop" revealed that there are numerous and manifold *in situ* conservation

activities with the involvement of EAZA zoos in Madagascar. However, links among such conservation programmes and between them and the zoos are sometimes unclear or confusing. It was thought that a structured compilation of *in situ* conservation projects would be helpful for the EEPs and ESBs as well for individual zoos to gain a concise overview with essential background information to assist decision making on supporting such projects.

A working group reviewed the *in situ* conservation projects already in practice following a checklist which included the description of the projects, goals, budgets, funding and cooperation partners, and, last but not least, the prosimian species concerned. The species were regarded as the crucial link to the breeding programmes. Care was given that all EEPs and ESBs were connected to an *in situ* conservation project, although not necessarily for the respective species in the wild but at least to one from the region or habitat. As Madagascar is always in the focus when talking about prosimians it is worth mentioning that projects in Indonesia and the Philippines for *Nycticebus* resp. *Tarsius* species were also included in the evaluation.

The working procedure, according to a spreadsheet format, and more so the intention of the whole process - namely offering the zoo-community a helpful tool for decision-making - was comparable to the one for the Regional Collection Plan (RCP). This is why the result was named the "Prosimian TAG *in situ* conservation plan". It was officially presented at the EAZA annual conference 2012 in Innsbruck.

Projects listed in the plan are requested to provide annual reports to keep it up to date.

Zoos who are interested in learning which *in situ* conservation projects are recommended for support can check the Prosimian TAG webspace in the member area of the EAZA website, or ask the respective EEP coordinators for the different lemur- or loridid-species.

CALLITRICHID

TAG Chair: Eric Bairrão Ruivo, Zooparc de Beauval, Saint-Aignan, France

TAG Vice Chair: Dominic Wormell, Durrell Wildlife Conservation Trust, Jersey, United Kingdom

2012 was another very active and productive year for the EAZA Callitrichid TAG with further work on many fronts, including husbandry issues, *in situ* conservation and regional collection planning.

During the year two general meetings were held by the TAG. In March a meeting of the coordinators and TAG advisors was held in Amsterdam, and there was also the general meeting at the EAZA annual conference in Innsbruck.

This year saw several changes to coordinators of the various EEPs. Miranda Stevenson, supported by Bristol Zoo, will be taking over the cotton-top tamarin (*Saguinus oedipus*) EEP from Bernard Holdijk, Zodiac Zoos, after his excellent work over the preceding years to get some order within the region for this population. Greg Clifton, Twycross Zoo, is taking over the red-handed tamarin ESB (*Saguinus midas*) from Aude Desmoulins, Zooparc de Beauval. The Black-tufted marmoset (*Callithrix penicillata*) monitoring program which was also co-ordinated until recently by Bernard Holdijk, Zodiac Zoos, will be managed by Rikke Kruse Nielsen, Aalborg Zoo. Tracey Moore stepped down from co-ordinating the silvery marmoset (*Mico argentatus*) and the Black-tailed marmoset (*Mico melanurus*), which will be taken over by Nic Dunn, Shaldon Wildlife Trust. Finally, a new monitoring program for the moustached tamarin (*Saguinus mystax*) was started and will be managed by Franck Haelewyn from Reynou Zoo.

A significant achievement this year was the translation



BLACK LION TAMARIN (*LEONTOPITHECUS CHRYSOPYGUS*)

of the in-depth callitrichid husbandry guidelines into Portuguese with help from São Paulo Zoo. The guidelines are now available in both Spanish and Portuguese, thus covering all range countries, and have now been distributed to the relevant zoo associations covering the region and also to many institutions keeping callitrichids including zoos and rescue centres. As the guidelines are very thorough and include the latest thinking on all aspects of husbandry, we believe this is a great step forward in securing safety-net populations for important species in their country of origin.

A vital survey was carried out by the TAG this year to assess the stability of single-sex groups of callitrichids. The results should prove very useful in developing guidelines on the housing of evicted and surplus individuals. The survey produced some very interesting results, one being that male single-sex groups appear to be more stable than groups composed of females. A copy of the study can be found on the Callitrichid TAG workspace in the member area of the EAZA website.

This survey highlighted how important it is to reply to TAG surveys on husbandry issues, as the more institutions that take the time to fill them in, the stronger the information and results are, and thus the greater help they will be to every institution in the region in dealing with management issues.

A space survey was also designed and will be conducted in 2013, the results of which will feed in to the regional collection planning process that was started during 2012. The driving force behind the new RCP is the need to connect and focus our efforts to conservation initiatives in the wild. A conservation needs assessment was carried out for all taxa within the TAG.

The vice chair attended a vital lion tamarin meeting in Brazil in November. This meeting was the first with respect to lion tamarin captive and conservation work since the international lion tamarin committee was dissolved some years ago. The new working framework with respect to coordination and reporting to the Brazilian authorities was laid out.

This meeting was of crucial importance especially to the black lion tamarin (*Leontopithecus chrysopygus*) which is at desperately low numbers in captivity worldwide – the EEP population numbers just 19 individuals, most of which are ageing and non-breeding. Agreement was reached that resurrecting the European population was a priority.

The white-handed tamarin (*Saguinus leucopus*) conservation programme, which is supported by TAG members, progressed on several fronts. Most notable was the first birth of F2

individuals at one of the captive set-ups the programme has supported. This represents a major achievement for the project, as when it started, the average lifespan of tamarins in captivity was only 4 years and infant survivorship was extremely low, with no births recorded to captive-born individuals.

Vital field work also continued to establish the exact distribution and density of the species in Colombia.

Further efforts continued to establish an international captive breeding programme so that the captive population becomes genetically viable and can act as a strong fund-raising tool for the species in the wild.

Case study

The White-footed or Silvery brown tamarin (*Saguinus leucopus*) is an endemic Colombian species, threatened by the pet trade and loss of habitat, and for which protection is minimal. Local authorities confiscate about one animal every week, placing them in rescue centres and zoos where there are many husbandry problems.

The EAZA Callitrichid TAG decided in 2005 to establish an international conservation programme. Currently coordinated by Zooparc de Beauval in France under the supervision of a steering committee that includes three EAZA Callitrichid TAG members, and locally by Asociación Colombiana de Parques Zoológicos y Acuarios (ACOPAZOA), the programme is a partnership between a consortium of 21 European zoos, ACOPAZOA, local organizations (including nine Colombian zoos), central and regional conservation public authorities, non-governmental organizations (especially the Wildlife Conservation Society), Colombian universities and researchers. It is a perfect example of cooperation between two regions and two regional zoo associations (EAZA and ALPZA) and this project was granted the EAZA Conservation Award in 2006 and ALPZA Conservation Accreditation in 2012. It is also a WAZA branded program.

The project combines *ex situ* in-country reproduction, education and research, and *in situ* conservation and education projects, to protect the species. All efforts to date have been a starting point for the conservation of this endemic species, but the final goals are to: (1) create a protected area for the White-footed tamarins in Colombia, (2) develop two breeding programmes for the species, one in Colombia and the other in Europe, (3) reduce capture of White-footed tamarins for the pet-trade market, through education initiatives, and (4) ease the pressure on the forest habitat that is still intact.

CEBID

TAG Chair: Frank Rietkerk, Apenheul, Apeldoorn, The Netherlands

TAG Vice Chair: Kirsten Pullen, Paignton Zoo Environmental Park, Devon, United Kingdom

Good intentions notwithstanding, the Cebid TAG did not manage a mid-year meeting during 2012. As a number of issues have now been identified that require more time than is available during the annual conference, the chair invited participants at the TAG meeting in Innsbruck to offer to host a mid-year meeting in 2013.

The Cebid TAG is a small TAG: it includes 9 EEPs, 3 ESBs and two species that are being actively monitored. Almost all taxa in the Cebid collection plan are covered with some kind of management. With so few programmes, there are not usually many changes during a given year. The period between the Innsbruck and Edinburgh conferences will be a little different, as at least a third of the EEPs will change coordinator: Yellow-breasted capuchin (*Cebus xanthosternos*), Black-headed spider monkey (*Ateles fusciceps robustus*) and White-faced saki (*Pithecia pithecia*).

The TAG would like to express its appreciation for the efforts of the EAZA Executive Office in helping compile the results of the Cebid EEP evaluations, which took place over 2011 and 2012. The final results were published and distributed in May 2012 and some of the issues will figure



WHITE-THROATED CAPUCHIN (*CEBUS CAPUCINUS*)



BLACK-HEADED SPIDER MONKEY (*ATELES FUSCIPEPS ROBUSTUS*) © RONALD VAN DER BEEK

prominently on the agenda for the mid-year meeting, such as husbandry guidelines and a longer term Regional Collection Plan (RCP) for Cebids.

Most programmes have benefitted from steady and long-term coordination, and most managers know their populations and holders very well. Growth in the majority of programmes has also resulted in a few populations that are now starting to exceed holding capacity – or interest.

Exciting was the birth, in Belfast, of the first Bearded sakis (*Chiropotes chiropotes*) from animals recently imported from Guyana. Belfast also monitors this species – as soon as the population starts to grow significantly, it will become an EEP.

The TAG intends to strengthen its ties with South American zoos and their umbrella organisations. It is the intention that someone from the Cebid TAG attends the ALPZA meeting in Sao Paulo in 2013.

Conservation links are already in place for Red titi (*Callicebus cupreus*), Yellow-breasted capuchin (*Cebus xanthosternos*) and Woolly monkey (*Lagothrix lagotricha*). For both the titis and the woolly monkeys our captive populations are working as flagships for the more endangered species focused on in the wild. The Yellow-breasted capuchin is a critically endangered species with a captive population that is growing fast. Further investment in this programme, from both a captive and a conservational perspective, will be a priority for the coming year.

A space survey for capuchin species in European zoos was carried out during 2012. Despite a poor level of response from these zoos, it is clear that a large number of zoos are still holding non-programme species, and some animals which may need genetic testing to clarify what species / subspecies are being held. The TAG will continue to work on monitoring capuchin species during the coming year.

Work has begun on updating the RCP; this will be continued during the coming year, at the proposed midyear meeting.

Work will also be undertaken this year to draw up guidelines on sexing of difficult monomorphic species (capuchins, spider monkeys and douroucoulis).

Case study

The San Martin Titi Monkey (*Callicebus oenanthe*), endemic to Peru, is rated as one of the 25 most endangered primate species in the world. Its distribution range is restricted to a relatively small area of lowland forest in the eastern foothills of the Peruvian Andes. The species is critically endangered due to massive deforestation and, to a lesser extent, hunting. In 2007, European zoos joined forces for the conservation of the species with the creation of Proyecto Mono Tocón. Data obtained through an extensive research programme is used to implement effective conservation measures. Educational activities are an important component of the project. Currently Proyecto Mono Tocón assists local communities with the creation and management of new conservation areas, while it is expanding its activities to other endangered primate species.

European zoos do not keep the San Martin titi monkey in their collections, but the Red Titi monkey (*Callicebus cupreus*) EEP and the EAZA Cebid TAG have adopted Proyecto Mono Tocón as an important conservation project. A majority of the EEP participants provide financial support. Proyecto Mono Tocón is an initiative of La Vallée des Singes Primate Park (France).

OLD WORLD MONKEY

TAG Chair: Neil Bemment, Paignton Zoo Environmental Park, Devon, United Kingdom
TAG Vice Chair: Tjerk ter Meulen, GaiaZOO, Kerkrade, The Netherlands

The mission of the EAZA Old World Monkey TAG was agreed to be: “To encourage the good management of Old World Monkeys in EAZA collections and associated institutions by means of promoting high standards of husbandry and Regional Collection Planning with a view to establishing self sustaining populations in captivity for the purposes of education, research, *ex situ* conservation and the support of *in situ* conservation initiatives “

The EAZA Old World Monkey TAG held a mid-year


 BLACK CRESTED MANGABEY (*LOPHOCEBUS ATERRIMUS*) © GAIA ZOO

meeting of its core group members on 16 June 2012 at Apenheul Primate Park. It followed the day after the International Gorilla Workshop and, as a result, four representatives of the AZA Old World Monkey TAG were conveniently able to attend, namely: Chairman, Joe Knobbe, Saint Louis Zoo; and, Vice Chairs, Tom Ness, Minnesota Zoo; Rebecca Phillips, Disney Animal Kingdom; and, Audra Meinelt, Columbus Zoo & Aquarium. The aims of the meeting were to compare regional approaches to managing Old World Monkeys and determine which populations would benefit from some exchanges of specimens.

A meeting was also held between representatives of the Old World Monkey TAG, Great Ape TAG and Julie Sherman, recently appointed Executive Director of PASA (the Pan African Sanctuaries Alliance) during the 2012 EAZA Annual Conference in Innsbruck. A more general Memorandum Of Understanding (MOU) is being drafted with a view to forming a closer collaboration between EAZA and PASA for mutual benefit.

Changes in programme managers:

- Golden bellied mangabey (*Cercocebus chrysogaster*) EEP – Tjerk ter Meulen (GaiaZoo)
- Diana monkey (*Cercopithecus Diana roloway*) EEP – Donald Gow (Edinburgh Zoo)
- L'Hoest's monkey (*Cercopithecus lhoesti*) EEP – Donald Gow (Edinburgh Zoo)
- Hamlyn's owl faced monkey (*Cercopithecus hamlyni*) EEP – Tjerk ter Meulen (GaiaZoo, The Netherlands)

Upgraded programmes:

- Talapoin monkey (*Miopithecus ogouensis*) ESB – Miguel Casares (Valencia Zoo) – upgraded from Mon-P
- Javan langur (*Trachypithecus auratus auratus*) EEP – Warner Jens (Apenheul Zoo) – upgraded from ESB
- Francois' langur (*Trachypithecus francoisi*) EEP – Andrew


 BLACK CRESTED MANGABEY (*LOPHOCEBUS ATERRIMUS*) © GAIA ZOO

Hope (Belfast Zoo) – upgraded from ESB

New programmes:

- Patas Monkey (*Erythrocebus patas*) ESB – Sarah Forsyth (Colchester Zoo)
- Moustached monkey (*Cercopithecus cephus*) ESB – Aude Desmoulins (Zooparc de Beauval)
- Hamadryas baboon & other *Papio* spp. (excluding Guinea baboon) Mon-P
 - Ross Snipp (Flamingoland)
- General Status of *Macaca* spp. in EAZA zoos Mon-P
 - Tjerk ter Meulen (GaiaZoo)

EEP evaluations – all completed with either a Satisfactory or Good categorisation.

The Regional Collection Plan (RCP) was published in 2012 and is available on the Old World Monkey TAG workspace in the member area of the EAZA website.

Two *in situ* conservation initiatives, Barbary macaque (*Macaca sylvanus*) in the Rif Mountains (Sian Waters) and WAPCA (Teresa Abello), are currently endorsed by the OWMTAG.

As noted in last year's annual report there are still several challenges that need addressing for the future management of European zoo Old World Monkey populations: namely, the declining trends for many of the endangered taxa that started with only a few founders, a lack of new holders for certain taxa for which the populations need to be expanded and a need to downsize some populations that have been allowed to grow largely unchecked.

Following the joint EAZA/AZA mid-year TAG meeting and the publication of the revised RCP, it is hoped that there will be greater impetus to ensure that our *ex situ* programmes are managed as effectively as possible

Case study “ The future of the Golden-bellied mangabey (*Cercocebus chrysogaster*) in zoos “

The global zoo population of Golden-bellied mangabey (*Cercocebus chrysogaster*) is very small, the average age being quite high and animals outside of Africa currently living on two different continents. During the aforementioned joint meeting of the EAZA and AZA Old World Monkey TAGs it was agreed that the only possibility for a healthier future for this species is for both regions to work closely together.

Tjerk ter Meulen (GaiaZoo) produced an international dataset and analysed the EAZA and AZA populations as one studbook population. A number of assumptions had to be made namely reassigning some unknown provenance individuals as WILD which had some effects on the genetic analyses. It has been proposed that the animals of viable breeding age be brought into breeding situations with the appropriate partners in order to encourage the greatest gene diversity for as long a period as possible. It was agreed that 4.3 potential breeding animals would be transferred from the AZA region to EAZA zoos as soon as was practicable.

The agenda for the next OWMTAG meeting will focus on the practical management of multi-male primate populations.

GIBBON

TAG Chair: Vicky Melfi, Taronga Zoo, Sydney, Australia

TAG Vice Chair: Charlotte Macdonald, Twycross Zoo, Atherstone, United Kingdom

The EAZA Gibbon TAG continues to grow, as does recognition of the conservation need for these small apes, which is picking

up apace. 2012 saw several positive steps which should better enable us to save this taxa from extinction. Chief amongst these were additions and replacements within our group: we welcomed Charlotte Macdonald (Twycross Zoo) as TAG vice-chair, and Zak Showell (Twycross Zoo, Siamang (*Symphalangus syndactylus*)) and Lynsey Bugg (Bristol Zoo Gardens, Agile gibbon(*Hylobates agilis*)) as new EEP coordinators; we are also currently seeking a new Lar gibbon (*Hylobates lar*) EEP coordinator.

Our programme coordinators continue to do an amazing job at managing eight EEPs. To facilitate this we urgently need the full cooperation of our member zoos. The main challenge we face managing gibbons *ex situ* is one of size – for our siamang and lar populations we have too many-, and for our other populations we have too few, girls! It is imperative that recommendations are thus needed, so that we can try to equalise the current populations and ensure we do not continue to have long waiting lists with members waiting to move or receive animals. These issues were further addressed at our annual meeting in Innsbruck, where the potential use of euthanasia as a management tool was discussed.

Another positive step has been the creation of the IUCN section on small apes (SSA), within the IUCN/SSC Primate Specialist Group. This will be coordinated by Dr Ben Rawson (section.small.apes@gmail.com). We really look forward to collaborating with this new group and have high hopes about how this will further enable us all to integrate our *ex situ* and *in situ* activities and interests. Collaboration between regional zoo associations also continues, though discussions on creating global gibbon collection plans are slow; rather like regional collection planning, it is hoped that, as gibbon populations are small, taking a more global perspective on



CAO VIT OR EASTERN BLACK CRESTED GIBBON (*NOMASCUS NASUTUS*) © ZHAO CHANG

their management may make them more effective. The silvery gibbon (*Hylobates moloch*) GSMP has been suspended and the captive population will continue to be managed as an International Studbook (Matt Ford, Howletts Wildlife Park). We anticipate that future collaborations for this species and other gibbons are likely and look forward to supporting them.

The Cao Vit Gibbon Conservation Project is one of the pre-selected projects supported by the EAZA Ape Campaign, and in 2012 the project reported improved cross-boundary collaboration between colleagues in China and Vietnam. This will of course greatly increase the potential impact of the positive work being carried out on both sides of the border, including ongoing monitoring of populations and continued research into the behaviour and ecology of this critically endangered species.

In 2012 we held our first mid-year meeting since records began, generously hosted by Twycross Zoo (March 2012). The meeting was attended by all but 2 members of the TAG. This was a wonderful opportunity to share similar stories and consider how the EAZA Gibbon TAG could more effectively communicate - within our group and also with our stakeholders. One such vehicle for communication has been the publication of four articles, and a short editorial, in a special section on gibbon conservation, in the International Zoo Yearbook (Volume 46, issue 1).

Melfi VA 2012 Gibbon: probably the most endangered primates in the world. Pp 239-240.

Melfi VA 2012 Ex-situ gibbon conservation: status, management and birth sex-ratios. Pp 241-251.

Kenyon M, Cronin A, Kurtis Jai-Chyi Pei and Tran Van Thanh 2012 The role of sanctuaries in integrated conservation: the Endangered Asian Species Trust linking Monkey World Ape Rescue, UK and Pingtung Rescue Centre, Taiwan, with the Dao Tien Endangered Primate Species Centre in Vietnam. Pp 252-258.

Mootnick AR, Chan BPL, Moisson P and Nadler T 2012 The status of Hainan gibbon *Nomascus hainanus* and the Eastern black gibbon *Nomascus nasutus*. Pp 259-264.

Cheyne SM, Campbell CO and Payne KL 2012 Proposed guidelines for *in situ* gibbon rescue, rehabilitation and reintroduction. Pp 265-281.

The many positive steps forward toward gibbon conservation, through effective captive management have only been possible through the hard work and dedication of our team and collaborators. I would like to thank Chris Kibbey, Mel Bacon and Bridget Fry for their hard work as part of the EAZA Gibbon TAG.

GREAT APE

TAG Chair: Tom de Jongh, Burgers' Zoo, Arnhem, the Netherlands

TAG Vice Chair: M^aTeresa Abelló Poveda, Barcelona Zoo, Barcelona, Spain

The EAZA Ape Campaign, 2010-2011, has clearly boosted the TAG's involvement with the conservation of great ape species. In 2012, the EAZA Ape Fund, created with the money collected by the Ape Campaign, selected no less than nine conservation projects that received financial support from the fund.

Several members of the TAGs Core Group attended the UNEP-GRASPs (Great Ape Survival Partnership) Council meeting and following the 'Building Bridges' principle, as promoted by EAZA and IUCN, the chair of the Primate Specialist Group of the IUCN Species Survival Committee was contacted and as a result the EEP Coordinators and TAG Chair have been invited to become members of the Primate Specialist Group.

The TAG was strengthened by two new veterinary advisors and two advisors for matters concerning genetics. Progress with the identification of the subspecies of individual chimpanzees with the use of new genetic methods has had its first consequences for the Regional Collection Plan (RCP) which now includes no less than seven *Pan troglodytes* taxa.

All four EEPs have been evaluated and the Orangutan EEP (*Pongo* spp.) is now the first EEP to be evaluated in a second round. It was rated as 'good'. The TAG follows a schedule for the evaluations that was synchronized with the elections of Species Committees in order to avoid situations in which new Species Committees have to evaluate their EEP.

The Great Ape TAG had a very productive mid-year meeting at Zooparc de Beauval with valuable presentations concerning the use of GnRH agonists for contraception of



WESTERN LOWLAND GORILLA (*GORILLA GORILLA GORILLA*) © R.W. HERMANUS

both sexes and the Great Ape Heart project, an American initiative to examine as many apes as possible for signs of problems with the circulatory system. Data from Europe are now also being included. Additionally there were three presentations on genetics: the application of population genetic methods towards resolving problems in conservation; conservation genomics of the great apes; and, genotyping efforts, future perspectives.

The increased role of genetic research required extensive discussions on the necessary procedures and led to the creation of an EAZA Great Ape bank for genetic material in Copenhagen Zoo. A template for an agreement between researchers and institutes sending material for research, regarding the ownership and further use of the samples is being developed.

Genetic research obviously provides improved insight into the taxonomic build up of our populations. The need to identify criteria for the possible acceptance of consequences that these research results can have for our collection plan, for our populations and for the animals in our care was also discussed.



GIAMBO THE CHIMPANZEE, BURGERS' ZOO, ARNHEM © THEO KRUSE

There was also a short update on the use of neuroleptic drugs to modify behavior in old world monkeys and apes in zoos.

The TAG met for the second time this year during the EAZA Annual Conference in Innsbruck, with presentations about the Great Ape Survival Partnership (UNEP-GRASP), the Pan African Sanctuary Alliance (PASA), the new orangutan facility in Furuviksparken, the orangutan nutrition survey, as well as updates on the four EEPs.

There was also a short note on the risk of water moats and inappropriately maintained ropes in Great Ape enclosures, and the resulting avoidable accidents.

The research group, initiated two years ago, is laying the base for the promotion and coordination of research on apes in zoos aimed at improving the management.

Issues that are under review are: the surplus males problem; bachelor groups in gorillas; castration as a management tool; promoting *in situ* conservation, and measurement of wellbeing.

Case study

In nature orangutans are generally solitary and territorial. They can adjust to more social situations to a certain degree, but fully adult males do not tolerate each other at all. In the EAZA orangutan population we have seen that with the growth of the portion of the population that was born in zoos, the relative number of males has increased as compared to the number of females. For our current facilities and keeping systems we now have too many males. Unlike gorillas and chimpanzees, orangutans cannot be kept in all male groups. This is becoming an increasing problem.

The TAG believes that the best way out of this problem would be if facilities and keeping systems would be adjusted to keep equal numbers of males and females in a number of inside and outside enclosures, and bring these together in changing social situations (fission –fusion), of course avoiding bringing adult males together. This would come much closer to the natural social system, of which all the orangutans would benefit in addition to solving the male surplus problem.

SMALL MAMMAL

TAG Chair: Jutta Heuer, Zoologischer Garten Halle, Halle, Germany

TAG Vice Chair: Klaus Rudloff, Tierpark Berlin-Friedrichsfelde, Berlin, Germany

In 2012 the EAZA Small Mammal TAG met in Wrocław, Poland for their mid-year meeting. Wrocław Zoo did an outstanding job in hosting the meeting. About 40 people from 28 institutions in 14 countries came together and gave interesting presentations about a lot of different small mammal species, ongoing scientific research and *in situ* conservation projects. Among those presentations the diet of anteaters was discussed, and a newly built small mammal house in Frankfurt Zoo (“The Grzimek House”) was presented.

An Analysis was also presented to compare the Small Mammal TAG to other EAZA TAGs and it was found that the Small Mammal TAG actually oversees the highest number of species. Usually a TAG oversees a variety of around 100 different species, whereas more than 3000 species fall under the umbrella ‘small mammal’. This means that the Small Mammal TAG will experience changes in the management structure in the coming years in order to oversee the various species adequately. Consequently it was decided that more participants should be involved in the TAG work and that subgroups should be created, similar to how the Antelope and Giraffe TAG tackled this similar issue. Coordinators for the subgroups still need to be found. One of the main tasks will be to update the Regional Collection Plan (RCP).

During the EAZA Annual Conference in Innsbruck, Austria, reports from the EEPs, ESBs and monitoring programmes were given. The Small Mammal TAG oversaw



PACARANA (*DINOMYS BRANCKII*)



SIX-BANDED ARMADILLO (*EUPHRACTUS SEXCINCTUS*)

2 EEPs, 13 ESBs and 17 monitoring programmes in 2012. Sadly, in 2012 the Small Mammal TAG lost a dear colleague, Paul Howse, the Rodrigues Fruit Bat (*Pteropus rodricensis*) EEP coordinator. Based upon the EEP evaluation the plan was made to downgrade the Rodrigues Fruit Bat EEP to an ESB, and the North of England Zoological Society (Chester Zoo) would like to keep the programme.

The Small Mammal TAG is collaborating well with the IUCN Species Survival Commissions (SSC) for anteater, sloths and armadillos and with the American counterparts of the Association of Zoos and Aquariums (AZA).

Three members of the Small Mammal TAG went to Brazil last November. Ilona Schappert (Zoo Dortmund), EEP coordinator and ISB keeper for giant anteaters (*Myrmecophaga tridactyla*), Monique Versloot (Artis Zoo) and Jutta Heuer (Zoologischer Garten Halle), TAG chair, visited different zoos in Brazil and collected information about the population and field research of xenarthras, especially of anteaters. They met with Flavia Miranda, vice-chair of the IUCN SSC for anteaters, sloths and armadillos and Lydia Möcklinghoff, field researcher from Bonn University.

Case study

As an *in situ* conservation initiative, the Small Mammal TAG has supported the Pacarana project in Bogota, Colombia since 2005, together with the Zoological Society for the Conservation of Species and Populations (ZGAP). The Pacarana (*Dinomys branckii*) is one of the most unknown rodent species. Pacaranas have been endangered according to the IUCN since 2003 and the status in the wild is mostly unclear. This indicates that research and *ex situ* conservation efforts are very important for the future of the species. Karin Osbahr from Universidad de Ciencias Aplicadas y Ambientales in Bogota is responsible for the project on site.

The TAG and various EAZA member zoos support the project by providing expert knowledge on enclosure design and helping to build new enclosures for the animals in Bogota.

CANID AND HYAENID

TAG Chair: Raymond van der Meer, Amersfoort Zoo, Amersfoort, The Netherlands
TAG Vice Chair: Heike Maisch, Thuringer Zoopark Erfurt, Erfurt, Germany

In 2012 the Canid & Hyaenid TAG continued to work on its mission statement:

‘The EAZA Canid and Hyaenid TAG wants to develop an inclusive approach to the conservation of Canids and Hyaenids by:

- Coordinating and encouraging participation in *in situ* conservation activities;
- Establishing priorities considering conservation, research and education with species coming under the remit of the TAG;
- Striving for the highest standards in welfare and professional management for species coming under the remit of the TAG; and,
- Promoting cooperation between EAZA members and other organisations with similar goals.’

Meetings

During the EAZA Annual Conference in Innsbruck we had an interesting meeting with several presentations. Dr. Cheryl

Asa, from the AZA Wildlife Contraception Centre, gave a presentation about the risk of Uterine Pathology Associated with Contraception or Non-Conceptive Cycles. Having surplus challenges in some of our programmes this was a very interesting presentation and fuel for further discussion. The second presentation was from Dr. Marion East, who has worked for more than 25 years with spotted hyenas (*Crocuta crocuta*) in the wild. She gave an insight in the social live and rules in a spotted hyena clan.

For 2013 a midyear meeting is planned where the issues and challenges of the management programmes will be discussed with the coordinators in more detail. Furthermore there will be attention for *in situ* conservation activities and a discussion on how to move forward with Grey wolves (*Canis lupus*) in EAZA zoos.

Regional Collection Planning

There are currently 34 canid species and 4 hyena species within the scope of the TAG. Some species we have evaluated to a subspecies level depending on the existence in captivity. The taxonomy that was used is in agreement with the IUCN SSC Canid and Hyenid Specialist Groups.

Of the total species under the remit of the TAG, 20 species or in some cases subspecies are recommended in the Regional Collection Plan. Five species are managed at an EEP level, 4 species at ESB level, and 11 species are monitored by the TAG or a designated person (MON-T/MON-P).

Cooperation

The TAG established good contact with the AZA Canid and Hyaenid TAG and Jack Grisham, chair of the AZA Canid & Hyenid TAG gave a short update on their work during



BUSH DOGS (*SPEOTHOS VENATICUS*) © NEVILLE BUCK

the Innsbruck meeting (via a Skype connection). The first communications between the TAG and the IUCN Canid and Hyena Specialist Groups have started and we will strengthen the cooperation in the next few years.

Future

In 2013 the TAG will host a midyear meeting to discuss the development of activities in the TAG. Some of the points for discussion:

- To finish the RCP document, and evaluate the effect of the RCP
- Evaluate the involvement in Canid and Hyaenid conservation projects
- Make a wish list of priority research for the different species that are in the RCP
- Explore the possibilities of the organisation of a global Canid meeting

BEAR

TAG Chair: José Kok, Ouwehands Dierenpark, Rhenen, The Netherlands

TAG Vice Chair: Lydia Kolter, Zoologischer Garten Köln, Cologne, Germany

The 2012 Bear TAG mid-year meeting in Amsterdam was combined with species committee meetings of the three species managed as an EEP: polar bears (*Ursus maritimus*), sloth bears (*Melursus ursinus*) and spectacled bears (*Tremarctos ornatus*). TAG members, species committee members, the Species Survival Plan (SSP) coordinators for polar bears and spectacled bears, as well as a representative from the Central Zoo Authority, India, participated in the meeting. During the meeting, programme specific challenges and the various populations' status in the different regions were discussed. It was decided to strengthen links between the regions to improve the quality of the captive populations of all



SUN BEAR (*HELARCTOS MALAYANUS*) © GABRIELLA FREDRIKSSON



SUN BEAR (*HELARCTOS MALAYANUS*) © GABRIELLA FREDRIKSSON

three species. During plenary sessions a draft of the “EAZA Position Statement on Bears in Commercial Entertainment” was intensely discussed. The husbandry survey drafted during the previous year was more clearly structured and diversified. Invited representatives of bear conservation NGOs from Polar Bears International (PBI) and Free The Bears gave an overview on their work. The NGOs are trying to fight the threats polar bears, sun bears (*Helarctos malayanus*) and Asiatic black bears (*Ursus thibetanus*) are facing in their natural habitats. Ideas for the 2013 EAZA conservation campaign, with a focus on the effects of global climate change, were put forward.

The “EAZA Position Statement on Bears in Commercial Entertainment” was finalised and posted on the EAZA website. The EAZA Conservation Committee accepted the campaign with the final title “Pole to Pole” as suggested by the Bear TAG.

The husbandry survey was circulated at the end of June by the EAZA Executive Office to all bear keeping facilities in the EAZA region through an appointed student. The preliminary results were presented during the Bear TAG annual meeting at the EAZA Annual Conference in Innsbruck. Final analyses are planned for 2013, which might result in an update of the husbandry guidelines.

The steps towards the “Pole to Pole” campaign were also presented during that meeting. A major focus of the campaign will be on polar bear conservation. Representatives of PBI reported on the developments of polar bear populations in Manitoba; these animals are mostly threatened by global warming – the primary cause for the decline of wild polar bear populations. It was also discussed which roles zoos can play to help halt the effects of climate change.

In November 2012 official partnership for the upcoming “Pole to Pole” campaign between EAZA and PBI was established.

The campaign will be launched during the Annual

Conference in Edinburgh in September 2013 and promises to be a campaign unlike any other. The polar bear is the flagship species and will be used to illustrate climate change in the Arctic. On the opposite side of the globe, species can be found that suffer from climate change in a similar way. As with any other delicate ecosystem many more species in the Arctic and Antarctic are under threat, not just the top predators. The aim of the campaign is to change public behaviour in order to minimise the effects of climate change.

The common, leading theme will be:

**Build Green, Live Green, and Choose Green
in your daily life!
Sustainability is fun!**

The TAG Chair and Vice Chair also attended the 21st International Conference on Bear Research and Management (IBA) in New Delhi. During the session of the IUCN Bear Specialist Group a report on projects from the captive bear expert team (CBET) were presented. One project is a visitor study focusing on the short term knowledge gain about bears when applying different education tools. The pilot study was performed at Ouwehands Dierenpark. The second project gives advice and outlines the procedures for research collaboration between *in situ* and *ex situ* efforts.

SMALL CARNIVORE

**TAG Chair: Stewart Muir, Newquay Zoo,
Newquay, United Kingdom**

**TAG Vice Chair: Aude Haelewyn-Desmoulins,
Zooparc de Beauval, Beauval, France**

The core members of the TAG held a planning workshop at the EAZA Executive Office in Amsterdam in April 2012 to discuss the Regional Collection Plan (RCP) and the future structure of mid-year meetings.



MARBLED POLECAT (*VORMELA PEREGUSNA*) © LAUS RUDLOFF

For the RCP, the global assessment of all small carnivore species was distributed among TAG members by taxonomic groups and regions. Outstanding progress has been made on this project in 2012 and it is hoped to be finalized in 2013. It will be the first time that all of the species globally have been included and the TAG chair would like to thank everybody for their efforts.

Updating of the husbandry guidelines was also discussed. Many have been compiled already and the remaining ones are hoped to be finalised in due course.

The general opinion at the meeting was that the Small Carnivore TAG mid-year meeting should be held annually in Amsterdam for core members to ensure maximum attendance, as it is a convenient location to get to for most participants. This means the TAG will officially split from having joint mid-year meetings with the Small Mammal TAG as in previous years. The Small Mammal TAG is however still encouraging members of the Small Carnivore TAG to attend their mid-year meetings, too.

At the EAZA annual conference in Innsbruck a closed session was held, which Will Duckworth from the IUCN Small Carnivore Specialist Group was invited to attend. His expertise and input to the meeting were invaluable and he has kindly agreed to be an advisor to the TAG. The open TAG meeting was well attended with a number of programme coordinators giving presentations on the developments in their breeding programmes.

Aside from the TAG's current programme, Sandra Langguth, Zoologischer Garten Leipzig, gave a presentation on the successful import of spotted quolls (*Dasyurus maculatus*), a fascinating small carnivore marsupial species.

In 2012 a Yellow-throated marten (*Martes flavigula borealis/aterima*) ESB was established and it is developing well, with the population increasing to an extent that new holders will be needed soon.



YELLOW-THROATED MARTEN (*MARTES FLAVIGULA*) © HELMUT MÄGDEFRAU

At the end of 2013 the TAG was faced with re-appointing the European otter (*Lutra lutra*) EEP as Lynda Burrill, Edinburgh Zoo, stepped down as EEP coordinator and it is hoped that Elodie Rey, Parc Zoologique de Paris, will be appointed as new coordinator for the species.

The TAG was saddened to hear of the death of Volker Gatz, Dortmund Zoo, who had done so much greatly appreciated work for the Giant otter (*Peronura brasiliensis*) EEP.

For 2013 it is hoped that all EEPs will have appointed species committees by the end of the year.

Case study

In 2011, the Small Carnivore TAG Chair attended the Conservation Breeding Specialist Group (CBSG) meeting in Prague following an invitation for EAZA TAG Chairs to participate. As a result of the various workshops, it became apparent that it would be desirable for TAGs to work closely with their relevant IUCN Specialist Groups.

Consequently the TAG chair has become a member of the IUCN Small Carnivore Specialist Group and Will Duckworth, a highly regarded and knowledgeable member of the Small Carnivore Specialist Group, was invited to the TAG's annual meeting and became an advisor to the TAG. This collaboration has already proved valuable as it strengthens the links with assessing the status of species in the field. Vice versa the *ex situ* breeding programmes will also benefit from the linkage to field researchers. The IUCN Small Carnivore Specialist Group produces an excellent journal and for 2013 it is planned to publish a joint issue which will highlight the involvement of zoos in the conservation of various small carnivores internationally. It is also hoped that the TAG's work will benefit from the collaboration with the IUCN to help determine which species to prioritise for the keeping in EAZA zoos.

FELID

TAG Chair: Alexander Sliwa, Zoologischer Garten Köln, Cologne, Germany

TAG Vice Chair: André Stadler, Zoo Wuppertal, Wuppertal, Germany

TAG Vice Chair: Grégory Breton, Le Parc des Felins, Nesles, France

Felids are charismatic animals and almost every zoo has a big cat species. Consequently, a lot of felid breeding programmes have been established in the EAZA region. In 2012, there

were 17 EEPs, 4 ESBs and 8 (sub)species are monitored by person. The mission of the EAZA Felid TAG is to oversee the functioning of these programmes and to decide on the strategy for future years.

In 2012 DierenPark Amersfoort, the Netherlands, hosted the Felid TAG mid-year meeting and 24 people, including the EEP coordinators, ESB keepers, advisors and external lecturers gathered and had fruitful discussions. In addition to the usual discussions on taxa evolution, problems faced by the programme, and voting for potential future coordinators, two external lecturers gave important presentations on the newly available genetic tools (SNP chips) and their possible applications in our TAG. Veterinary issues and relationships between the Felid TAG and private holders have also been discussed. No decision has been taken on the latter, but establishing strong loan agreements and maintaining contact with the EAZA Executive Office are of primary importance.

All EEPs have been evaluated between 2009 and 2011. The three final ones were the Clouded leopard (*Neofelis nebulosa*), the Pallas' cat (*Otocolobus manul*) and the Fishing cat (*Prionailurus viverrinus*) EEPs. The Species Committees, nor the participants surveyed reported any major failures on the quality of the programmes and/or the involvement of the coordinators. The majority of the Felid TAG breeding programme managers were indeed very active even before the EEP evaluations and this evaluation procedure encouraged others to improve their work and the communications between all parties. Consequently, no major decision was needed to be taken and the TAG is pursuing its good work.

A new Regional Collection Plan (RCP) is currently being prepared with the aim of making it available in 2013. In this RCP, the 21 EEP/ESB taxa are 'recommended' by the TAG and institutions are encouraged to favour them when they choose to add a new felid species to their collection. 13 taxa currently present in our region have been 'not recommended' by the TAG because of less importance in conservation matters. Some species should be limited in numbers and others have to be phased out. Two taxa, the European wildcat (*Felis silvestris silvestris*) and the African lion (*Panthera leo*), need further genetic analysis to decide on the best strategy.

Moreover, 9 felid taxa not present in the EAZA region are also mentioned and the Felid TAG encourages supporting *in situ* conservation initiatives rather than attempting to import specimens. If possibilities arise to import endangered species like the Andean mountain cat (*Leopardus jacobita*) or the flat-headed cat (*Prionailurus planiceps*), the TAG stresses that coordinated actions are compulsory in order to start a

sustainable breeding programme. Importing single animals is not recommended.

Finally, generic, hybrid, unknown-origin and colour-selected animals should be reduced in our collections to strengthen our *ex situ* conservation efforts and to give true educational messages.

In the existing breeding programmes, three major difficulties can be outlined:

- 1) Some small cat populations are not sustainable because of their small founder base;
- 2) EAZA institutions increasingly lack the interest in keeping smaller felid species, which hampers the development of some programmes;
- 3) Some programme participants are not cooperating well within the EEP, sometimes not following the recommendations or avoiding communication.

Case study

The EAZA Felid TAG chairs are very keen on *in situ* conservation and encourage all coordinators to have at least one *in situ* conservation programme to advertise to their programme participants. Connections between the Felid TAG and the IUCN Cat Specialist Group (SG) are also good and the TAG chair went to Iran in 2012 with the IUCN CSG Chairs for Persian leopard (*Panthera pardus saxicolor*) conservation meetings. An MoU has been signed by EAZA, the IUCN Cat SG and the Russian Academy of Sciences with regards to cooperation on the breeding and release of Persian leopards in the Russian Caucasus mountains. As a first step, by transfer recommendations issued by the EEP coordinator and through the negotiations of the TAG chair, a proven breeding pair of leopards has been sent from Lisbon Zoo to the Sochi Breeding Centre in Caucasus in October 2012. The latest news is that the female of the pair is pregnant.

However the Persian leopards are not the only breeding programme linked to *in situ* conservation. In 2012, 13 out of the 21 EEPs/ESBs were at least linked to one *in situ* conservation programme. For instance, the black-footed cat (*Felis nigripes*) research in progress in South-Africa is ongoing for 20 years and the snow leopard (*Uncia uncia*) conservation network are great examples where EAZA zoos get involved.

MARINE MAMMAL

TAG Chair: Gerard Meijer, Ouwehands

Dierenpark, Rhenen, The Netherlands

TAG Vice Chair: Claudia Gili, Acquario di Genova, Genova, Italy

The EAZA Marine Mammal TAG oversees the running of two EEPs (for bottle-nosed dolphin (*Tursiops truncatus*) and Caribbean manatee (*Trichechus manatus*)) and four ESBs (for Patagonian (*Otaria byronia*) and Californian (*Zalophus californianus*) sea lions, South American fur seal (*Arctocephalus australis*) and grey seals (*Halichoerus grypus*)). In 2012 the TAG met during the EAZA Annual Conference in Innsbruck to discuss the developments in the breeding programmes.

The Bottlenose dolphin EEP organised a meeting with the newly appointed Species Committee to discuss successes and challenges. From a population perspective the EEP is functioning well. The Species Committee discussed various topics including;

- Disease evaluation (*Herpes virus*, *Papilloma virus*, *Brucella ceti*, *Mycobacterium marinum*);
- Implementation of breeding and transfer recommendations and the role of various stakeholders in this process;
- Progressing on a gamete storage project; and,
- Publication of breeding programme related information such as studbooks and guidelines.

The appointed group working on the compilation of the EAZA husbandry guidelines for pinnipeds made good progress in 2012 and produced an extensive new draft version. The TAG aims to finalise the final draft version in 2013.

For the Patagonian sea lion ESB, tuberculosis (TB) is the main challenge the programme is facing. The programme cooperates closely with the TB specialist group of the European Association of Zoo and Wildlife Veterinarians (EAZWV). The group helps testing animals in the population and as such is making progress towards disguising animals that are infected and those that are not. Colonies in seven EAZA institutions were found to be fully negative in 2012 which was positive news. Also, progress was made in relation to the TB tests which have been further developed and refined, making them more reliable for TB testing in pinnipeds.

The Marine Mammal TAG issued a position statement in 2010 against the import of sea lions from the southern hemisphere, particularly South America. According to information received from the Latin American Association of Zoos and Aquariums (ALPZA) the authorities in Chile and

Peru are considering banning the export of sea lions from their countries.

Niels van Elk, Harderwijk, the World of the Sea is currently working on a draft husbandry guidelines for walrus (*Odobenus rosmarus*). It will be discussed by specialists and after revision be published in 2013.

For 2013-2014 the Marine Mammal TAG is looking into reviewing its Regional Collection. For that purpose the TAG is aiming to carry out a survey to determine current and future space availability in EAZA members for marine mammals.

EQUID

TAG Chair: Achim Winkler, Zoo Duisburg, Duisburg, Germany

TAG Vice Chair: Ulrike Rademacher, Wilhelma, Zoologisch-botanischer Garten Stuttgart, Stuttgart, Germany

TAG Vice Chair: Jaroslav Simek, Zoologická zahrada Praha, Prague, Czech Republic

The annual meeting of the Equid TAG took place on 28 September 2012 during the EAZA Annual Conference in Innsbruck. Jaroslav Simek took part as the new vice chair for the sub-group of Asiatic equids. He succeeded Waltraut Zimmermann, who retired from her position at Zoologischer Garten Köln but will continue to work for the TAG as a scientific advisor. Lydia Kolter, also from Zoologischer Garten Köln, took over Waltraut's position as coordinator for the Przewalski's horse (*Equus przewalski*) EEP.

A total of six EEPs plus a monitoring programme for the maneless zebra, a cline of the plains zebra, are managed under the supervision of the Equid TAG. Several of the species are also being coordinated on an international studbook level. All species programmes run efficiently and all of them combine both *ex situ* and *in situ* efforts.

An update of the various species programmes was given by the respective coordinators during the EAZA conference. The EEP population of the Grevy's zebra remains stable. Recent research included a survey on anesthesia, vaccination and deworming, which was also being carried out for the Hartmann's mountain zebra (*Equus zebra hartmannae*). In the field, efforts are focused on the National Conservation Strategy for the species in Kenya, to develop a stripe pattern database, to collar individual zebras, to undertake a disease research, to set up a drought relief programme and to extend the study and research area into the far north of the distribution of the Grevy's zebra.

The Hartmann's mountain zebra EEP is only slowly increasing and still short of the long-term goal of 150 animals, as outlined in the Equid TAG Regional Collection Plan from 2003. Holders of common plains zebras are urged to keep the threatened mountain zebra instead. The EEP continues to support a research study on the habitat use of zebras in Namibia.

The Somali wild ass (*Equus africanus somalicus*) is still considered as one of the rarest mammals in the world and it is listed as Critically Endangered on the IUCN Red List. Conservation work and research are taking place both in Ethiopia and in Djibouti. A workshop on the conservation activities in Djibouti was initiated by the IUCN and the CBSG in conjunction with Zoologischer Garten Basel and Zooparc de Beauval in early 2012.

The EEPs for the Persian onager (*Equus hemionus onager*) and the Turkmenian kulan (*Equus hemionus kulan*) continue to struggle. New holders for both species are urgently required to be able to further expand the captive populations. The scientific status of the two onager and the kulan are still undergoing revision, with some authors considering them to be subspecies rather than separate species. A research project is being implemented to determine the genetic relationship of the two. Further field work in Iran includes a study on the movement, habitat use and population genetics of the onager. A meeting with Iranian delegates took place in Hamburg in 2012 in an effort to strengthen the cooperation between the Onager EEP and the Yazd Breeding Centre in Iran.

For the kulan efforts are under way to establish individual animals in several nature reserves in Germany, Portugal and Spain. A population survey in Turkmenistan is being carried out by WWF Russia. Kulan are also living in neighboring Kazakhstan, with the exact numbers unknown.

There is an increased request for Przewalski's horses from other zoo regions. There is also a demand to introduce more horses into nature reserves. In Mongolia the population is slowly increasing following the severe crash during the harsh winter in 2009/2010.

An International Wild Equid Conference with more than 110 delegates took place in Vienna, Austria in September 2012 with a wide variety of topics ranging from behaviour, diet, habitat use, population ecology and veterinary medicine.

Great interest is shown by the AZA Equid TAG to use assisted reproductive techniques for reproduction among wild equids in importing semen from the EEP populations of onagers and Somali wild asses to artificially inseminate animals in the AZA region.

Case study: Reintroduction project of the Przewalski's horse in the Great Gobi B National Park in Mongolia

In the late 1960s the last free-roaming Przewalski's horse died in central Asia and the species was considered Extinct in the Wild according to IUCN Red List status. A reintroduction programme was initiated with support of the Przewalski's horse EEP to re-establish a population of horses in the Mongolian desert. The first captive-born Przewalski's horses were transported to the Gobi desert in 1992 and subsequently released back into the wild, where the horses soon adapted to the harsh environment. Over the years more horses were imported from European zoos and breeding successes improved annually. Since 1999 the International Takhi Group has been coordinating the reintroduction efforts. The population of the Przewalski's horses in the Gobi desert increased to a total of 137 animals in 2009, when a severe winter period led to a crash of the population, with only 48 horses surviving.

Since that harsh winter the population of Przewalski's horses has recovered remarkably. To date the population numbers 77 horses in the Gobi desert, including 4 mares, which were imported from Europe in 2012. Similar recoveries were noted at the other two reintroduction sites in Mongolia, in the Hustai National Park and in the Khomintal Nature Reserve.

For the 20th anniversary of the reintroduction of the Przewalski's horse in Mongolia in 2012 an international conference was organized in Ulaan Baator, which was attended by Przewalski's horse experts from around the globe. At the end of 2012 a proud count of some 350 wild Przewalski's horses living in Mongolia was made.

RHINO

TAG Chair: Friederike van Houwald, Zoologischer Garten Basel, Basel, Switzerland
TAG Vice Chair: Lars Versteeg, Safaripark Beekse Bergen, Beekse Bergen, The Netherlands

The vision and mission of the EAZA Rhino TAG are to have a healthy, viable population of free ranging and intensively managed rhinos ranging through intact ecosystems, where they are valued and cherished both locally and globally, and to ensure all captive populations are healthy, self sustaining and genetically viable and are capable of being an effective tool in support of rhino conservation in the wild.

The EAZA Rhino TAG met twice during 2012, at the mid-year hoofstock TAGs meeting at Marwell Wildlife and at



INDIAN RHINOCEROS (*RHINOCEROS UNICORNIS*) © TORBEN WEBER



INDIAN RHINOCEROS (*RHINOCEROS UNICORNIS*) © TORBEN WEBER

the EAZA Annual Conference in Innsbruck. A major aim is to continue to strengthen forces with the *in situ* partners to tackle the huge poaching problems throughout the year. For the TAG meeting in Innsbruck, the executive director of Save the Rhino International (SRI), Cathy Dean, and the chair of the IUCN African Rhino Specialist Group and member of the EAZA Rhino TAG, Mike Knight, were invited to speak about their conservation work and all efforts undertaken to stop the poaching surge. Furthermore, Rob Ogden has joined the TAG as genetic advisor.

Due to the high poaching numbers of rhinos (see case study), the Rhino TAG urges all rhino holders, to support *in situ* conservation projects. Further information can be downloaded from the EAZA Rhino TAG workspace in the member area of the EAZA website.

The Black rhino (*Diceros bicornis*) EEP is stable and can be found in 15 EAZA zoos. EEP participants are encouraged to become more proactively involved with *in situ* conservation projects.

The Indian rhino (*Rhinoceros unicornis*) EEP is increasing, and it is important that new holders are allocated and build their facilities within 2 to 3 years after having committed to participating in this EEP.

The white rhino (*Ceratotherium simum*) population is developing towards a sustainable level. More animals are starting to breed and initiatives undertaken to stimulate breeding include: exchange of non-breeding males/females, exchange of young females out of their maternal herd, transfer of young males to bachelor groups etc. Partly because of these initiatives, the future does look much brighter for the sustainability of this EEP than a couple of years ago.

Case study: Rhino poaching crisis

In the past 5 years, rhino poaching incidents have dramatically increased. In 2012 alone, 668 rhinos were poached in Africa and around 50 were poached in Asia. These figures are constantly rising and predictions have been made that the extinction of the *Rhinocerotidae* may be something we could encounter in the near future if poaching continues. The demand for horn, especially in Vietnam, is increasing. In Vietnam, rhino horn is not used for traditional Chinese medicine purposes, but rather as a cure for 'hangovers' or as a status symbol. To counter act these developments and form stronger bridges between zoos and field conservationists, the EAZA Rhino TAG has invited Dr. Mike Knight, the IUCN African Rhino Specialist Group (AfRSG) Chair, to become a member of the EAZA Rhino TAG. In return, the EAZA Rhino TAG Chair has been invited to become a member of both IUCN Rhino Specialist Groups. In 2012, 110 EAZA zoos participated in rhino breeding programmes. Furthermore 20% of these breeding programme participants back up the *ex situ* efforts by directly supporting *in situ* conservation projects. For 2013 the Rhino TAG is aiming at increasing this figure, including private individuals.

TAPIR AND HIPPO

TAG Chair: Bengt Holst, Copenhagen Zoo, Copenhagen, Denmark

The EAZA Tapir and Hippo TAG had its annual meeting on 29 September during the EAZA Annual Conference in Innsbruck. During the meeting, Dr.med.vet. Christian Walzer from the Research Institute for Wildlife and Ecology in Vienna gave a presentation on fertility in common hippos (*Hippopotamus amphibius*) and the challenges this provides for the captive management. The species coordinator for the lowland tapir, Aude Desmoulins, Zooparc de Beauval, presented a concept of eco-tourism for the benefit of lowland tapir (*Tapirus terrestris*) research and conservation as

conducted by the chairman of the IUCN/SSC Tapir Specialist Group, Patricia Medici, in the Pantanal, Brazil, and the TAG chair gave a report from the V International Tapir Symposium in Malaysia, October 2011 on behalf of Patricia Medici. Special attention in this report was given to an exciting project going on in Brazil regarding the possible existence of a fifth species of tapir. The new species – if it is a unique species - is darker in colour, smaller in general size, has shorter legs (is the only living species with the femur shorter than the mandible), lower mane as a consequence of a lower sagittal crest in the skull, which starts at the fronto-parietal suture as opposed to the situation in lowland tapirs in which it starts well into the frontal. This also makes the area between the eyes broader than in lowland tapirs. The idea of a fifth tapir species is based on morphological analyses of mostly skulls found in the Amazon and on tapirs captured on camera traps. Whether or not the data are valid and there actually is a fifth species is still to be proven, but the data so far is interesting and worth addressing.

Imports from the wild or from range countries in general have been discussed several times for the Malayan tapir (*Tapirus indicus*) for which the EEP population is rather small. But due to the fact that tuberculosis (TB) is a significant problem in the two tapir EEPs the TAG Chair has stated that no Malayan tapir imports from the wild or from range countries will be accepted until the TB situation is under control. This also goes for any transfer of tapirs within the EEP region. All tapir holders are obliged to test their animals for TB, and only tested animals should be moved. This was stressed during the annual meeting, and the situation will be followed closely by both the TAG and the EAZA Veterinary Committee.

During the reporting of the various programmes under the TAG the following problems and recommendations were highlighted:

Lowland tapir EEP: In order to be able to move animals around with certain flexibility it is requested from the holders that they make sure they have the ability to keep any offspring for at least 18 months. Furthermore TB tests were launched in line with the ones being implemented for the Malayan tapirs. No moves should take place without having tested the tapirs negative for TB.

Malayan tapir EEP: A thorough cleanup of the studbook data, including historical data, has more than doubled the number of founders in the population. This will be reflected in the coming recommendations.

Pygmy hippo EEP: There is still a heavy bias towards

females in the EEP population, and since it is difficult to find new holders within the EAZA community it has been necessary to move a number of females out of the EEP. New holders are consequently urgently needed in order to get the flexibility necessary for reaching the target population.

Common hippo ESB: The ESB is facing certain challenges to do with unknown founders, a male bias in the population and expensive transport costs.

PIG AND PECCARY

TAG Chair: Alastair A. Macdonald, Royal (Dick) School of Veterinary Studies, The University of Edinburgh, Edinburgh, United Kingdom

TAG Vice Chair: Jochen Reiter, Zoo Duisburg, Duisburg, Germany

In addition to the relatively large numbers of Eurasian wild pigs (*Sus scrofa*), and various examples of rare breeds of domestic pigs (*Sus scrofa domestica*) held in EAZA zoos, there are currently four species of Asian and African wild pig in EAZA managed programmes: Babirusa (*Babirusa babirusa*) EEP (Thomas Kauffels, Opel Zoo) from Indonesia; Red river hog (*Potamochoerus porcus*) EEP (Jochen Reiter, Zoo Duisburg) from Africa; Visayan warty pig (*Sus cebifrons*) EEP (Angela Glatston, Blijdorp) from the Philippines; Warthog (*Phacocoerus africanus*) ESB (Ceri Robertson, Edinburgh) from sub-Saharan Africa. Towards the end of 2012 the process of transferring the latter to Ross Snipp (Flamingo Land) was under way. Each of these programmes is being actively managed, and improvements in the methods being used are implemented annually. The Babirusa EEP evaluation was completed this year.

In addition, the TAG continues to keep a watchful eye on other wild pig species which are not in European collections, but which are sustained in their home countries by contributions of funding and other resources from European zoological collections. These include the Pigmy hog (*Porcula silvanica*) from Assam, India, and the Javan Warty Pig (*Sus verrucosus*) from Java, Indonesia. Conservation breeding efforts with both of these species are bearing fruit, with sufficient success for the reintroduction of the former into the wild and the multiplication of numbers in the latter. The same types of breeding success have been achieved for the red river hogs and the Visayan warty pigs in EAZA collections. Expansion in the numbers of these creates a need for increased numbers of zoos willing to hold them. Husbandry manuals for both these species are currently being prepared.



JAVAN WARTY PIGS (*SUS VERRUCOSUS*), CIKANANGA, INDONESIA © FLORIAN RICHTER

The EAZA population of Babirusa reflects more acutely the need of all the pig species for an improved founder base. In the (distant) past there was not the same awareness of the requirement to have a sufficiently large number of founders to secure a broad genetic variation in the European collections. As a consequence, ongoing approaches are being made to collections in Southeast Asia in the search of an infusion of additional breeding stock. In parallel with these, detailed studies of the genetics of wild and zoo babirusa over recent years have generated results that shed light on both the current and historical situation. The current zoo population appears to represent genetic material no longer living in the wild, and also seems to reflect contributions of genetic material from more than one part of the island archipelago around Sulawesi.

The peccaries now in EAZA collections include the Chacoan peccary or tagua (*Catagonus wagneri*) from the Chaco, South America; the white-lipped peccary (*Tayassu pecari*) from South America; and, the collared peccary (*Pecari tajacu*) that ranges from South America to the southern United States of America. Detailed genetic studies of all the peccaries are required, but are particularly needed for the collared peccaries. This year the Chacoan peccary was reintroduced

into EAZA collections for conservation breeding purposes as part of the current Regional Collection Plan (RCP). This is also an initial contribution towards the very active network of peccary research and conservation efforts being carried out in South America. IUCN and European zoo links provide ongoing support to these. Christopher Scala (Parc Animalier de la Haute-Touche Muséum National d'Histoire Naturelle) has recently agreed to manage the TAG's oversight of the peccaries in EAZA zoos.

The TAG participated in the hoofstock TAGs meeting in Marwell Zoo in June 2012 and was able to explore elements of the material that will comprise the re-evaluation of the EAZA Pig and Peccary TAG Regional Collection Plan. A number of TAG members travelled to Southeast Asia to obtain updated situation reports of the wild pigs in that region, information that will be fed into the Regional Collection Plan review. Links with our AZA colleagues were strongly maintained through meetings with Jeff Holland (Los Angeles Zoo).

Case study

The Babirusa (*Babirusa* spp.), Warty pigs (*Sus* spp.), and Anoa (*Bubalus* spp.) are endemic to the island of Sulawesi and neighbouring islands of Indonesia. Habitat fragmentation due to deforestation and illegal logging are likely to be decreasing their genetic variation. As the morphometrics and genetics of all three species are little known, the Sulawesi Ungulates project was initiated. An international team was put together, with expertise in a number of inter-related fields: genetics from Belgium, archaeological genetics from England, conservation and small population genetics from Belgium, skeletal 2D and 3D morphometrics from England, Scotland and France, statistical analyses from Scotland, biogeography from Australia, endemic mammal biology from Indonesia, England and Scotland and museum taxonomy from Scotland, Sweden and Indonesia. Skulls were measured and samples from wild and captive populations were analysed for microsatellite and mitochondrial DNA markers. Preliminary results show different levels of genetic diversity in wild and captive populations, hybridisation and significant population structure according to geographic locations. These data will aid the further development of Conservation Action Plans and the management of Breeding Programs.



FEMALE BANTENG (*BOS JAVANICUS*) © WCS-THAILAND PROGRAM



GAUR GROUP (*BOS GAURUS*) © WCS-THAILAND PROGRAM

CATTLE AND CAMELID

TAG chair: Terry Hornsey, Africa Alive! Lowestoft, United Kingdom

TAG vice-chair: James Burton, IUCN SSC Asian Wild Cattle Specialist Group

The Cattle and Camelid TAG made huge progress in 2012, not only with regard to the EEP and ESB programmes that fall under its remit, but also with both the conservation and research projects that it is involved in. A very productive mid-year meeting was held at Marwell Wildlife in June and this was followed by both 'closed' and 'open' meetings held during the EAZA Annual Conference in Innsbruck.

The TAG continued to work with and forge new links with the IUCN Asian Wild Cattle Specialist Group (AWCSG) and this was recognised by EAZA during the Annual Conference in Innsbruck, where the TAG was identified as an exemplar of how links between TAGs and the IUCN can be both symbiotic and hugely productive, and why they should be actively encouraged.

The evaluation of all EEPs was completed in 2012 and results from the evaluation process were summarised. Whilst issues were raised with one or two of the programmes, the TAG was already aware of them and had already started to work hard to resolve them, prior to their evaluation.

Consequently, by the end of 2012, all programmes were either being run well or were already showing positive signs of improvement and, hopefully, this trend will continue in 2013.

At the TAG's 'open' meeting, held during the EAZA Annual Conference in Innsbruck, Gary Batters, Banham Zoo / Africa Alive!, relinquished his position as TAG chair, due to other commitments. During the 7 years that Gary was at the helm, the TAG moved forward in leaps and bounds and all of the programmes benefited greatly from his leadership and expertise. The position of TAG chair has been taken by the TAG's existing vice-chair Terry Hornsey, Africa Alive!, and James Burton (chair of the IUCN SSC AWCSG) was confirmed as the new TAG vice-chair. James has been heavily involved with the TAG for some years as Conservation & Research Advisor and has been instrumental in helping the TAG to forge links with IUCN.

Also in 2012, the TAG started to forge stronger links with their American counterparts, the Association of Zoos and Aquariums (AZA) Bison, Buffalo and Cattle TAG, and at the TAG's 'open' meeting in Innsbruck Jeff Holland from Los Angeles zoo gave an update on behalf of Lisa Smith (the new AZA Bison, Buffalo and Cattle TAG Co-ordinator), on the exotic cattle species situation in the U.S.A. The Cattle and Camelid TAG hopes to continue to try and work closely with the AZA TAG in 2013, as both TAGs feel it is important the programmes embrace and benefit from global population management.

The TAG continued its close links with the IUCN Asian Wild Cattle Specialist Group's Captive Breeding Working Group, which is coordinated by TAG chair Terry Hornsey. As already mentioned, the TAG has had a very active research/conservation arm for some time and due to our close collaboration with the IUCN/SSC Asian Wild Cattle Specialist Group, this has enabled us to forge strong *ex situ* and *in situ* conservation links with projects that are designed to aid both the TAG's *ex situ* conservation aspirations and the AWCSG's *in situ* projects. It was felt that defining each others' aims for the short and mid-term will aid in not only helping the two groups to see where they might be able to work with each other in the future, but will also help greatly in the planning of projects and the utilisation of the skill base that is available within both groups. Consequently, the TAG has produced the first draft of an MoU between EAZA and the IUCN Asian Wild Cattle Specialist Group and it is hoped that it will be signed in 2013.

Another area that the TAG was involved in, in 2012, was assisting the AWCSG with a draft MOU with Indonesia's

Ministry of Forestry to help with conservation initiatives in Indonesia. The TAG also continued to support Anoa genetic studies in both wild & captive animals being carried out by James Burton and to work closely with the IUCN/SSC AWCSG on projects looking into the Banteng (*Bos javanicus*) EEP population in preparation for sampling, to check whether or not the population is hybridised with Bali Cattle and conservation genetics of the Banteng: Planning research to understand the in-situ population structure and level of hybridization with Bali cattle.

Of particular relevance last year, was Bill Robichaud (IUCN's AWCSG Saola Working Group coordinator) approach to help put together an 'Action Plan' that will hopefully allow any further 'Incidental captive' saola (*Pseudoryx nghetinhensis*) to receive the professional care that it requires, quickly and in an appropriate environment. Consequently, the TAG chair Terry Hornsey was asked to form an EAZA Cattle & Camelid TAG 'Intensive Management Saola Working Group' comprising other members of the TAG and is working very closely with the IUCN Saola Working Group's own 'Intensive Management Working Group' to put together a quick response team of experts and guidelines, which would be followed should an animal be brought into a 'captive' situation. A 'European Cattle & Camelid TAG Intensive Management of Saola Group Action Plan' (1st Draft) has now been drawn up and is being reviewed and we are also looking at drawing up plans for a rescue facility where any 'Incidental captive' saola could be taken and held.

DEER

TAG Chair: Noam Werner, The Tisch Family Zoological Gardens, Jerusalem, Israel
TAG Vice Chair: Christian Kern, Tierpark Berlin-Friedrichsfelde, Berlin, Germany

The Deer TAG is responsible for three taxonomically distinct groups: the chevrotains (mouse-deer; Tragulidae), musk deer (Moschidae) and true deer (Cervidae). In 2012, the TAG faced complexities in the redefinition of ungulate taxonomy, which is still not fully resolved or unanimously accepted; following the taxonomy used in Wilson et al. (2011) Handbook of the Mammals of the World: Hoofed Mammals v. 2; Lynx Edicions, a total of 70 species fall under the remit of the Deer TAG (10 Tragulidae; 7 Moschidae; 53 Cervidae).

The first draft of the renewed Deer TAG RCP was presented during the 2010 EAZA Annual Conference and was revised during 2011. During 2012 a decision tree for the RCP was



MESOPOTAMIAN FALLOW DEER (*DAMA MESOPOTAMICA*) © NOAM WERNER

developed along with two new tools to join and complete the RCP: the TAG Species Recommendation Table and the “Choose Your Deer” tool were created and all three are available on the TAG workspace on the EAZA website. During 2013 a revised, expanded version of the RCP is expected to be published.

A comprehensive taxonomical review and husbandry manual, translated from German to English by Klaus Rudloff, Berlin Tierpark, is now being edited and will be published for the use of the EAZA community during 2013.

Several new breeding programmes were formed during 2012 and some personal changes took place in other programmes. Some of these changes are still pending the final confirmation of the EEP Committee, but all new programmes and personnel changes should be finalised during early 2013.

- Klaus Rudloff (Berlin Tierpark) - stepped down as the EEP coordinator for both the Mesopotamian fallow deer (*Dama mesopotamica*) and the Vietnamese sika deer (*Cervus*

nippon pseudaxis) programmes. The TAG wishes to greatly thank Klaus for many years of dedicated work.

- Thomas Kauffels (Kronberg) – new Mesopotamian fallow deer EEP coordinator
- Jana Pluhackova (Ostrava) – new Vietnamese sika deer EEP coordinator
- Matt Hartley (Chester) – new Burmese brow-antlered deer (*Rucervus eldii thamin*) ESB keeper (**new programme**)
- Lidia Przybylska (Poznan) – new Hog deer (*Axis porcinus*) ESB keeper (**new programme**)
- Douglas Richardson (Highland Wildlife Park) – stepped down as Bactrian deer (*Cervus elaphus bactrianus*) ESB keeper
- Pavel Krasensky (Chomutov) – new Bactrian deer ESB keeper
- Jan Pluhacek (Ostrava) – new Altai wapiti (*Cervus canadensis*) Monitor-Person
- Darren McGarry & Ceri Robertson (Edinburgh) – new Siberian musk deer (*Moschus moschiferus*) Monitor-Person

- Noel Carey (West Midlands Safari Park) – new Formosan sika deer (*Cervus nippon taioanus*) Monitor-Person
Several TAG members, including the TAG chair, took part in the joint hoofstock mid-year meeting at Marwell Wildlife (UK). The major outcome of the participation in the meeting was the development of two new collection planning tools following the discussions during the meeting. These tools are now available on the TAG workspace on the EAZA website.

Cooperation with the IUCN/SSC Deer Specialist Group (DSG) is on-going. The TAG chair, Dr. Noam Werner, is a member of the DSG and as part of his activity joined the sub-committee for Mesopotamian fallow-deer in Iran. Contacts with several *in situ* projects had been made and are ongoing. Several TAG members have been in contact with Wildlife Trust India regarding assistance to a barasingha translocation project in Assam and, together with colleagues from the AZA, to a Hanglu (Kashmir stag *Cervus elaphus hanglu*) captive breeding project in Kashmir. The TAG also contributed to the development of an Indochinese hog-deer conservation project in Cambodia under the lead of Fauna & Flora International in the country. During the 2012 EAZA Annual Conference contact was made with William Robichaud of the IUCN/SSC Saola Working Group who gave a talk at the Deer TAG meeting about the possible overlap between saola conservation and the conservation of muntjacs and other deer species in the same region. Plans for future cooperation to promote Southeast Asian endangered muntjacs (especially the large-antlered muntjac) have been made.

Case study Deer collection planning tool set

Following discussions, it became clear that the Deer TAG RCP does not truly reflect the species which the TAG would like zoos to keep because of potential discrepancies between recommended levels of management and the conservation importance of certain species. Consequently, strictly following the RCP may cause zoos to forego opportunities to obtain threatened or otherwise important species that do not have a management recommendation or a running programme. This triggered the creation of two complementary tools for the RCP, which will give a better view of what species the TAG actually recommends for keeping.

The “TAG Species Recommendation Table” weighs RCP recommendations together with other factors and presents lists of species that the TAG either highly recommends, species of lower priority, and species that should be replaced and certainly not obtained.

The second tool, “Choose Your Deer”, is a sort-able Excel

table that allows users to sort species according to various parameters, such as the TAG recommendations, conservation status, and various biological traits. Depending on the user’s priorities, and consequent choices, a small number of species or even a single species will remain on the list, which will make the decision regarding what species to keep an easier one.

Both tools are available for download in the Deer TAG workspace on the EAZA website under the “Choose your deer” category in the Document Library.

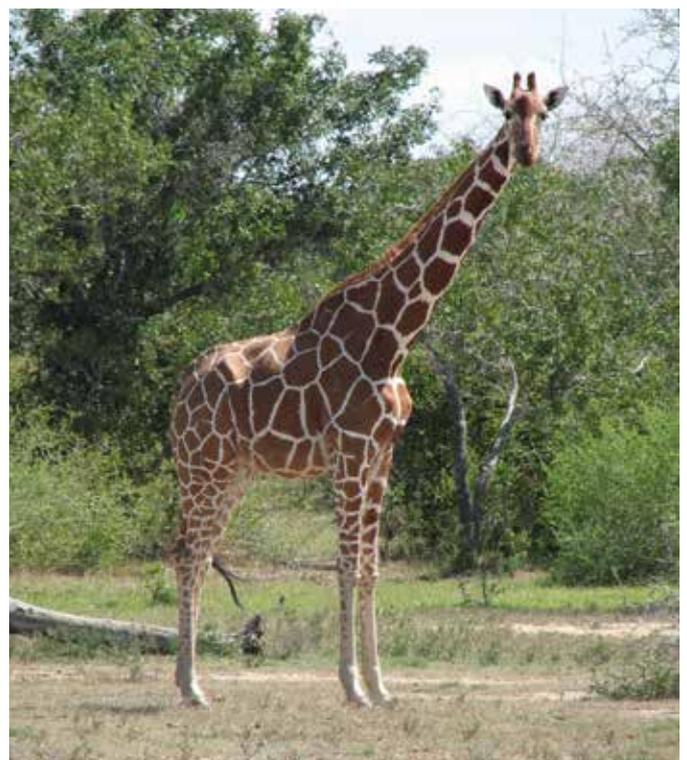
ANTELOPE AND GIRAFFE

TAG chairs: Frank Rietkerk, Apenheul, Apeldoorn, The Netherlands (until October 2012) and Jens-Ove Heckel, Zoo Landau, Landau, Germany (from October 2012)

TAG Vice Chair: Angela Glatston, Diergaarde Blijdorp, Rotterdam, The Netherlands

Vision: Healthy, viable, free ranging populations of antelopes, giraffes and okapis, ranging through intact ecosystems, valued and cherished both locally and globally.

Mission: To maintain healthy, genetically viable, self-



RETICULATED GIRAFFE (*GIRAFFA CAMELOPARDALIS RETICULATA*) © WERNER SCHRÖDER



IUCN ANTELOPE SG MEMBERS, JENS-OVE HECKEL AND HOUSSEIN A. RAYALEH, IN DJIBOUTI

sustaining, captive populations of okapis and a representative cross-section of antelope and giraffe taxa. These populations will be: ambassadors, drawing attention to the plight of these taxa in the wild; a focus for fund-raising for conservation; a source of individuals for re-stocking and reintroduction purposes; and, a research resource to improve husbandry, welfare and in situ conservation.

The Antelope and Giraffe TAG continues to be one of the largest and most complex TAGs, representing a range of approximately 50 species (and approximately 65 taxa) held in European zoos. We have always taken it as our remit to retain as many species in European collections as possible. The stringent veterinary regulations imposed by the EU mean that it continues to be difficult to obtain animals from outside of the EU, whether it is a desirable taxon or to bolster our antelope and giraffe populations. Therefore the majority of species are recommended for EEPs, ESBs or monitoring. Currently the TAG entails 12 EEPs and 9 ESBs; the remaining species are actively monitored by either a person or the TAG.

In order to better manage such a large number of species and programmes, the TAG is subdivided into five taxonomic (arid land, woodland and savannah species, mini antelopes and giraffes) and three thematic (conservation, research and import/quarantine) sub-groups. Each of these sub-groups has its own leader who monitors activities and developments relevant to that group.

2012 was definitely a year for changes in this TAG. In addition to a new TAG chair the group has new coordinators for arid land and woodland antelopes and a new coordinator for the Arabian oryx (*Oryx leucoryx*) EEP. The mid-year meeting of 2012 was held at Marwell Wildlife in June. This was part of a more general hoofstock TAGs meeting which gave us opportunity to discuss issues which effect the management of

all hoofed stock, key amongst which is the problem of imports and veterinary regulation.

The performance of four EEPs run by the TAG was evaluated; all seem to be running smoothly although some minor recommendations for improvement were made. The option of joint Species Committees, covering several related taxa, was again raised. The TAG is again planning to take this issue back to the EEP Committee for discussion.

The TAG also decided to look at different ways of compiling husbandry and management guidelines. There is a feeling that zoos should think more about the species they hold rather than literally following concrete recommendations. It was suggested that zoos should be encouraged to design their enclosures on the basis of information provided in the guidelines rather than instructions. This could be assisted by providing more videos and photos as part of the guidelines package. It was also recommended that new ways of producing these, for instance covering several species in one, should be looked into.

Since the recent publication of the volume dealing with ungulates in Wilson et al. (2011) Handbook of the Mammals of the World: Hoofed Mammals v. 2; Lynx Edicions, there has been much discussion on taxonomy and the way this impacts on the Antelope and Giraffe TAG's programmes. During the mid-year meeting, Helen Senn, Royal Zoological Society of Scotland, gave a presentation on the species concept and how DNA can help to resolve some of the questions – and how DNA then raises further questions. We do need to understand the phylogenetic tree but we do not yet have all the genetic data to do this. A coherent naming system is also important. The TAG needs to decide whether or not to keep populations apart or to mix them. But perhaps the most important recommendation was that zoo populations must be managed for a purpose, e.g. reintroduction versus a display population.



SCIMITAR-HORNED ORYX (*ORYX DAMMAH*)

This purpose will dictate eventual decisions regarding the management of that particular population.

During the EAZA Annual Conference in Innsbruck, Jens-Ove Heckel, Zoo Landau, took over as chair of the TAG. The entire TAG wants to thank outgoing chair Frank Rietkerk, Apenheul, for his achievements and the countless hours he has dedicated to foster and lead this TAG in the past 17 years. Furthermore, the TAG is looking forward to Jens-Ove continuing this great tradition, and his long-term involvement in the IUCN Antelope Specialist Group and expertise in international species conservation further enhancing the synergies between *ex situ* and *in situ* activities.

As a final note the 2013 mid-year meeting will take place in Zoo Landau from 22nd to 24th May. The main aim of this meeting is to focus on the future of husbandry guidelines and taxonomy.

Case study: Captive breeding and conservation: the case of the scimitar-horned oryx – Marwell Wildlife

The scimitar-horned oryx (SHO) *Oryx dammah* is a nomadic arid-adapted antelope that was once abundant, inhabiting the vast aridland steppes that border the Sahara. Over-hunting and competition with livestock drove the SHO to extinction in the wild in the late 20th century. Today the species only exists in captive and semi-wild conditions.

The demise of the wild SHO coincided with the growth of a large global captive population. This population is managed through the international studbook and coordinated breeding programmes. EAZA's European Endangered Species Programme (EEP) is the largest of these programmes with approximately 420 individuals in 55 institutions.

A number of reintroduction projects using EEP animals have taken place over the last 25-years, and populations of SHO have been established in eight fenced parks and reserves in Tunisia, Senegal and Morocco. Today these populations total 480 individuals. A global conservation strategy for the species has now been developed incorporating captive breeding and reintroduction.

Like so many species, the scimitar-horned oryx suffered rapid range contraction and plummeting population numbers until it became extinct in the wild. However, unlike other species, the scimitar's story has continued through extraordinary international collaboration, careful captive propagation and reintroduction back into its historic range.

SHEEP & GOAT

TAG Chair: Jean-Luc Berthier, Parc Zoologique de Paris, Paris, France

TAG vice-chair: Douglas Richardson, Highland Wildlife Park, Kingussie, United Kingdom (Royal Zoological Society of Scotland)

Currently the Sheep & Goat TAG oversees two EEPs, eight ESBs and monitors four other taxa. The new Saharan Barbary sheep (*Ammotragus lervia*) ESB, approved in February, is run by Gerardo Espeso Pajares (Estacion Experimental de Zonas Aridas) and Patrick Roux (Espace Animalier de la Haute-Touche) replaces Martin Krug (formerly Zoologicka zahrada Bratislava) as Nubian ibex (*Capra nubiana*) ESB keeper. The level of cooperation and coordination with our colleagues in the AZA Caprine TAG continues to increase with agreements for joint population management of Japanese serow (*Capricornis crispus* or *Naemohedus crispus*) and Nubian ibex; tentative discussions also took place regarding the joint management of Szechuan takin (*Budorcas taxicolor tibetana*). A comparable relationship with the relevant IUCN SSC specialist group is being actively pursued. To date our support for an *in situ* project has been the financing of a TRAFFIC survey of the trade in the various forms of Southeast Asian serow. This was again a joint effort with our American colleagues, who provided the bulk of the funding; the results of this study will be presented at the EAZA annual conference 2013 in Edinburgh.

Two formal meetings of the TAG took place in 2012. A joint hoofstock TAGs meeting, hosted by Marwell Wildlife, UK, in June, gave us the opportunity to discuss TAG specific topics as well as joint discussions with other ungulate TAGs of topics that were of common interest. Besides the Regional Collection Plan (RCP) update and programme reports within our individual meetings. In the joint session the need for a better use of the available genetics within populations was discussed, as well the promotion to import more founders to the various populations. This latter topic is based upon a chart that has been developed to clearly identify the current situation, need for and likely location of new founders. As the document covers a wide range of ungulate taxa, the idea is that once issues surrounding the import of ungulates through the BALAI directive 92/65/EEC are resolved, a consortium approach can be explored to maximise positive outcomes.

The regular TAG meeting was also held during the EAZA Annual Conference in Innsbruck, Austria, in September 2012. In order to give as much time as possible for the discussion

of key topics, the decision was made to move away from the traditional reporting scheme and issue written reports instead. The aim was for individual programme managers to discuss key issues or problems that were affecting the management of their populations. Similar to the mid-year meeting, the problem of a lack of founders and the need for more applied genetic research were major discussion points in Innsbruck.

Another issue that has been the subject of discussions is the production of surplus males, a problem common to all ungulate programmes where the species has a harem social structure. Different strategies, not exclusive from each other, were intensively discussed: all-male groups, birth control and mostly significantly the application where possible of a breed and cull policy in line with the EAZA statement on euthanasia.

Case study

A firm stance has been taken by the TAG to aggressively pursue solutions to relevant, crucial genetic questions. The key focal points for our genetic research plan are: a resolution to the validity of the differences between the nominate form of takin and *whitei* as this will have a significant impact on how we source new founders for the Mishmi takin population; clarity of the sub-specific origin and degrees of relatedness within and between the EAZA and the AZA Tadjik markhor populations; and a resolution to the validity of the named Barbary sheep taxa followed by a project to identify the taxonomic origins of the many captive and feral herds of uncertain origin so that their incorporation into or exclusion from conservation initiatives can be based on good information and not supposition.

Efforts to resolve the takin question have begun with the successful acquisition of key samples for comparison and a lab has been identified to carry-out the research. The markhor work has already begun with a coordinated research programme within Europe and North America, and the first results are expected in spring 2013.

Concrete developments concerning the Barbary sheep questions have still to be realised, but a lab has been identified that is willing to undertake the work and they already have a number of geographically important samples.