



TAG REPORTS 2016

EUROPEAN ASSOCIATION OF ZOOS AND AQUARIA





ABOVE: RED-BREASTED GOOSE (*BRANTA RUFICOLLIS*) © BERND MARCORDES; BELOW LEFT: PAINTED DOG (*LYCAON PICTUS*) PUPS AT YWP; BELOW RIGHT: RED TITI MONKEY (*CALLICEBUS CUPREUS*) WITH OFFSPRING © JAN VERMEER



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INTRODUCTION

EAZA's Taxon Advisory Groups (TAG) range from Fish and Aquatic Invertebrates to Penguins, and from Gibbon to Deer 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 2016 EAZA had 39 TAGs, 201 EEPs and 200 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 should 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 EAZA Best Practice Guidelines that reflect the best practice management of the respective taxa.

The TAG itself is led 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, the TAGs provide support to the EAZA EEP Committee in relation to various 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.

In 2016 the EAZA TAGs have worked incredibly hard, efficiently and productively right from the start until the very end of the year. The TAG Chairs and members have continued to contribute to the development of the new EAZA population management structure by sharing comments on the proposals and actively contributing to a successful series of discussions organised during the EAZA Annual Conference in Belfast, UK. The proposal was finalised at the end of 2016 and submitted to EAZA Council for approval.

Another important development that many EAZA TAGs contributed to and participated in was the second joint TAG Chairs meeting hosted by Henry Doorly's Zoo and Aquarium in Omaha, NE, United States. The EAZA TAGs have shown professionalism and leadership through active involvement in discussions and workshops, giving presentations and sharing of knowledge. Many TAG Chairs also stayed to attend the AZA Midyear meeting held back to back with the joint TAG Chairs meeting.

Enabled by a EU LIFE grant that EAZA was successful in obtaining, the EAZA Executive Office could work together with the TAGs and programme leaders on an additional number of Quick Population Assessments (QPAs) as well as Long-Term Management Plans (LTMPs). In 2016 EU LIFE supported LTMP meetings took place for: Eurasian lynx, Dalmatian pelican, wolverine, musk ox, bottlenose dolphin and Persian leopard, with another nine additional LTMPs added to the 2017 schedule.

A detailed overview of the activities of each of the TAGs 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 extends its thanks all the Chairs, members and breeding programme coordinators for their hard work in 2016.

TERRESTRIAL INVERTEBRATE

TAG Chair: Mark Bushell (Bristol Zoo Gardens, Bristol, UK)

TAG Vice-Chair: Tamás Papp (Chester Zoo, Chester, UK)

TAG Vice-Chair: vacant

The TAG structure has remained the same this past year, although we are now in the final stages of recruiting a second Vice-Chair which will help with efforts to be even more productive. Hopefully this will be realised in late 2017. Only one meeting was held in 2016, with the TITAG holding their reporting meeting during the EAZA Annual Conference at Belfast Zoo, UK, in September. In July 2017 the TITAG will be joining forces with the British and Irish Association of Zoos and Aquariums (BIAZA) Terrestrial Invertebrate Working Group (TIWG) to hold a symposium on invertebrates in zoological collections – this meeting will be held at Longleat Safari Park, Wiltshire, UK.

The Regional Collection Plan (RCP) continues to be updated as a living document, with a new version being released mid-2017. Discussions continue on the best way to present this document in future and the Chairs have proposed that the TITAG RCP be included in the first tranche of RCP reviews under the umbrella of the new population management structure. With so many species of invertebrate being kept in EAZA institutions it will continue to remain a living changeable document with regular small updates. Key Best Practice Guidelines for development have been identified and work will begin on their production, with drafts being produced late 2017.

The release of almost 3200 individuals of 10 species (11 taxa) of *Partula* in 2016 onto three islands of French Polynesia was a ground-breaking development in conservation terms for the Partulid snail EEP and American SSP. Of those 10 species, seven are classed as Extinct in the Wild, two are Critically Endangered and one Vulnerable according to the IUCN Red List of Threatened Species™. After four successful importations of *partula* populations from (list) zoos between 16th September and 4th November, population numbers for all but one species were monitored into the New Year.

Ex situ conservation of the Crau plain grasshopper (*Prionotropis rhodanica*) continues to go well, with Thoiry Zoo producing a large number of egg-pods – some of which will hopefully be reintroduced into habitat in the Crau in the south of France. Research has revealed that the species has an incubation period of at least two years and is reliant on weather conditions for successful development, so further research



ADULT FEMALE LORD HOWE ISLAND STICK INSECT (*DRYOCOCELUS AUSTRALIS*) © MAX BLAKE

is being implemented. An EAZA-based programme is being discussed, with Thoiry holding this when created. The potential for other European collections to be involved is still continuing to be discussed.

Rearing of the Lord Howe Island stick insect (*Dryococelus australis*) continues at Bristol Zoo Gardens, UK, with several adults reared from eggs received in November 2015 from Melbourne Zoo, Australia. Over three hundred eggs have been laid since September and the first hatches are expected from February 2017. An EEP was created in 2016 (held by Bristol Zoo) and discussions are being held with potential new holders of the species, including potentially linking the European population with San Diego Zoo Global, US, who were the only other collection successful in this latest attempt to establish the species outside of Australia.

A meeting was held in Funchal, Madeira, during May 2016 for the conservation of the Desertas wolf spider (*Hogna ingens*). A strategy based on IUCN guidelines was formulated and will be published mid-2017. A population was established in May 2016 at Bristol Zoo Gardens, with an EEP being created later that year. Several European collections are interested in participating in both the *ex situ* conservation work as well as field activities based on habitat restoration and surveying the spider population as well as other key endemic invertebrates and flora.

The Gooty sapphire ornamental spider (*Poecilotheria metallica*) ESB established in 2015, held by Bristol Zoo Gardens continues to develop, with several key transfers made in 2016 to bring together breeding pairs. It is hoped that we will have some successful reproduction in 2017 and will be able to increase the holders for this beautiful species of Critically Endangered spider.

EEP evaluations for both the Fregate beetle (*Polposipus herculeanus*) and Partulid snail (*Partula* spp.) were achieved

through 2016 and into early 2017 which will help aid the functioning of these important invertebrate conservation programmes.

FISH AND AQUATIC INVERTEBRATE

TAG Chair: Brian Zimmerman (Zoological Society of London, London, UK)

TAG Vice-Chairs: Max Janse (Elasmobranchs), (Burgers Zoo, Arnhem, Netherlands) ; Anton Weissenbacher (Freshwater teleosts), (Vienna Zoo, Vienna, Austria); Daniel Abed-Navandi (Marine teleosts), (Haus des Meeres, Vienna, Austria); Hugo Batista (Jellyfish), (Oceanário Lisboa, Lisbon, Portugal)

The last year brought a number of changes and positive developments within the FAITAG group. The newly launched Marine teleost TAG-subgroup has hit the ground running with a “mega-census” of marine fishes in European collections undertaken with Daniel Abed-Navandi’s guidance. The EEP Committee agreed to the establishment of a new Jellyfish TAG-subgroup under the leadership of Hugo Batista. The Freshwater teleost TAG-subgroup has launched its first Monitoring programme, for Arapaima. The longest running Elasmobranch TAG subgroup has gone from strength to strength with new programmes, new programme managers and greater participation from the aquarium community.

The FAITAG midyear meeting was generously hosted by Lisbon Oceanário, Portugal, from 31 May – 01 June, followed by a two day sustainable acquisitions workshop focussed on marine fishes. Although the number of attendees was small, the team covered a lot of ground and good progress was made in both elasmobranch and marine teleost work. A number of broad topics were discussed that pertained to all the all TAG-subgroups including how to design a good questionnaire to encourage maximum response and easy data extraction. This was particularly relevant due to feedback on the marine teleost “mega-census.” The group also explored the best template for development of the Regional Collection Plans. Although it was universally agreed that FAITAG couldn’t adopt the very detailed RCP analysis conducted by some other TAGs, due to the vast number of species under our remit, we did agree that developing a one-page document for each species identified on the RCP would be useful.

The group also felt that it would be useful to begin thinking

of each sub-section of FAITAG in a more independent way, given that their goals and management objectives are quite distinct. The proposal was suggested to call the sections under FAITAG as Sub-TAGS with each Vice-Chair called the Chair. This is designed to get everyone thinking of these sub-TAGs as distinctive ahead of their eventual splitting into fully fledged independent TAGS.

In 2016 a special fund was launched to conduct genetic research within the FAITAG. The FAITAG genetics fund started due to a kind financial offer from Oceanário de Lisboa. Two research projects have started due to this fund: 1. Geographic origin of the bluespotted mask ray (*Neotrygon kuhlii*). In scientific research this species has been mentioned to be a species complex. A preliminary research project was set up to see if genetic samples from ESB animals could be used as a tool to define the exact species and origin of all animals within the masked stingray studbook. This trial showed that it’s possible. 2. Paternity testing with the spotted eagle ray studbook (*Aetobatus ocellatus*). This is an ongoing project established in 2011 within the eagle ray studbook. Knowing the paternity makes it possible within the studbook to know where to send the young to, to prevent inbreeding in the future.

Elasmobranch

The Elasmobranches Vice-Chair is assisted by a steering committee, comprising seven members: three ESB representatives; three MON-P representatives and one assistant.

Exciting news regularly came in from the black tip reef shark ESB (274 sharks listed within the studbook in 2015). Different institutions are breeding this species regularly now, so about once a month there was news of either a mating, birth or updates of pups. The focus is now really on making the resulting births more successful.

Within the Elasmobranches group it’s important to know the changes over time in the European aquarium population. A census was sent out to 200+ public aquariums in the beginning of 2016. A similar census was done in 2011. 110 aquariums replied. The census result showed that 107 elasmobranch species can be found in European zoos and public aquariums, accounting for 10.3% of all species found in the wild.

44.9% of the aquarium population of species are reproducing. A report is made on the census and in 2017 a publication will be written on the results of the census in Journal of Zoo and Aquarium Research (JZAR). In 2017 another census will be sent out as part of a worldwide census in collaboration with American Association of Zoos and Aquariums (AZA).



HIREICOPULA © GEORG GLAESER

Freshwater Teleost

Javier González Sanz from Aquarium Zaragoza, Spain, started a Monitoring Programme for *Arapaima* species. Only in recent years it has been known that *Arapaima* is not a monotypic genus. At least two distinguishable species are kept in European aquariums. It is surprising to see that we still have very poor knowledge about such charismatic and regularly kept fish species like *Arapaima*. In this light a Monitoring Programme seems even more important to gather all information available and establish a care sheet and / or Best Practice Guidelines for *Arapaima*. The chances for other MON-P for some charismatic but also for some highly endangered and not well known species were evaluated.

We have still problems finalizing the RCPs for large fish families. For this reason the TAG Chair has been thinking about an easy and efficient way to filter large fish databases and will try to present some results at the next FAITAG meeting.

The attempt to combine *ex situ* with *in situ* activities is still challenging. Due to political and logistical reasons it's difficult to start projects in North Africa, Turkey and the Arabian Peninsula. There is still great interest from outside EAZA to participate in or to be responsible for a Monitoring Programme for endangered freshwater fish.

Marine Teleost

The newly formed group developed a mission statement to reflect the needs and goals for this group: *More marine bony fish species shall be bred by public aquariums and their keeping put on a more sustainable basis.*

They had their first meeting in June 2016 at the Oceanário Lisboa. There we decided to conduct a Pan-European census of fish held in public aquariums and formulated the questions asked in the census based on an earlier conducted preliminary test census.

We also started to work on a regional collection plan (RCP). We used a decision tree to find out which species to put on this RCP-list. Decisive factors within this tree were:

- Popularity of species
- Source – aquarium bred or wild caught
- Commercial trade impacts of species
- IUCN status of species
- Research potential of species
- Education message of species

From the insight gained with the preliminary test census the following four species were chosen to be key species in the Marine Teleost RCP and would benefit from collective husbandry and breeding efforts:

- Pterapogon kauderni*
- Chelmon rostratus*
- Paracanthurus hepatus*
- Labroides dimidiatus*

Concurrently the decision was made to form groups based on husbandry and ecological principles within species rich families to ease the full coverage of the thousands of species in the RCP.

Jellyfish

It was officially agreed by the EEP Committee in 27 September of 2016 that Hugo Batista, assistant curator from Oceanário de Lisboa would become a Vice-Chair of the EAZA Fish and Aquatic Invertebrates TAG with the responsibility of the Jellyfish TAG-subgroup. Planning commenced immediately with the first step to produce a questionnaire sending to different institutions in order to know what species each institution held, produced or captured and also the desired species. Data analysis will be made in order to understand how the populations of jellyfish are structured at aquariums in Europe in terms of produced species and wild captured ones. This will allow the creation of a network of knowledge that will more easily permit to each aquarium have the desired species and the knowledge to maintain them. It will also permit aquariums to choose and learn about species that may have

conservation significance in matters like fish larvae depletion or as invasive species due to the ocean temperature increase.

AMPHIBIAN

TAG Chair: Gerardo Garcia (Chester Zoo, Chester, UK)

TAG Vice-Chair: Olivier Marquis (Paris Zoo, Paris, France)

Management Programmes

We have now increased the number of single-species-monitoring programmes, from one species in 2015 to four species in 2016. New programmes now exist for: the lemur leaf frog (*Agalychnis lemur*) which has become an ESB (coordinator is Tim Skelton, Bristol Zoo); The black-eyed leaf frog (*Agalychnis moreleti*), which has become an ESB coordinated by Ben Baker (Chester Zoo) and finally the achoque (*Ambystoma dumerilii*) which has become an EEP, coordinated by Gerardo Garcia (Chester Zoo).

The ESB programme for the mountain chicken frog (*Leptodactylus fallax*) was upgraded to EEP due to the continued urgency to maintain strict management of the two populations (quarantine and non-quarantine) and the continued need for future reintroductions and applied research. The Long-term Management Plan for the species was also published this year, led by Chester Zoo with support from population biologists from the EAZA Executive Office.

Best Practice Guidelines

Two new publications were approved as official “Best Practice Guidelines” for Lake Oku frog (*Xenopus longpipes*) and the Sardinian brook salamander (*Euproctus platycephalus*), led by ZSL London zoo.

Amphibian Conservation Action Plan (updated)

Members of the EAZA Amphibian TAG (ATAG) have contributed to the update of the Amphibian Conservation Action Plan (ACAP), specifically to the ex situ breeding components (<http://www.amphibians.org/acap/>). The ex situ breeding components of the updated ACAP reflect a fundamental paradigm shift in conservation breeding with ever more focus being placed on developing conservation breeding initiatives within range countries.

Amphibian Ark’s Conservation Needs Assessment

The Amphibian Ark conservation needs the assessment tool <http://www.conservationneeds.org/>, now available online, and



GOLDEN MANTELLA (*MANTELLA AURANTIACA*), TOROTOROFOTSY MARSHES, MADAGASCAR, FRANK VASSEN CC

it is hoped that, in the future, the ATAG can feed into the tool and assess the conservation needs of European amphibians. As well as considering threat status, the tool also assesses the conservation role and needs of each species via a number of diverse criteria, including evolutionary distinctiveness, species ecology, ex situ research, the use of less threatened species as husbandry analogues and the educational role of particular species.

Amphibians in Vietnam

The higher elevations of Hoang Lien National Park in Vietnam are important sites for biodiversity, and are the only known locations for Vietnam’s only confirmed critically endangered amphibians, the Sterling’s toothed toad (*Oreolalax sterlingae*), described by a team which includes ATAG member Thomas Ziegler and the Botsford’s leaf-litter frog (*Leptolalax botsfordi*). Both species became known to science recently, being scientifically described in 2013. The habitat of both species is threatened by human activities, particularly tourism. Fortunately, as the impacts of tourism can be minimised, many of the associated threats the species are facing are potentially reversible. A team from ZSL, the Australian Museum and Hoang Lien National Park have been focusing on these species for the past two years and have just launched a conservation action plan for amphibians of the Hoang Lien Range: <http://www.amphibians.org/wp-content/uploads/2017/03/An-action-plan-for-the-amphibians-of-the-Hoang-Lien-Mountain-Range-2017-2021.pdf>. This action plan will involve international collaboration and a long-term commitment from all partners, and could be used as a model for other taxonomic groups and areas within the region.

Madagascar golden mantella frog

Conservation of the golden mantella frog (*Mantella aurantiaca*), and protection of the Mangabe region (the core range for this species), continued to be the focus of Chester Zoo's activities in Madagascar, in 2016. PhD scholar Luiza Passos visited Madagascar to conduct studies that complement those being conducted at Chester Zoo – her research is providing valuable information on the impacts of keeping amphibians in zoos and breeding centres and how this may impact on their suitability for reintroduction. In-country partner Madagasikara Voakajy continued to track the movements of wild golden mantella, with involvement of Chester Zoo's herpetological staff and using marking technology developed at the zoo. This field research is providing data on population size, distribution and the ecology of this species, and will underpin the development of a new national action plan for the species. Part of the "Golden Mantella Action Plan" includes the need for pond restoration and reforestation, and Chester Zoo funded continued activity in this area.

New plans for 2017

Based on the outcome of the Amphibian TAG evaluation, the EEP Committee concluded that there is a clear lack of commitment/input from EAZA members.

The committee underlined the importance of the Amphibian TAG for the EAZA community, especially considering the high conservation value of amphibians and the clear mandate from IUCN to work on this group of animals and the diversity of ways to work on those species (both *in situ* and *ex situ*). Nevertheless, considering the work already done, the committee compliments all the enthusiastic TAG members and encourages them to continue the good work.

This evaluation allowed us to highlight areas we can collectively work on to improve the efficiency of the Amphibian TAG.

Actions for 2017 include:

- Proactively promote amphibians (publishing on websites or in journals).
- Review and improve the Regional Collection Plan.
- Encourage and continue the production of Best Practice Guidelines on the lines of the excellent work done in 2016 by Ben Tapley (ZSL London zoo) and his colleagues.
- Support and encourage all initiatives of conservation effort and research *in situ* and *ex situ*.
- Encourage and support monitoring programmes.

Of course, all this work cannot be assumed only by the Chair and single Vice-Chair, and the workload has to be spread between as many people as possible. Consequently, and

especially since the departure of the vice-chair Warren Spencer at the end of 2016, the main goal of the Amphibian TAG in 2017 will be to recruit a strong team of motivated people who are keen to lead projects or working groups. This is the only way to ensure a long and fruitful life for the Amphibian TAG.

REPTILE

TAG Chair: Ivan Rehak (Prague Zoo, Prague, Czech Republic)

TAG Vice-Chairs: Fabian Schmidt (Crocodiles), (Leipzig Zoo, Leipzig, Germany); Matthias Goetz (Chelonians), (Jersey Zoo, Jersey, UK); Thomas Koelpin (Snakes), (Wilhelma Zoo, Stuttgart, Germany); Gerardo Garcia, (Conservation) (Chester Zoo, Chester, UK); Thomas Wilms (Lizards), (Muenster Zoo, Muenster, Germany)

In 2016, the Reptile TAG (RTAG) maintained seven EEPs and 23 European Studbooks. The TAG achieved significant improvement in geographical representation of involved zoos and increasingly focused on endangered European reptiles. The RTAG coordinates an optimal management of EAZA reptile collections to ensure long-term existence of populations of managed species of chelonians, crocodiles, lizards and snakes. This is all done while respecting conservation requests, research issues, space availability, ethics, safety and other associated aspects. Simultaneously, the RTAG is a platform where EAZA reptile specialists, as well as eventually other professional colleagues, can meet, share and disseminate information and work to improve expertise in reptile husbandry, develop



KOMODO DRAGON (*VARANUS KOMODOENSIS*) WORK © IVAN REHAK

relevant guidelines, protocols and recommendations.

In 2016 we lost a special advisor of the Reptile, TAG Hans-Dieter Philippen. Over the years he established a huge global network and he built up a massive library on reptiles and amphibians. His knowledge was enormous and he was always happy to share this. Since 2004 he was chief editor of the *Marginata* magazine. He visited a large number of zoos worldwide and also within the zoo community he had a lot of contacts. Also in 2016, a Vice-Chair of the Reptile TAG and coordinator of *Testudo kleinmanni* EEP, Henk Zwartepoorte, passed away. He was among the most experienced professionals in reptile husbandry, always prepared to help, assist and share his incredible knowledge. He became a real mentor to many European curators and keepers. He also linked zoos with the private reptile keeping community and coordinated their cooperation. Both these colleagues and friends will be dearly missed.

In 2016, the Reptile TAG underwent some changes in its membership, including an introduction of four new TAG members and termination of one TAG membership. In the Crocodile programmes there was one change in programme leaders: After Mike Bungard left Paignton Zoo, UK, the ESB for Cuban Crocodiles (*Crocodylus rhombifer*) remains there, with Mark Dainty confirmed as new studbook keeper. As outlined in the last Annual Report the Critically Endangered Siamese Crocodile (*Crocodylus siamensis*) deserves more attention in European zoos, where it is occasionally kept and even bred. Especially since its rediscovery in Laos in 2015 by Thomas Ziegler and colleagues, Europe should support this species, for which a successful SSP with reintroduction project is already in place. Jan Vasak from Jihlava, Czech Republic volunteered to promote the species in Europe.

The RTAG has focused on goals specified in the Five Year Action Plan (2012), with progress in RCPs, solutions for stagnant programmes, and other significant issues. RTAG representatives are active in various EAZA activities related to research (Ivan Rehak – member of EAZA Research Committee) and population management (Fabian Schmidt – member of EAZA Population Management Advisory Group).

The RTAG co-operated closely with the EAZA Amphibian TAG as well as with partners in other regional associations (eg AZA, ZAA). To facilitate the creation of conservation *ex situ* and *in situ* links, the RTAG continued to develop close links with the IUCN Specialist Groups, Task Forces and other IUCN umbrella organisations – in particular Crocodile SG (CSG), Iguana SG, Fresh-water Turtle SG, CSG Tomistoma Task Force, Turtle Conservation Alliance – plus other international reptile

conservation initiatives (eg. Gharial Conservation Alliance, Asian Turtle Conservation Network, Blue Iguana Recovery Programme). It included also personal active participation at SG meetings (in the CSG a special working group on CSG–zoo cooperation is actively working) and participation of SG members at RTAG meetings. Notably, the connection between the EAZA Reptile TAG and the IUCN Crocodile Specialist Group became even closer than before as Thomas Ziegler was appointed as new CSG Regional Chair for Europe with Fabian Schmidt being appointed as his new Vice-Chair.

Organised by the crocodile researchers Ashley Percy and Agata Staniewicz from Bristol University, UK, in October the first European Crocodile Networking Meeting was held at Crocodiles of the World in Brize Norton, UK. It was the goal of the meeting to bring researchers, students, conservationists, private keepers, zoo staff, and representatives of the leather industry together and show opportunities for future projects and cooperation. The EAZA Reptile TAG was represented by Fabian Schmidt, Iri Gill and Mark Dainty.

The strong links to the AZA Herp TAGs were renewed at the joint TAG Chairs meeting in Omaha, US. The Reptile TAG was represented by Fabian Schmidt, who gave a lecture on “Transport of Komodo dragons between the EAZA EEP and AZA SSP” as a case study illustrating the complexity of intercontinental transfers.

Two RTAG meetings were held in 2016. The first meeting in April 2016 was hosted by Zagreb zoo, Croatia, which featured a workshop on the vital area of UV lamps, and discussion of venomous snake management guidelines (coordinated by Iri Gill, ZSL, UK). The second meeting was held during the EAZA Annual Conference in Belfast, UK, in September 2016, which featured updates on developments in Komodo dragon husbandry, conservation supported by the Reptile TAG and research conducted with the Reptile TAG’s participation. EAZA’s “Let it grow” campaign was reflected in a presentation of a project focused on the *Lacerta viridis* population at Prague Zoo, Czech Republic. Target training of crocodiles as a management tool was also a major topic introduced by Guido Westhoff from Hagenbecks Tierpark Hamburg, Germany. Olivier Marquis from Paris Zoo, France, presented preliminary results of a field survey on smooth-fronted caimans (*Paleosuchus trigonatus*) in the Nouragues Reserve in French Guyana.

Significant development continued in implementing the EAZA Research Committee recommendations and focusing on important research issues for a proper species management as well as conservation efforts. Thanks to the professional

coordination of programme coordinators and cooperation from involved zoos and academic partners important research projects have been conducted, including the first description of the karyotype of the Komodo dragon which was published in a prestigious scientific journal by an international research team with significant Reptile TAG involvement.

RATITE

TAG Chair: Joost Lammers (Avifauna, Alphen, The Netherlands)

TAG Vice-Chair: Jo Gregson (Paignton Zoo, Paignton, UK)

The EAZA Ratite TAG encompasses all species of palaeognath birds which includes ostriches, rheas, cassowaries, emus, kiwis and tinamous and was established in 2008. The mission of this TAG is to facilitate management of ratites and tinamous in the EAZA collections and participate in and support relevant conservation efforts.

Meetings

During 2016 the EAZA Ratite TAG met twice, once in Lagos, Portugal, in May at the Bird TAG's midyear meetings and once in Belfast, UK, in September at the EAZA Annual Conference. This was the first time this TAG held two meetings in one year.

The meeting at the midyear meeting was relatively short and focused a bit more on the status of the programmes in this TAG. Since Joost Lammers (Chair) and Jo Gregson (Vice-Chair) were present at the joint TAG Chairs meeting in Omaha and presented a general update on the EAZA programmes at the AZA ratite meeting, this update was also given to the EAZA TAG. All programmes are running quite well although the cassowary ESB had a rather bad year with no surviving chicks in 2015. Since we don't really actively support a conservation project in this TAG we are still searching for one to support. The TAG Chair has been in contact with Christian Saucedo, conservation director and wildlife manager at Patagonia Park in Chile, where there might be an opportunity to support a reintroduction project for lesser rhea (*Rhea pennata*) into that area. On behalf of Christian Saucedo the TAG Chair presented this project at the meeting. The general feeling at the conference was that we might not want to spend too much of our conservation funds on a species that is not globally threatened but that we of course might be able to link to this project and give support and advice. It is up to the ESB keeper to develop this further.



SOUTHERN CASSOWARY (*CASUARIUS CASUARIUS*) AT VOGELPARK AVIFAUNA © VOGELPARK AVIFAUNA

The meeting in Belfast focused, after a brief update on other programme species, mainly on one of the ESB species, the Southern cassowary (*Casuarius casuarius*).

Małgorzata Pacholczyk of Lodz Zoo, Poland, gave a presentation on their first breeding success in 2016. Joost Lammers, ESB keeper, gave an extensive update on the Southern cassowary ESB and addressed some of the challenges we are still facing with this programme. This was followed by a presentation on the introduction of cassowaries since there are still a lot of questions from zoos on how and when to introduce cassowaries. These presentations opened the floor to some good conversations and showed us there is still a need for more research and this also led to the idea to have a cassowary workshop in the near future.

Research

Since there are still some dietary issues with the cassowaries in EAZA facilities it was decided that there is a need to do a survey on the diets used in our EAZA zoos for cassowaries. Chester Zoo, UK, volunteered to take on the task to develop the survey and this was done in 2016 and will be ready early 2017. So early 2017 the survey will be circulated amongst ESB participants and hopefully many will reply so that we will get a good overview of what is going on in EAZA institutions. Not only can the outcome be used to potentially answer the remaining questions we still have but the outcome will also be used as a base for the Cassowary Husbandry Workshop that will hopefully be organised in 2017.

EEP evaluation

In 2016 the evaluation of the North African ostrich EEP was done according to schedule. This was the first time for this EEP that was established in 2011. Overall all parties involved in

the EEP were satisfied and the EEP was rated as good. Several points have been indicated that should get priority within this EEP, such as the establishment of Best Practice Guidelines and the production of the first studbook for the species. TAG and EEP coordinator will work on these projects in the near future.

PENGUIN

TAG Chair: Pierre de Wit (Wildlands, Emmen, The Netherlands)

TAG vice- Chair: Jo Elliott (RZSS Edinburgh Zoo, Edinburgh, UK)

Introduction

The goal of the Penguin TAG is to provide leadership for the management of penguins in EAZA collections in order to maintain healthy, sustainable populations for the purpose of inspiring and promoting appreciation and conservation of penguins and their habitats.

Meetings

A Penguin TAG meeting was held at the EAZA Annual Conference in which the status of the different species was reviewed. During a closed session of the TAG, arrangements were made about the way to approach the establishment of Best Practice Guidelines, to start in 2017. In the total scope of what the TAG is planning to do, these guidelines have a priority. Also, a space survey was planned for that year as the last one already dates back to 2008.

2016 also offered further opportunities for members of the TAG to strengthen international relationships by attending the joint TAG Chairs meeting at Omaha (US), as well as the International Penguin Conference (IPC) at Capetown (South-Africa).

Research

At The Royal Zoological Society of Scotland (RZSS) several research projects were initiated of which the results will be published in 2017. Among them were those on the use of electrophoresis as a prognostic indicator for penguins with Aspergillosis and another on thermography as a non-invasive screening tool to diagnose Aspergillosis.

Regional Collection Plan (RCP)

The RCP dates back to 2014 and has not been updated, although for the African penguin (*Spheniscus demersus*) a Long Term Management Plan (LTMP) was produced in 2016 which will enable this EEP and the TAG to review this species in



KING PENGUIN (*APTENODYTES PATAGONICUS*)

particular. The EEP for this species was also evaluated, though the one for the Humboldt penguin (*Spheniscus humboldti*) was postponed to 2017. This programme has suffered from a lack of continuity, but in 2016 a new coordinator was appointed. The provisional proposals for ESBs for both the Macaroni penguin (*Eudyptes chrysolophus*) and Magellanic penguin (*Spheniscus magellanicus*) have not been pushed through and will be dependent on the outcomes of the space survey which is planned for 2017.

An orientation supervised by the TAG to see whether an importation of little penguins (*Eudyptula minor*) from Australia in 2018 will be feasible in the future has been continued late 2016.

Statements

The draft document referred to in the previous report, entitled “EAZA penguin TAG applications check-list for imports of penguins or their eggs from the wild” has been completed and will be submitted for approval to the EEP Committee in 2017.

Conservation

The TAG does not directly support conservation work, but highlights the work of its members. As in 2015, the Southern

African Foundation for the Conservation of Coastal Birds (SANCCOB) and Sphenisco (for African and Humboldt penguins respectively) are extensively supported by penguin holders in Europe.

Moreover, for the northern rockhopper (*Eudyptes moseleyi*) the project Pinnamin was set up. It is a collaboration between RZSS, the British Antarctic Survey, the Royal Society for the Protection of Birds (RSPB), Tristan Conservation and the Government of South Africa aiming to improve understanding of factors limiting the northern rockhopper penguin population on Tristan da Cunha and to facilitate the implementation of appropriate conservation measures.

In 2016, the IUCN Penguin Specialist Group (PSG) was formed, with which cooperation will be sought in 2017.

CICONIIFORMES AND PHOENICOPTERIFORMES

TAG Chair: Catherine King (Weltvogelpark Walsrode, Walsrode, Germany) TAG Vice-Chair: Andrea Bračko (Zagreb Zoo, Zagreb, Croatia)

The year 2016 was uneventful regarding changes in the EAZA Ciconiiformes and Phoenicopteriformes RCP, and there were no evaluations undertaken. However 2016 was an important year for meetings, as can be seen below.

Thanks to the excellent speakers, two diverse and interesting TAG meetings were held in 2016. Findings from the third five-year Fabulous Flamingo Survey that allows the TAG to look at the current status and trends in flamingos management in EAZA zoos were revealed at the May TAG meeting, and a number of presentations focusing on management of mixed species exhibits, many of which were relevant to multiple TAGs, were given at both the May and September meetings. Additionally the TAG was represented at the 2016 joint TAG Chairs meeting held in Omaha Nebraska, US where a formal as well as many informal meetings between regional Ciconiiformes and Phoenicopteriformes representatives were held, paving the way for more future collaboration.

The white stork and importance of local biodiversity

Both 2016 TAG meetings included presentations on the white stork (*Ciconia ciconia*), in keeping with the EAZA Let it Grow conservation campaign focusing on local biodiversity.



MADAGASCAR POND HERONS WALSRÖDE © ANDREAS FREI

We learned about the successful efforts of the Municipality of Malpartida de Cáceres, one of the Euro Nature's 15 white stork villages, to enhance white stork habitat through wetland creation in May. As white storks have become largely dependent on rubbish dumps for food in Spain but this source of food will soon become very limited through EU regulation of organic matter in rubbish sites, having alternative sites will be increasingly important. Wetland conversion throughout Europe is a major problem for white storks as well as other species, and wetland creation and restoration offer methods by which zoos may be able to enhance local habitats. White storks are commonly injured, and Warsaw Zoo demonstrated the scale of the rehabilitation efforts for this species when it was able to arrange for 64 white storks to be sent from Poland to the UK in 2016 for a widely embraced translocation project.

Zagreb Zoo serves as a model for other EAZA zoos through its participation in the SOS Stork project to follow movements of white storks throughout their range to understand the threats and the storks responses to these in a rapidly changing world, its provision of White storks for Čigoč, the first European Stork Village and its gathering of material for genetic research being undertaken by KMDA, Belgium. During the September TAG meeting Peter Galbusera demonstrated that the genetic material had been put to good use as, along with some other new eastern European samples from Bulgaria and Uzbekistan, it helped confirm that the white stork has a homogeneous but highly diverse genetic representation across its European range, with genetic mixing pre-dating the numerous translocation projects undertaken. Short reports on these activities as well as other ones that involve European Zoos or were presented at other EAZA meetings were compiled into an article for the winter 2016 (issue 95) of Zooquaria.

Sacred Ibis and the European Commission Invasive Alien Species Regulation

An important topic discussed during the September TAG meeting is the fate of the many sacred ibises (*Threskiornis aethiopicus*) currently held in EAZA zoos, as this species is included in the EU Invasive Alien Species (IAS) list released on 13 July 2016. Regulations regarding listed species are to be implemented within 18 months of the list's publication, but as of now there is great diversity in responses of individual countries to this new regulation. EAZA is attempting to arrange an exemption permit system that will allow zoos to keep IAS if specimens cannot escape from the institution or during a transport and the specimens are not allowed to breed. The situation will be monitored per country to verify whether

exemptions for zoos have been granted for species on the list. EAZA zoos collectively house more than 1000 sacred ibises, and some holders are now working together to form single sex colonies if this option is allowed within their country. Currently the European free-ranging population of sacred ibis, mostly found in France, is considered stable and during the TAG meeting discussion participants were in agreement that there should also be an exemption for zoos regarding the non-breeding regulations, with penalties if the zoos do not take proper measures to prevent sacred ibis free-flying or escaping.

Northern Bald Ibis Conservation Progress

The fourth meeting of the International Advisory Group for the Northern Bald Ibis (*Geronticus eremita*) (IAGNBI) was held in August 2016 in Seekirchen, Austria. The meeting focused on conservation and translocations of this IUCN critically endangered listed bird. Another objective was to redefine the role of IAGNBI following the formation of the AWAE-supported International Working Group (IWG) for range-state implementation of the International Single Species Action Plan for the Conservation of the Northern Bald Ibis. It was decided at the August meeting that IAGNBI could now most effectively concentrate on translocations and related applied disciplines that support the action plan and compliment the role of the IWG. Changes in IAGNBI positions also occurred, with Christiane Boehm, the EAZA Northern bald ibis EEP Coordinator, who has long had an active role in IAGNBI, becoming co-Chair of IAGNBI, accompanied by the EAZA Ciconiiformes and Phoenicopteriformes TAG Chair Catherine King. The NBI action plan and proceedings of the fourth, as well as past, IAGNBI meetings and various other useful documents can be downloaded from <http://www.iagnbi.org/>.

Efforts were made to encourage EEP participants to contribute material for a study of genetic diversity of the EEP, Turkish semi-wild and the Moroccan wild populations of northern bald ibis, financed through the Life plus NBI European reintroduction project. It proved disappointingly difficult to get samples from many of these birds, but at least pedigree level analyses of the North American (AZA) and EAZA population are being done using the same techniques, allowing comparison of the results. It is possible that differences in founder representation and genetic drift have led to retention of different alleles in the two populations, and this pedigree information will be very useful in developing the Long Term Management Plan for the EEP population to be undertaken in 2017 as part of a EU LIFE project that the EAZA Executive Office is spear-heading.

Hérons in the spotlight

Another international meeting of importance was the Herons of the World Symposium and Workshop held 21-23 September 2016 in New Berne, North Carolina, a US and organized by the IUCN-SSC Heron Specialist Group (HSG). The workshop, focusing on global action plan implementation and updating conservation assessments of heron species, was co-organized specifically by John Brzorad in the US and Catherine King. The meeting provided the opportunity to explain the remit of the recently formed IUCN-SSC Heron Specialist Group (HSG) *ex situ* conservation breeding and management working group. Chaired by Catherine King, with participation from almost all formally recognized regional or country zoo associations.

WATERFOWL AND PELECANIFORMES

Chair: Bernd Marcodes, (Cologne Zoo, Cologne, Germany)

Vice-Chair: David Jeggo (Durrell Wildlife Conservation Trust, Jersey, UK)

Vice-Chair: Johnpaul Houston (Blackpool Zoo, Blackpool, UK)

In 2014 the Waterfowl TAG and the Pelecaniformes TAG have been merged. So the scope of the species that fall under the remit of the TAG have been expanded. As this means that in addition to the 150 Anseriformes species, not only 65 Pelecaniformes species, but also four Gaviiformes species, 22 Podicipediformes species and 108 Procellariiformes were added. Although realizing that most of the later three taxonomic groups are hardly present in human care.

For the Anseriformes a second RCP was developed in 2008 with the use of a revised decision flowchart. Attention has been focussed on IUCN listed species. The latest RCP for the Pelecaniformes species dates back to 2004. A revision for both RCPs is required on the short term.

Nine species are monitored by different persons, twelve other IUCN red listed species are monitored by the TAG.

Here is an overview of the programmes and Mon-Ps: EEPs / ESBs

Meller's duck EEP	Harriet Whitford, Jersey
Bear's pochard ESB	Peter Smallbones, Paignton
White-winged woodduck ESB	William van Lint, EAZA Executive Office
Dalmatian pelican EEP	Piotr Cwiertnia, Poznan

Pink-backed pelican ESB	Georgina Barnes, Longleat (since 2016)
Little pied cormorant ESB	Martin Kaiser, Berlin Tierpark

Monitor-P

Northern gannet and Anhinga	Wineke Schoo, Arnhem Zoo
Brown pelican	vacant
Eastern white pelican	Piotr Cwiertnia, Poznan
Seaducks	Catherine King, Walsrode
Screamers	Joost Lammers, Alphen
Pygmy Geese	Flemming Nielsen, Copenhagen

The EEP for the Bank cormorant (*Phalacrocorax neglectus*) was downgraded to a monitoring programme in 2016 because there are just two male birds left, and the focus of the conservation efforts are more shifted towards *in situ* conservation and no longer on establishing an *ex situ* population within Europe. The evaluation of both other EEPs were in process during this year and should be finalized in 2017.

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

However the breeding of Anseriformes and Pelecaniformes 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. Because of the longevity of most of the Pelecaniformes this is different for these birds.

The newest discussions about pinioning of birds in different EU countries won't influence this trend in a positive way. As concluded in the recently published 'Future prospects of commonly kept pinioned bird species at EAZA zoos' report (EAZA Executive Office, Sept 2016), the Anseriformes and



MUSCOVY DUCK (*CAIRINA MOSCHATA*) © BERND MARCODES

Pelicaniformes will certainly be impacted by the legislative limitations regarding pinioning and/or the institutional decisions to no longer pinion. This highlights the need for clear guidance in the Regional Collection Plan and underlines the need for institutional commitment from EAZA Members to focus more on the priority species.

The Chair attended the joint TAG Chairs meeting in Omaha (March 2016), and reported about the waterfowl developments within EAZA during the AZA Anseriformes TAG meeting immediately afterwards. A good opportunity to link up with the involved colleagues in AZA, and encouragement to work more in a joint effort on some of the conservation depended species as Bear's pochard and white-winged woodduck. There was also an EAZA Waterfowl and Pelecaniformes TAG meeting held at the BirdTAGs Meeting in Lagos, Portugal, in May 2016.

FALCONIFORMES AND STRIGIFORMES

TAG Chair: Mark Habben (Zoological Society of London, London, UK)

TAG Vice-Chair: Kirsi Pynnonen-Oudman (Helsinki Zoo, Helsinki, Finland)

The TAG had two meetings during 2016, one during the midyear meeting in Lagos (May, 2016) and another one during the Annual Conference in Belfast (Sept 2016).

Big achievement was the approval of the Best Practice Guidelines for Demonstration birds. As the guidelines were a TAG specific response on the EAZA Guidelines on the use of animals in public demonstrations (2014), the guidelines were discussed and approved by the EEP Committee during their meeting and Belfast for the birds that fall under the remit of the TAG.

These Best Practice Guidelines were developed in order to manage the husbandry of "demonstration birds of prey" and factor in all aspects of management that optimise the welfare of the participating bird or species as well as the wellbeing of the broader animal collection and native wildlife in surrounding areas. To ascertain key information as to what species were kept for bird displays, how they were managed, and why they were included, input was collected and collated from EAZA Member institutions recognised for their demonstrations with free flight birds or experience with displays, ranging or zoo management. The guidelines are specifically approved as BPG for the species that fall under the umbrella of the Falconiformes and



STELLER'S SEA EAGLE (*HALIAEETUS PELAGICUS*) © ALLIE CAULFIELD

Strigiformes TAG, although there are also references to other species used in demonstrations. The guidelines were made available on the public site of the EAZA website.

Management changes to programme species

The ESB for Steller's sea eagles (*Haliaeetus pelagicus*) continued, after a period of unclarity, to be managed by Lubov Kurilovich in Moscow Zoo, Russia. Given her commitment and experience with this programme the TAG was happy that Lubov could continue working on this species.

Andrea Pinto (Lourosa, Portugal) took over the management of the King vulture ESB, after Arnhem decided to withdraw their institutional support. Thanks to Arnhem for their institutional commitment for this species over the years, and specifically Kim van der Put as the previous studbook keeper.

Having the ongoing decline of the African vultures in mind the TAG decided that there is an urgent need to have EEPs for three African vulture species. So the White-headed and Ruppell's vulture ESBs, both Critically Endangered, were upgraded to EEPs respectively managed by Joost Lammers (Alphen, The Netherlands) and Yitzhak Yadid (Rome, Italy), and in addition there was an EEP established for the Endangered Lappet-faced vultures managed by Gerry Whitehouse Tedd (Sharjah, UAE).

At the same time long existing programmes for Bearded vulture (*Gypaetus barbatus*), European black vulture (*Aegypius monachus*) and griffon vulture (*Gyps fulvus*) continued working on strengthening the *ex situ* population, while at the same time contributing to ongoing reintroductions projects. For all three species birds were released in different areas within Europe.

Given recent cases of Avian malaria and Usutu virus in Northern owls, as discussed during the TAG meeting in Belfast,

the TAG together with the Veterinary advisor Dominik Fischer have been working on a treatment protocol to be published in early 2017. It will be made available on the Falconiformes and Strigiformes TAG workspace under the Husbandry guidelines.

CRACID

Cracid TAG will merge with the Galliformes TAG following evaluations and recommendations from the Chair and the EEP Committee. The new structure mirrors the AZA and IUCN Specialist Group categorisation. The reform is currently in process and Cracid TAG activities are being gradually integrated into the Galliformes TAG. As a result, the Cracid TAG has not submitted a report for 2016.

GALLIFORMES

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

TAG Vice-Chair: Ludo Pinceel (World Pheasant Association, Hexham, UK)

Galliformes TAG mission statement

The Galliformes TAG aims to provide direct support for Members of EAZA in cooperation with other similar organizations to ensure the optimal management of *ex situ* populations of Galliformes species, to set up sustainable populations which could function as a source for reintroductions, educate the general public about the importance of Galliformes species in their wild environments, research their biology in the benefit of their wild conspecifics and support in and *ex situ* conservation projects through financial support and sharing of knowledge.

Regional Collection Plan (RCP)

During 2016 the Galliformes TAG continued the work on a new Regional Collection Plan. To increase the interest for Galliformes species the upcoming RCP will showcase the conservation potential and focus on Galliformes's species exhibit and research value. In order to achieve this, threatened species will be favoured for programmes with a higher level of management. Also threatened species from which the *ex situ* populations have a high risk of dying out in the foreseeable future are assigned high level management programmes. This high level of management combined with the sourcing off birds



EDWARDS'S PHEASANT (*LOPHURA EDWARDSI*) © DON BUTLER

from other *ex situ* populations that exist outside EAZA should help establish precautionary programmes for these threatened species.

The Galliformes TAG continues to search for people who share our interest for these beautiful species and which to contribute to their survival within EAZA and in the wild. The following positions are vacant:

- Cabot tragopan (*Tragopan caboti*) ESB
- Malayan peacock pheasant (*Polyplectron malacense*) ESB
- Malayan crestless fireback (*Lophura e. erythrothalma*) ESB
- Green Peafowl (*Pavo muticus*) Mon-P
- Reeve's pheasant (*Syrnaticus reevesii*) Mon-P
- Brown eared pheasant (*Crossoptilon mantchuricum*) Mon-P
- Satyr tragopan (*Tragopan satyra*) Mon-P
- Temminck's tragopan (*Tragopan temminckii*) Mon-P
- Black grouse (*Lyurus tetrix*) Mon-P
- Capercaillie (*Tetrao urogallus*) Mon-P

Zoo Collection Planning

The Galliformes TAG urges individual institutions to hold at least two pairs of each recommended species which they hold and replace species with no specific role for recommended species. If guidance is needed to choose a species for a specific exhibit or for your institution the Galliformes TAG is very happy to help choose a suitable species and source birds.

Meetings

During the Mid-year Bird TAG meeting in Lagos, Portugal the structure of the Regional Collection Plan was discussed. The Regional Collection Plan was created using the EAZA Regional Collection Plan template and tried to implement as many aspects from the IUCN-SSC guidelines on the use of *ex situ* management for species conservation as possible. We tried to put aspects from both documents into a decision tree which was discussed during the meeting in Lagos. Valuable input from the attendants was used to improve the RCP.

Workshop

A workshop was held during the Galliformes TAG meeting in Belfast focusing on three subjects: "cooperation with Private breeders", "how can we increase the *in situ* conservation effort within the TAG" and "establishing basic husbandry guidelines for Galliformes species". The input from this workshop was included into the regional collection planning process and the outcome from the basic husbandry guidelines workshop will be available on the Galliformes TAG's webpage.

Conservation and research

The genetic study to test the purity and inherent genetic diversity of the Edwards's pheasants' s (*Lophura edwardsi*) *ex situ* population came to a close and includes samples taken from birds in Europe, Japan, Cambodia, America and Vietnam. The population was checked for crosses with Swinhoe's pheasant (*Lophura swinhoii*) and Silver pheasant (*Lophura nycthemera*). A low level of impurity was found within the European population and these birds were excluded from the breeding population. Genetic diversity proved to be more diverse than expected which provides hope for the future of Edwards's pheasant in captivity and in the wild.

The TAG also stimulates zoos which currently keep Temminck's-, Satyr- or Cabot tragopans to get their birds tested for purity. If you want to test your birds please get in touch with Ludo Pinceel (lpgalliformes@gmail.com) for feather taking protocols and further information. The cost to test one bird is approximately €75.

PARROT

TAG Chair: Simon Bruslund (Heidelberg Zoo, Heidelberg, Germany)

TAG Vice-Chair: Sandra Molloy (Dublin Zoo, Dublin, Ireland)

Parrot TAG mission statement

EAZA Parrot TAG's mission is to facilitate and enhance cooperation on parrot conservation within the European zoo and aquarium community. The aims include maintaining sustainable *ex situ* populations, educating the public, encouraging contributions to scientific research and supporting *in situ* conservation of parrots. It will achieve these aims by providing the community with information and structures to assist and improve population management, husbandry methods and conservation project review and by also evaluating and sharing calls for cooperation from outside the community.

Regional Collection Plan (RCP)

The third edition of the regional collection plan was finalised in autumn 2016 and was published on the EAZA Member Area in early 2017. In total 581 taxa (species and subspecies) were reviewed and management programmes have been recommended for 78 taxa, 56 of which are classified as threatened by BirdLife International.

Roles and targets have been identified for each programme in the RCP including developing specific roles for monitored

(MON) programmes. A new role called conservation monitoring (CONS MON) has been developed for taxa which are threatened but with no birds from these taxa currently living within EAZA institutions. The Parrot TAG hopes to be able to contribute towards *in situ* efforts as there is currently no IUCN SSC for parrots who would otherwise cover this role.

Parrot TAG Evaluations

The table below summarises the evaluations completed in 2016.

Meetings

Simon Bruslund attended the AZA Parrot TAG meeting and Workshop in Omaha, US March 2016.

The Parrot TAG held a meeting at the midyear Bird TAG meeting in Lagos, Portugal, in May. Topics included an update on the RCP and EEP evaluations, yellow-crested cockatoo (*Cacatua sulphurea*) subspecies research, and updates on the Amazon space campaign, Lear's macaws (*Anodorhynchus leari*) and swift. There were presentations on managing mixed species single-sexed colonies of Amazon parrots in Copenhagen Zoo and the AZA Parrot TAG meeting and workshop. There were also discussions on the *Cacatua* spp. breeding campaign (see below for further information) and training parrots for husbandry and/or demonstrations.

A Parrot TAG meeting was held at the EAZA Annual Conference in Belfast in September. Parrot TAG programme managers were asked to submit posters highlighting the main aspects of their programme and these posters were hung outside the meeting room. The posters proved to be an effective way of communicating with conference delegates while allowing more time for discussions during the meeting. Simon Bruslund gave an overview of the completed RCP and asked for



GREY PARROT (*PSITTACUS ERITHACUS*) AT LORO PARQUE © ROLAND WIRTH

final comments before submitting it to the EEP Committee for approval. A presentation was given by Barbara Heidenreich, the parrot TAG behavioural advisor, on training Kakapos (*Strigops habroptilus*) and how this training has benefited the recovery programme. Severin Dressen from Wuppertal, Germany, outlined their plans to create a new dating aviary and breeding areas for macaw species managed in EAZA. Other topics included updates on EEP evaluations and rainbow lorikeets (*Trichoglossus moluccanus*).

The Parrot TAG hosted a workshop to discuss how to improve breeding with *Cacatua* spp. and this was followed up with a Skype meeting in November.

Publications

- The third edition of the Parrot TAG Regional Collection Plan was finalised in autumn 2016.
- Best Practice Guidelines were published for Ecuadorian Amazons and these are available from the EAZA public website.
- A poster was published entitled, "Priority species for

Species	Evaluation Conclusion
Ecuadorian amazon <i>Amazona lilacina</i>	Good - Programme has improved greatly. Main issue: lack of space.
Citron-crested cockatoo <i>Cacatua sulphurea citrinocristata</i>	Good/Sufficient – coordinated well Main issue: poor breeding by many pairs and low population size
Red-vented cockatoo <i>Cacatua haematuropygia</i>	Good/Sufficient – coordinated well Main issue: poor breeding by many pairs and very low population size.
Moluccan cockatoo <i>Cacatua moluccensis</i>	Good – coordinated well Main issue: overall poor breeding results.
Hyacinth macaw <i>Anodorhynchus hyacinthinus</i>	Insufficient Main issues: no species committee, no updated SPARKS dataset and communication issues in addition to poor breeding Note: Since this evaluation the coordinator has started the process to select a new species committee and has been liaising with participants to set up a juvenile flock and potentially a dating agency for older birds.

European *ex situ* programmes?. This poster is available to purchase from the Arndt Verlag. <https://www.papageien.de/shop/poster/poster-eaza-detail> The price is 15 euro of which 5 euro will go to a conservation project which is endorsed by the Parrot TAG.

- The Parrot TAG submitted an article for submission in Zooquaria which should be published in 2017.

Parrot TAG Campaigns

In 2016 the Parrot TAG's campaign focused on improving breeding with *Cacatua* spp. There are three EEPs for *Cacatua* spp. in EAZA – red-vented cockatoo (*C. haematuropygia*), Moluccan cockatoo (*C. moluccensis*) and citron-crested cockatoo (*C. sulphurea citrinocristata*). Unfortunately breeding in all three is quite low with only a few pairs breeding and many adults not reproducing at all. This is leading to declining populations and an uneven founder representation.

The Parrot TAG hosted a workshop at the EAZA Annual Conference in Belfast to address this issue. The workshop commenced with an overview of the main issues when breeding this taxon and this was followed by a presentation on how hands-on management can be used to address many of the challenges. The 39 attendees were then split into four groups to discuss the various factors that should be considered when breeding this taxa. This workshop was followed by a Skype conference call in November where 14 institutions in nine countries participated. The call included presentations from institutions who have been successful breeding this species. A comprehensive guidance document on breeding *Cacatua* spp. will be produced from the workshop and Skype call.

In 2015 the Parrot TAG focused on the space issues facing many of the Amazon parrot programmes and the Parrot TAG continued to highlight this issue in 2016. Some of the programme managers have reported some positive communications from potential new holders.

Conservation and Research

- The yellow-crested cockatoo is listed as Critically Endangered and is extirpated from much of its range. The *ex situ* population could prove to be useful insurance populations for some of its subspecies. However, most of the subspecies, with the exception of the citron-crested cockatoo, can be difficult to determine using physical attributes. In 2016, the Parrot TAG began collecting samples for genetic research and William van Lint of the EAZA Executive Office began researching the historical records of this species.
- The Citron-crested cockatoo EEP began collecting samples

for genetic research investigating the relatedness of the founders.

- In 2016, Cites upgraded African grey parrots to Appendix I. The Parrot TAG is addressing this by creating two programmes for the two different species of African grey parrots.
- The new RCP highlights the species which need support for *in situ* conservation.

TOUCAN AND TURACO

TAG Chair: Laura Gardner (Zoological Society of London, London, UK)

TAG Vice-Chair: Vacant

Changes to role of Chair and Vice-Chair

Sadly after years of hard work and commitment to this TAG, Harald Schmidt, Rotterdam Zoo, The Netherlands, stood down as Chair. Laura Gardner stepped up as TAG Chair, leaving the Vice-Chair post vacant. A Vice-Chair is currently being sought.

Meetings in 2016

The midyear Bird TAG meeting was hosted by Lagos Zoo, Portugal in May. During the Toucan and Touraco meeting the TAG structure and previous sub-group leaders/monitors was reviewed and vacancies advertised. Continuing sub-group leaders and studbook keepers gave a number of presentations on husbandry, management and the status of EAZA populations of focal species within the TAG. Laura Gardner raised concerns regarding a lack of institutional compliance with studbook breeding and transfer recommendations for iconic species. This is a significant barrier to establish viable populations within EAZA institutions.

Discussion was held on the RCP; the future of EAZA toucan collections and areas of focus for the veterinary advisor to the TAG, Tai Strike, ZSL London Zoo, UK.

A second Toucan and Touraco TAG meeting took place at the EAZA Annual Conference in Belfast on the 24th September. Population managers and sub-group leaders presented on some of the lower profile species such as mousebirds (talk given by Jo Gregson, Paignton Zoo, UK) and species management techniques used in mixed species exhibits (talk given by Simon Matthews, previously San Diego Zoo Global, US). A short discussion on what Members want from the TAG concluded the meeting.



GREEN TURACO (*TAURACO PERSA*) © TONY HISGETT, FLICKR

TAG Priorities

Establish a complete and up to date RCP. This TAG has a wide umbrella covering eight avian orders with well over 1500 species. This is a mammoth task and as such subgroup leaders have to take responsibility for their relevant order.

Review functionality of current ESB's in line with new EAZA population management system, consider if any of the monitored species could benefit from a higher level of management.

Publications

After the publication of the Best Practice Guidelines for Red-crested turacos (*Tauraco erythrolophus*), Louise Peat, Cotswold Wildlife Park, UK, is now expanding this to general Turaco Best Practice Guidelines. These are currently being written. This will be an excellent resource which will be used as a model for future guidelines produced by the TAG.

Research

Veterinary advisor to the TAG Tai Strike presented at the midyear meeting in Lagos, Portugal, on updates treatment and monitoring of Iron Storage Disease; and Harald Schmidt presented on a research questionnaire and research undertaken by a student at Rotterdam. Main findings indicate main causes of death remain as ISD; mycobacteria infection and pseudotuberculosis.

Louise Peat circulated a mate aggression questionnaire to all Red-crested touraco ESB participants to establish base line data

to improve social management of species.

ZSL London Zoo is developing behavioural management protocols for ramphastidae to reduce stress associated with routine health monitoring and screening.

In situ Conservation

No direct conservation initiatives have been established yet. The RCP will establish which species would be a priority for TAG focus. A large proportion of the more endangered species are not represented within the zoo population, but could still be used as ambassadors, ideally a project where several species/orders share a geographic location.

Many species within the TAG are truly iconic, any campaign for hummingbirds, kingfishers, cuckoo, toucans, would be instantly recognisable by the general public and as such relatively easy to promote within the zoo community.

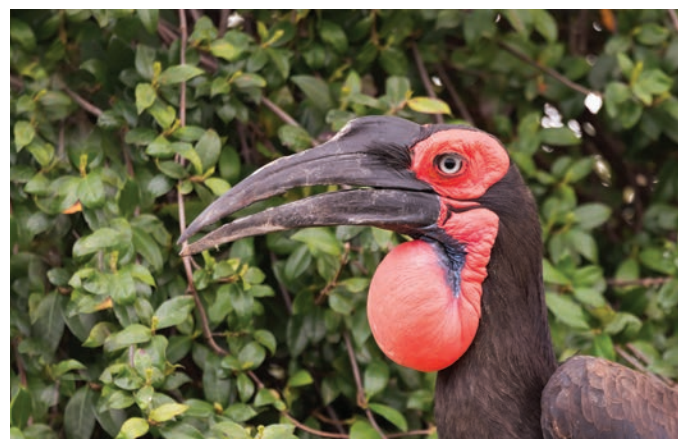
HORNBILL

TAG Chair: Koen Brouwer (Attica Zoological Park, Athens, Greece)

TAG Vice-Chair: Joost Lammers (Avifauna, Alphen, The Netherlands)

The mission of the EAZA Hornbill TAG is to:

- coordinate EAZA's *ex situ* breeding and management efforts for hornbills, ensuring that these hornbill populations fulfil the conservation, education, research and exhibition roles that have been assigned to them;
- strive for the highest standards in welfare and professional management of hornbills living in EAZA zoos;
- establish priorities for conservation and research for species included in the collection plan;



SOUTHERN GROUND HORNBILL (*BUCORVUS LEADBEATERI*) AT ATTICA ZOOLOGICAL PARK © ATTICA ZOOLOGICAL PARK

- encourage and coordinate participation in *in situ* conservation activities; and
- promote cooperation between EAZA Members and others with similar hornbill related missions.

Breeding programme developments

The Wrinkled hornbill EEP, managed by Jo Gregson of Paignton Zoo, UK, was positively evaluated in 2016, and is now awaiting EEP Committee review. An evaluation of the Great hornbill EEP was initiated in late 2016 and will be finalised in 2017.

Laure Pelletier of ZooParc de Beauval, France, replaced Eric Bairrao Ruivo as new EEP coordinator for the Rhinoceros hornbill. The Rhinoceros hornbill EEP was scheduled for re-evaluation in 2016, but because of this change in leadership it has been postponed to 2017. This EEP has truly become international in its cooperation; the long process of importing individuals for the EEP programme from both Japan (through JAZA) and North American (through AZA) was initiated in 2016.

Regional Collection Plan (RCP)

The new Regional Collection Plan was officially approved by the TAG members at the Hornbill TAG meeting held in Lagos, Portugal, in May 2016.

Monitoring programmes were started for two species listed in the RCP. Silvery-cheeked hornbills (*Bycanistes brevis*) will be monitored by Paulo Figueiras of Zoo de Lagos, Portugal and the Black-casqued hornbill (*Ceratogymna atrata*) will be monitored by Andreia Pinto of Lourosa Zoo, Portugal.

The Black-casqued hornbill is a relatively new species in European zoos. Between 1996 and 2005, 20 to 30 birds were imported by dealers from the Republic of Guinea. Several of these birds were purchased by EAZA zoos. Successful breeding has been achieved by Lourosa, Lagos and Weltvogelpark Walsrode. The current population is 11.11.3 in EAZA Member zoos.

Simon Bruslund of Heidelberg Zoo, Germany, assisted the TAG in surveying the number and species of red-billed hornbills living in European zoos, to investigate if an EAZA programme would be justified for one of the five currently recognised taxa. His conclusion was that there are only low numbers of several species currently present in Europe. Sadly, also several hybrids were located as a result of the survey. A poster on this topic was produced and is available on the Hornbill TAG section of the EAZA Member Area.

Meetings

The TAG met twice in 2016, on 19 May in Lagos and on 22 September in Belfast. Zoos that are or wish to be active in hornbill conservation, were encouraged to attend the International Hornbill Conference to be hosted by Sarawak Forestry Cooperation in Sarawak, Borneo (Malaysia) from 15 to 18 May 2017, or to support the meeting and its outcomes.

Conservation activities

There are likely to be less than 40 Sulu hornbills (*Anthracoseros montani*) left in the wild. This IUCN Critically Endangered species is endemic to the Tawi Tawi region in the Philippines. The EAZA Hornbill TAG worked together with several conservation related groups in the Philippines to officially launch the Sulu Hornbill Recovery Group (SHRG). The TAG, and specifically Attica Zoo Greece, assisted in funding the production of a draft species recovery plan for this species.

The TAG continues to be actively involved in conservation of the Helmeted hornbill (*Rhinoplax vigil*) through the Helmeted Hornbill Working Group. A resolution on the "Conservation of and Control of Trade in the Helmeted Hornbill" was submitted by Indonesia and adopted by the CITES Conference of Parties in Johannesburg in November 2016.

The TAG continues to encourage EAZA Members to support the Hornbill nest adoption programmes in India and Thailand. Adoption of a nest costs participating zoos \$125 (India) or \$150 (Thailand). Several additional EAZA Members, such as Zoo de Lagos and Planckendael Zoo, Belgium, joined this important initiative in 2016.

Hornbill Day

The TAG in collaboration with Attica Zoo as well as several Asian and African hornbill researchers/conservation groups is looking at the option of establishing an International Hornbill Day. Hornbills would be placed in the spotlight on this day in zoos and other organizations worldwide. Attica Zoo has already launched its own Hornbill Day and successfully created awareness on the conservation of these birds. Through fundraising activities Attica generated support for projects in Asia and southern Africa.

PASSERIFORMES

TAG Chair: David Jeggo (Durrell Wildlife Conservation Trust, Jersey, UK)

Vice-Chair: Theo Pagel (Cologne Zoo, Cologne, Germany)

The Asian songbird crisis continues to dominate the activities of the TAG and to provide its main focus. The first meeting of the year, attended by a number of core TAG members, was the International joint TAG Chairs meeting held in Omaha in March. At this the TAG Chair gave a presentation “The Asian Songbird Crisis – Joint action towards saving threatened Asian songbirds”, jointly with Tony Sumampau, of the Indonesian Zoo Association, PKBSI. The talk covered the strong relationships developing between the TAG and its partners in Indonesia. While in Omaha there was also opportunity to update American colleagues on the Asian Songbird Summit, held in Singapore in 2015, during the AZA mid-year meeting that followed the joint TAG Chairs meeting. With most of the key players present in Omaha, including good representation from EAZA, a meeting of the recently formed Bali Myna International Advisory Board (IAB) took place. The Bali myna (*Leucopsar rothschildi*) was the first Southeast Asian songbird to be recognised as being threatened by trade and would almost certainly have been extinct in the wild some years ago if not for the continual supplementation by the release of *ex situ* bred birds. The pressure from poaching however continues to this day and the species remains Critically Endangered. 2016 marked the 25th anniversary of the Bali myna EEP. It is fitting therefore that in October 20 birds from the EAZA institutions were sent from Cologne Zoo, which co-ordinates the EEP, to Taman Safari in Indonesia, in order to broaden the genetic base of the population in the country.

Pittas are a difficult passerine family to manage in captivity; the ESB programme in Europe for Hooded pitta (*Pitta sordid*) is struggling to maintain its numbers. However, as an illustration of how zoos are reaching out beyond the species represented in their collections, colleagues from Europe, North America and Australia got together at the Omaha meeting to discuss pittas and pool their knowledge on this group of birds. This was in response to concern over Gurney’s pitta (*Hydrornis gurneyi*) an Endangered species from Thailand and Myanmar with an uncertain future. As an outcome, experiences from the different regions with this far from easy group will be compiled into a combined best practice guideline for in-country *ex situ* breeding, should this be required to aid their survival at some stage in the future.



SUMATRAN LAUGHINGTHRUSH CHICK (*GARRULAX BICOLOR*) AT CHESTER ZOO © A OWEN

Prior to the Bird TAGs mid-year meeting in Lagos Portugal, a sub-group of the Passeriformes TAG, the Threatened Asian Songbird Alliance (TASA) met for three days of discussion and planning on the Asian songbird crisis and agree actions that EAZA institutions should take to combat the dire effects of this. TASA was formed a few years ago to focus entirely on the TAGs programmes for threatened Asian species to expand its support to *in situ* conservation activities.

Further meetings were held of both the TAG and TASA during the EAZA Annual Conference in Belfast in September. The Blue-crowned laughingthrush (*Garrulax courtoisi*) Global Species Management Programme (GSMP) used the opportunity of the gathering to hold its annual meeting in Belfast just before the conference. Representatives from all three regions that hold the species were present in Belfast. This remains the only bird



MONTSERRAT ORIOLE (*ICTERUS OBERI*) AT JERSEY ZOO © B DETNOR

GSMP and managing it as a global programme is proving to be most effective, pointing to the potential benefit of managing some other species, particularly those from Asia as GSMPs.

The end of the year was marked by two important publications of particular relevance to passerines and the TAG; volume 2 of the Illustrated Checklist of the Birds of the World and the updated IUCN Red List of threatened species came out. The volume of the Checklist covers solely the passerines and comprehensively re-evaluates their classification; as such it becomes a bench mark for their taxonomy and is likely to be adopted as the standard reference for many years to come. In all it identified 742 new passerine species and following this exhaustive revision the TAG now has over 6,500 species to consider within its remit. The Red List reassessment shows a worsening situation for the World's birds, with greater numbers than ever before under increased levels of threat, particularly so for those within Asia and especially for songbirds from this region. This prompted BirdLife International, the compilers of the IUCN bird listings to say "the impact of Java's bird trade is the most disconcerting story from the 2016 Red List"

This not only underlines how important the work of TASA is but also the pertinence of EAZA's Conservation Committee choosing as the next Conservation Campaign "Silent Forest". This will be launched in September 2017 and will focus on SE Asia's songbird trade and support actions to redress the impact of this, working towards finding sustainable solutions. The TAG is extremely excited about and enthusiastic about running and promoting this campaign.

The revised Red List shows that songbird species threatened by trade as identified as a priority at the first Songbird Crisis Summit now comprises 14 species, of which eight are Critically Endangered, three Endangered, two Vulnerable and one Least Concern; whereas before it was 12 species of which three were Critically Endangered, one Endangered, four Vulnerable and four Least Concern.

The Critically Endangered Javan green magpie (*Cissa thalassina*) for which an EEP was approved in 2015 is on this list. The EEP is an extension and provides additional security to the *ex situ* population of 30+ birds being managed at two sites in Indonesia. Last year's report made reference to the import from Java of six pairs by Chester Zoo, UK which coordinates the EEP. The good news is that young were successfully reared at Prague and Chester; at the end of 2017 the EEP population was up by three birds, at 7.8.0.

One of the species whose category of threat was uplifted is the Sumatran laughingthrush (*Garrulax bicolor*), now considered Endangered rather than Vulnerable. This is reflected in the

upgrading of the EAZA programme for this species from an ESB to become the TAG's fourth EEP, (in addition to Javan green magpie, Bali myna and Blue-crowned laughingthrush).

As well as breeding programmes in Europe, EAZA institutions are supporting conservation in Indonesia, principally though working with the Cickananga Conservation Breeding Centre, CCBC in Western Java and Taman Safari as well as activities in the Islands off the coast of Sumatra. Through this work EAZA Member institutions continue to support conservation action for several threatened endemic species within Indonesia including Rufous-fronted laughingthrush (*Garrulax rufifrons*), Black-winged myna (*Acridotheres melanopterus*) and Nias hill myna (*Gracula robusta*), all now considered Critically Endangered.

The news from the 2016 Red List was not all bad, some species were downlisted, including, from the Caribbean, the Montserrat oriole (*Icterus oberi*) which was moved from Critically Endangered to Vulnerable. Led by Durrell Wildlife Conservation Trust, which imported eight birds in 1998 due to concerns for the species because of volcanic activity on Montserrat, it and other EAZA institutions have been working to establish best practice guidelines in the event that an *ex situ* population is required as an assurance population against further problems in the wild. However at least for the time being, with a population of more than 500, its future is more assured and it no longer qualifies as Critically Endangered.

As the TAG embarks on revising its Regional Collection Plan (RCP), the not completely out of danger Montserrat Oriole is likely to remain included but all species will need to be considered in the light of recent reassessments and changes. It is the Asian species however where conservation is most pressing and that will take priority in updating the RCP, a task that will commence in 2017.

MONOTREME AND MARSUPIAL

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

TAG Vice-Chair: Flemming Nielsen (Copenhagen Zoo, Copenhagen, Denmark), Achim Winkler (Duisburg Zoo, Duisburg, Germany)

In 2016 the work of the Monotreme and Marsupial TAG was mostly directed towards consolidation and (re)launching of breeding programmes.

The EEP for the Bilby (*Macrotis lagotis*), an endangered species of arid Australia that can be used for a lot of environmental

education activities, was finally established with Thomas Kölpin of Stuttgart, Germany - Wilhelma being appointed coordinator and the first imports being prepared.

The newly established Tasmanian devil EEP (*Sarcophilus harrissi*), an species endemic to Tasmania and highly endangered by medical problems, gathered speed by three new holding institutions being approved by the Australian authorities, and the first husbandry workshop being held in the coordination institution, Copenhagen Zoo. This latter-mentioned zoo bred a total of six new young animals in 2016 which raises the population to 20 animals.

The Koala EEP (*Phascolarctos cinereus*) could slightly improve their genetic basis by importing three new animals from Australia and one from the US. This programme still has a considerable waiting list for this attractive species, which due to its restricted food choice can also be used as an ambassador species for the problems of climate change to be expected (there is concern that global warming will increase the content of toxic substances in the species' food plants above the level that can be physiologically tolerated). The Brush-tailed bettong EEP (*Bettongia penicillata*) was re-launched by appointing Richard Viduna from Jihlava Zoo as the new coordinator.

The most important problems we encounter at present in breeding the Common wombat (*Vombatus ursinus*) and the

Echidna (*Tachyglossus aculeatus*): In both species we would need new animals from Australia. The wombat is already coordinated by an EEP, it is severely hoped that the Australian authorities will allow the legal export of more animals. In the past this was not the case causing some shady dealers' activities to fill the gap, which is not in accordance with EAZA procedures. In the case of the Echidna, the programme is planned to be upgraded to an ESB coordinated by Wrocław Zoo to demonstrate our willingness to combine animals and efforts in a more promising way of management.

Conservation activities were supported by the Goodfellows-treekangaroo EEP and the Koala EEP, the latter through contributing by all participants to the fund for conservation and research administered by San Diego Zoo Global.

PROSIMIAN

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

TAG Vice-Chair: Delphine Rouillet (Paris Zoo, Paris, France)

The EAZA Prosimian TAG continued in working on the enhanced cooperation – within EAZA, with the AZA



TASMANIAN DEVIL (*SARCOPHILUS HARRISSI*) AT COPENHAGEN ZOO © COPENHAGEN ZOO

Prosimian TAG and with *in situ* conservation NGOs as well as the government of Madagascar – to ensure sustainable populations of prosimians in zoos and to form effective links to *in situ* conservation activities. This year saw the realization of transfer recommendations as expressed last year within complex collaboration agreements.

In 2015 the EEP, SSP and MEEMF (Madagascar’s Ministère de l’Environnement, de l’Ecologie et des Forêts; standing for several *ex situ* facilities in Madagascar) as well as individual stakeholders worked on a global cooperation to establish an “*ex situ* rescue-population” for the Critically Endangered Sclater’s lemur (*Eulemur flavifrons*). This resulted in transfers of animals between *ex situ* facilities in Madagascar and of one pair from Duke Lemur Center, US to Mulhouse Zoo, France. Although there are regional programmes for blue-eyed black lemurs (*Eulemur flavifrons*), these are now working together in an informal global cooperation.

Logistical problems hindered the transfer of a pair of Sclater’s lemurs from Ivoloïna Zoo, Madagascar to Duke Lemur Center, US. This case showed the vulnerability of breeding programmes to the consequences of restrictions from many sides on keeping and transporting animals.

There were some more inter-regional transfers of animals. La Palmyre Zoo, France and Dublin Zoo, Ireland sent a pair of Red ruffed lemurs (*Varecia rubra*) through the EEP and with logistical assistance by Delphine Rouillet and Paris Zoo to Lemuria Land. This is a private zoo on the island of Nosy Bé off Madagascar. The zoo improved also from coaching and support from the TAG and individual members and is also under some kind of surveillance by MEEMF. The transfer of the lemurs there was not only giving a political sign “bringing lemurs back to Madagascar” but was also done with the intention to provide founders for an in-country *ex situ* population of red-ruffed lemurs which might provide animals for release or re-stocking.

The idea of transferring a male Mongoose lemur (*Eulemur mongoz*) from the EEP to Lemurs’ Park, Madagascar to form a pair of this critically endangered species was nearly given up. The selected animal was found to be infertile upon thorough examination. It took time to define another male mainly because some EEP participants were reluctant to cooperate. Finally, by the end of the year a suitable male was awaiting the transfer to Madagascar.

And more transfers for the Mongoose lemur EEP: Preparation is under way to import a young pair from the SSP to slightly improve the worrying population development of the Mongoose lemur EEP.

Also noteworthy was the addition of 3.2 Bengal slow lorises



RED RUFFED LEMURS (*VARECIA RUBRA*) AT LEMURIA LAND © NOSY BÉ

(*Nycticebus bengalensis*) to the ESB population from an import from Hong Kong. This happened after three years of planning. The animals originate from a confiscation.

As well AZA and EAZA Prosimian TAGs and national associations’ staff were very much engaged in communicating with CITES and stakeholders expressing the need for transfers of lemurs between Madagascar and Europe and the United States for ensuring sustainable populations of endangered lemurs as “rescue populations” with the overall commitment to conservation. There was a need for doing so as the idea of a suspension of trade in all CITES-listed species from Madagascar (as a result of failure to implement CITES regulations) was in the pipeline before the CITES conference which took place in September 2016. AZA and EAZA TAGs and the national associations worked closely and effectively together: although the proposed suspension wasn’t imposed, CITES became aware of the zoos’ efforts in breeding programmes for lemurs and will keep this in mind for any further decisions regarding Madagascar.

The TAG Chair participated in the joint TAG Chairs meeting and the AZA Prosimian TAG meeting in Omaha. There was another fruitful exchange of ideas and experience and more so cooperation was not only confirmed but intensified. After this he visited the Duke Lemur Center, Durham, to get first-hand experience in the husbandry of Coquerel’s sifakas (*Propithecus coquereli*) and to discuss the expansion of the SSP for this species to EAZA zoos. Without doubt, sifakas need special care. In presentations and publications the TAG informed EAZA zoos about the essentials of sifaka husbandry. The TAG also facilitated communication among four interested EAZA zoos and the Coquerel’s sifaka SSP. The SSP will consider the serious interest in their next masterplanning session. New holders of sifakas in EAZA zoos will mean a healthy growth of the

overall *ex situ* population. Furthermore EAZA zoos will gain experience with the husbandry of sifakas.

Masterplanning within the EAZA Prosimian TAG is essential for the ring-tailed lemurs (*Lemur catta*) and the ruffed lemurs (*Varecia* sp.).

There is a dramatic decline of the population of ring-tailed lemurs in the wild, and it is likely that there are more *Lemur catta* living in zoos than left in the wild. However, the capacities for ring-tailed lemurs in zoos are now exceeded, and there is no more a guarantee for appropriate husbandry quality for any surplus lemurs leaving the ESB population. The ESB, together with the TAG and the population biologists of EAZA, will work on a masterplan to define the essential population developments and how to achieve these in order to ensure a demographically stable population in zoos.

There is an ongoing dispute on the status of different types of black-and-white ruffed lemurs (*Varecia variegata*). Is it valid to separate the *belted* ruffed lemurs (*V. v. subcincta*) from the “generic” black-and-white ones? Can we afford to maintain a highly inbred separate *V. v. subcincta* EEP population considering the limited space capacities for lemurs? What are the pros and cons for merging the two EEPs of the different types of black-and-white coloured ruffed lemurs? An intensive workshop will be essential to answer the questions on the goals and perspectives to reach the goals for these programmes.

The TAG edited and distributed its first newsletter. This kind of information is intended to get compiled and circulated irregularly (but hopefully frequently) to anyone who is interested in prosimians and the work of the TAG.

CALLITRICHID

TAG Chair: Eric Bairrão Ruivo ZooParc de Beauval, St. Aignan, France)

TAG Vice-Chairs: Dominic Wormell (Jersey Zoo, Jersey, UK); Miranda Stevenson (Bristol Zoo Gardens, Bristol, UK)

The TAG has 22 members and covers eight EEPs, three ESBs, monitors four species (and their subspecies) and also monitors other callitrichids in EAZA collections that are not part of programmes.

The year 2016 was once again busy. Two meetings were held, one at the EAZA Annual Conference in Belfast in September and the other, a mid-year meeting, in Beauval Zoo in March. The minutes of all meetings are on the EAZA Member Area, which provide more details on the topics mentioned in this

short report.

Programme coordination and evaluation

Aude Haelewyn-Desmoulin (Reynou) was confirmed by the EAZA EEP Committee as the coordinator for the *Saguinus labiatus* ESB. All Studbook and Annual Reports from the TAG are on the EAZA Member Area, which is being regularly updated by the TAG.

The work for the evaluation of the remaining species *Saguinus oedipus* was completed during 2015 and the final report received in 2016, with the evaluation as ‘good’. Thus all eight EEP evaluations have been completed for the second time. The reports of these evaluations are on the TAG page of the EAZA Member Area along with the QPAs for each species.

The lion tamarin group, initially formed at Wroclaw in 2015, progressed, and is termed the Lion Tamarin Conservation Link. A website is in preparation.

One issue that has greatly concerned the TAG is thefts of callitrichids. This was a topic at both meetings held during the year, and was assisted by the EAZA survey on the issue. It was decided to add a section on to the Best Practice Guidelines.

Joint TAG Chairs meeting in Omaha

Miranda Stevenson attended this meeting for the TAG. She also represented the Larger New World Monkey TAG as they were unable to send a representative. A full report was written for the TAG and published in the newsletter. Progress on the recommendations from the 2014 Alphen meeting, regarding exchanges with other regions, were reviewed at Omaha: these involve five species: *C.pygmaea*, *C.geoffroyi*, *S.i.subgrisescens*, *C.goeldii* and *S.oedipus*. One pair of cotton-tops was sent to New Zealand and a second pair should go in 2017. It is hoped that other inter-regional moves will take place in 2017, including



PIED TAMARIN (*SAGUINUS BICOLOR*) WITH INFANT © J HUNT



GROUP PICTURE WORKSHOP COLOMBIA © DOMINIC WORMELL

S. bicolor and *L. chrysopygus* from Brazil to the UK. Further progress was made on increasing inter-regional cooperation with cotton-top tamarins and possible research into the genetic differences between the wild and *ex situ* populations. A meeting in Omaha with others joining in on Skype greatly facilitated this.

Research and TAG-produced documents

The revised space survey questionnaire was sent out to holders. Some delays were encountered due to slow responses but Aude Haelewyn-Desmoulin hopes to have it completed and analysed early in 2017.

Anthony Rylands and Peter Galbusera continued to update the TAG with information on research publications on Callitrichids.

The TAG participated in research projects on: parasitic control of *Parastrongylus dujardini*; the use of ivermectin in callitrichids (published); marmoset wasting syndrome (final report received); contraceptive methods (with EGZAC, ongoing); diabetes in primates (results received); sex-bias in mammals, three callitrichid species (Geoffroy's, Goeldi's and golden-headed lion tamarins) included; bridge like structure design for crossing points for wild callitrichids; genomics, work on jumping genes in five *Callithrix* species; molecular analyses of faeces to determine wild diet in golden-headed lion tamarin populations; inbreeding depression in golden lion tamarins compared to golden-headed lion tamarins, molecular analysis, Sao Paulo Zoo; and research on *Trypanosoma cruzi* in native animals in Brasilia Zoo. The project on 'mother's curse' was completed and presented at EPMAG in Belfast.

The TAG newsletter continued to be produced and sent out to members, approximately every six to eight weeks. Greg Clifton launched the TAG facebook page. It should be noted that

Proyecto Titi (*S.oedipus*) and Programa de Conservación del Titi Gris (*S.leucopus*) both have Facebook pages.

The rolling programme for updating the BPG progressed during the year. The nutrition and veterinary sections were reviewed and updated. New sections on security and guidelines on the use of Callitrichids in public demonstrations were written. It is hoped to have these finally reviewed and incorporated in the first half of 2017. ALPZA completed the translation into Spanish and this is on the main EAZA website.

Conservation

The TAG currently supports field conservation of *S.oedipus* and *S.leucopus*, in Colombia and *L.rosalia*, *L.chrysopygus*, *L.chrysomelas*, *S.bicolor* and *C.aurita*, in Brazil

The TAG continues to support ALPZA and the South American Associations in running training workshops. Dominic Wormell and Greg Clifton assisted with one of these workshops in Colombia in December. They also visited the rescue centre for *S. leucopus* at La Victoria (Corpocaldas) Department of Caldas. It was an exciting year for the *S. leucopus* programme as the International Conservation Programme succeeded in buying 42 hectares of land known as El Vergel in the Florencia National Park (see *Zooquaria* issue 95). More land should be purchased in 2017.

EAZA Members continued to support Proyecto Titi through the Cotton-top Tamarin Club. The exciting advance in this project is the development of the new site in San Juan Nepomuceno.

Dominic Wormell continues with the pied tamarin project in Brazil, where much of the work involves planting corridors.

TAG members played a large part in the campaign to ensure that wildlife passages would be built over the BR101 to ensure the future of the golden lion tamarins.

The issue of how to increase support from EAZA collections for these vital conservation programmes has been highlighted as a major action for the TAG for 2017.

Major achievements 2016

It is difficult to pick out the most important achievements, but the completion of land purchase for the white-footed tamarin, the success of the campaign for crossing-bridges for golden lion tamarins (which was announced early in 2017) and the progression with moving animals between regions, stand out. As does our very strong links with ALPZA and the country zoo associations in South America.

LARGER NEW WORLD MONKEYS

TAG Chair: Jan Vermeer (Parc Animalier de Sainte Croix, France)

TAG Vice-Chair: Adrian Baumeyer (Basel Zoo, Switzerland)

2016 was the first year with a new Chair and Vice-Chair, we want to thank our predecessors Frank Rietkerk (Apeldoorn) and Kirsten Pullen (BIAZA) for the work they did for this TAG. One of the first steps was to change the old name, Cebid TAG, into a new name, Larger New World Monkey TAG (LNWM TAG), as this better reflects the species we are working with.

LNWM TAG evaluations

In 2016 the EEPs of the Colombian spider monkey (*Ateles fusciceps rufiventris*), the two subspecies of the black-capped squirrel monkey (*Saimiri boliviensis*), the white-faced saki (*Pithecia pithecia*) and the yellow-breasted capuchin (*Sapajus xanthosternos*) were evaluated. We are still waiting for the final evaluation result of the latter programme, but all others rated at good-sufficient. Of course there are points that need to be improved and the comments by all parties involved in the evaluations are very important to increase the quality of the programmes. Four other programmes will be evaluated in 2017.

New coordinator

Dee Winfield has been appointed as the new coordinator of the Common squirrel monkey (*Saimiri sciureus*) EEP. She will be assisted by Amanda Dennis as studbook keeper (both are from Edinburgh Zoo, United Kingdom). It has been decided that the individuals that can be traced back to the Guianas (= true *Saimiri sciureus*) will be managed separately from the common squirrel monkeys of unknown origin; in the future we should phase out the animals of unknown origin to use their space for squirrel monkeys of known origin (including *S. boliviensis*).

Programme difficulties

As with many other breeding programmes, those of the LNWM TAG are not without problems. Several programmes struggle with the identification of their animals: what (sub) species do we keep and/or do we have hybrids in the population? And if we have hybrids, how do we handle this? It is difficult to find the laboratories that can help us with these questions, but the first steps have been taken. We tested 75% of the female founders of the grey-legged night monkeys (*Aotus griseimembra*), and all proved to belong to the same species. Testing the male founders is more difficult but it is probable that they are also pure as



WHITE-FACED SAKI (*PITHECIA PITHECIA*) © JAN VERMEER

several of them have been karyotyped in the past. For the moment we will manage the (small) population as being pure. For the Colombian spider monkeys (*Ateles fusciceps rufiventris*) we discovered that two breeding females are (natural?) hybrids; we need to determine what actions we will have to take and how this will affect the population. More analyses are on the way. As there are also uncertainties on the systematics of sakis (genus *Pithecia*) and the purity of the EEP population, we started a research programme to define the genetic differences between the white-faced sakis (*Pithecia pithecia*) from the Guianas and the Brazilian golden-faced saki (*Pithecia chrysocephala*). La Vallée des Singes, France provided samples of two wildborn animals originating from French Guyana, while a researcher was in possession of samples of the other species. The genetic differences between both taxa proved to be very clear, and we now have the necessary data to screen our population (provided that we find a laboratory and that zoos will collect samples). For the time being the taxonomic uncertainty should not affect the management of the population.

There are space problems for some species, especially for the Yellow-breasted capuchin (*Sapajus xanthosternos*). This species is critically endangered in the wild and should be a priority for European Zoos. Unfortunately, there are still hundreds of hybrids or non-recommended capuchins in zoos, and several zoos are even breeding. We hope that we can slowly decrease that population (capuchins can live up to 60 years) to create space for more important capuchin species.

The population of White-faced sakis had expanded excessively, with very little focus on population genetics. It

was necessary to slow down breeding and to limit breeding to animals with a relatively high mean-kinship value.

Meetings

A Larger New World Monkey TAG meeting took place in Belfast during the EAZA Annual Conference. An audience of 65 persons heard presentations on the breeding programmes (Adrian Baumeyer) and the faeces of Spider Monkeys (Francis Cabana). The Chair, Jan Vermeer, gave presentations on the developments of the TAG, conservation programmes and the discovery of a new species of titi monkey, *Plecturocebus urubambensis*.

Conservation

Several zoos are already involved in the conservation of titi monkeys, woolly monkeys and spider monkeys, but considering the critical situation in the wild of several larger New World monkeys, more action is needed. The TAG will provide on the EAZA workspace details on different conservation projects, programme coordinators should urge the holders to support conservation associations that work for the protection of monkeys.

OLD WORLD MONKEY

TAG Chair: Neil Bemment (Paignton Zoo, Paignton, UK)

TAG Vice-Chair: Tjerk ter Meulen (GaiaZOO, Kerkrade, The Netherlands)

Old World Monkey TAG Mission Statement:

“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 human care for the purposes of education, research, *ex situ* conservation and the support of *in situ* conservation initiative.”

The Old World Monkey TAG oversees a total of 16 EEP, 10 ESB and 4 Mon-P. The TAG members are advised by four veterinary advisors.

Changes in Breeding Programmes

In 2016 the Old World Monkey TAG welcomed Andrew Hope (Belfast, Northern Ireland) as the new coordinator for the Eastern black-and-white colobus monkey ESB and Karolina Kasprzak (Wroclaw, Poland) for the newly established Angolan black-and-white colobus ESB.

At the Conservation Forum in Fuengirola (May 2016) an introductory meeting was held between Susan Lutter (incoming Chair of the Pan African Sanctuary Alliance (PASA) Board), Myfanwy Griffith (EEO), Frank Rietkerk (Apenheul, The Netherlands), Bryan Carroll (Bristol Zoo, UK), Neil Bemment (Paignton Zoo, UK) and Frands Carlsen (Copenhagen Zoo, Denmark). This meeting explored ways to further strengthen the relationship between EAZA and PASA.

Meetings

The EAZA Old World Monkey TAG (OWMTAG) held ‘closed’ Core Group and ‘open’ Holders’ meetings for all attendees at the 2016 EAZA Annual Conference hosted by Belfast Zoo, UK. Christoph Schwitzer (Bristol Zoo, UK) gave a presentation on the 2016 IUCN meeting held in Rome pertaining to the IUCN Red List including a review of the Top 25 most endangered primates. All managed Old World Monkey (OWM) taxa had been upgraded on the Red List by at least one category with the exception of the dusky langur that was now DD (Data Deficient). It was noted that the king colobus monkey had jumped two categories from VU (Vulnerable) to CR (Critically Endangered).

Drivers for status changes:

- Habitat loss through large-scale commercial agriculture (Asia, Africa), subsistence agriculture (Madagascar), commercial logging (Africa, Asia, Neotropics), illegal logging (Madagascar), mining
- Unsustainable exploitation for subsistence, bush-meat trade, pet trade or traditional medicines.

The latest edition of *Primates in Peril* had been published (2014-16)

Various members of the core group attended a Joint AZA/ EAZA OWMTAG meeting held in March at Henry Doorly Zoo, Omaha, Nebraska Chaired by Joe Knobbe (Saint Louis Zoo, US) and Vice-Chairs, Tom Ness (Minnesota Zoo, US) and Rebecca Phillips (Disney Animal Kingdom, US) where the respective EAZA and AZA Program(me) Designations were reviewed. This enabled a good comparison between the regions and will help align joint taxon management. The comparison table can be found in the OWMTAG section on the EAZA Member Area.

OWM EEP Evaluations

- Javan langur: started 2015; completed – rated as SUFFICIENT
- White-naped mangabey: started/completed in 2016 – rated as



KING COLOBUS MONKEY (*COLOBUS POLYKOMOS*) AT DUISBURG ZOO © VOLKER GRUEN

GOOD

- Francois's langur: started/completed in 2016 – rated as GOOD/SUFFICIENT
- King colobus monkey: started in 2016 – report pending.
- Lion-tailed macaque: started in 2016 – report pending

Future Management

The main issues for ongoing discussion in 2016 were:

- Mixed species exhibits to optimise OWM 'space'
- Contraception survey (EGZAC)
- Incidence of diabetes in OWMs
- Breed and Cull as a tool for managing OWMs
- Regional Collection Plan 'decision tree' in the context of the soon to be launched new EAZA *ex situ* Programme structure

Best Practice Guidelines (BPGs)

It was proposed that the BPGs be grouped into the following five manuals namely, Mangabeys, Guenons, Colobines, Macaques and Baboons with general introductions and subchapters relevant to the individual species.

Conservation & Research

The following *in situ* conservation initiatives are endorsed by the OWMTAG:

- Barbary macaque conservation in the Rif Mountains
- WAPCA activities in Ghana for Roloway monkey and White-naped mangabey
- Francois langur conservation in Cat Ba
- Drill conservation in Nigeria

- Angolan Colobus Project in Kenya

Andrea Dempsey (WAPCA) reported the following in 2016:

- Formation of the African Primatology Society - with an inaugural congress planned for 2017 in Cote d'Ivoire
- IUCN are in discussion to form a West and Central African Species Partnership based on the ASAP which was established over previous years.
- Conservation International are looking to launch a 'LOST' campaign for primates similar to that which was run for frogs - Miss Waldron's Colobus (*Piliocolobus waldronae*) will be one of those highlighted.

Carsten Zehrer (Drill EEP) reported the following in 2016:

- the EDI (European Drill Initiative), a subset of the EEP participants and 'Save The Drill' was to be disbanded in favour of a direct liaison between the Drill EEP Coordinator and the Drill Ranch, Nigeria (Liza Gadsby) regarding potential imports of new founders as part of a new collaboration with the EEP.

Lastly, Christoph Schwitzer reported that there has been a request from China for assistance with saving the Chamba sacred langur (*Semnopithecus ajax*); not currently held in EAZA zoos.

Publications

- EAZA OWMTAG Regional Collection Plan 2016 update - Tjerk ter Meulen / Neil Bemment
- Long Term Management Plan (LTMP) for Lion-tailed macaque *Macaca silenus* (1st draft) - Alex Sliwa / EEO

Most important achievement of the TAG in 2016

- Publication of the draft lion-tailed macaque LTMP
- Progressing the mandrill LTMP



JOINT TAG CHAIRS MEETING OF EAZA OLD WORLD MONKEY TAG AND AZA OLD WORLD MONKEY TAG ©NEIL BEMMENT

GIBBON

Chair: Dr Charlotte Macdonald (Twycross Zoo, Twycross, UK)

Vice-Chair: Brice Lefaux (Mulhouse Zoo, Mulhouse, France)

The Gibbon TAG continued to hold eight EEPs with six coordinators throughout 2016.

The TAG met once in 2016 at the EAZA Annual Conference in Belfast to report on work to date and also where Susan Cheyne, from the Borneo Nature Foundation, presented work on the impact of forest fires and persistent smoke on gibbon communication.

Two EEPs were evaluated during the year: The Javan gibbon programme was rated as sufficient and the good communication of the Coordinator was noted. The evaluation of the Southern white-cheeked gibbon EEP the low number of individuals was highlighted as a problem for the future of this programme. Both of these evaluations will be considered in the future prioritisation of programmes within the TAG.

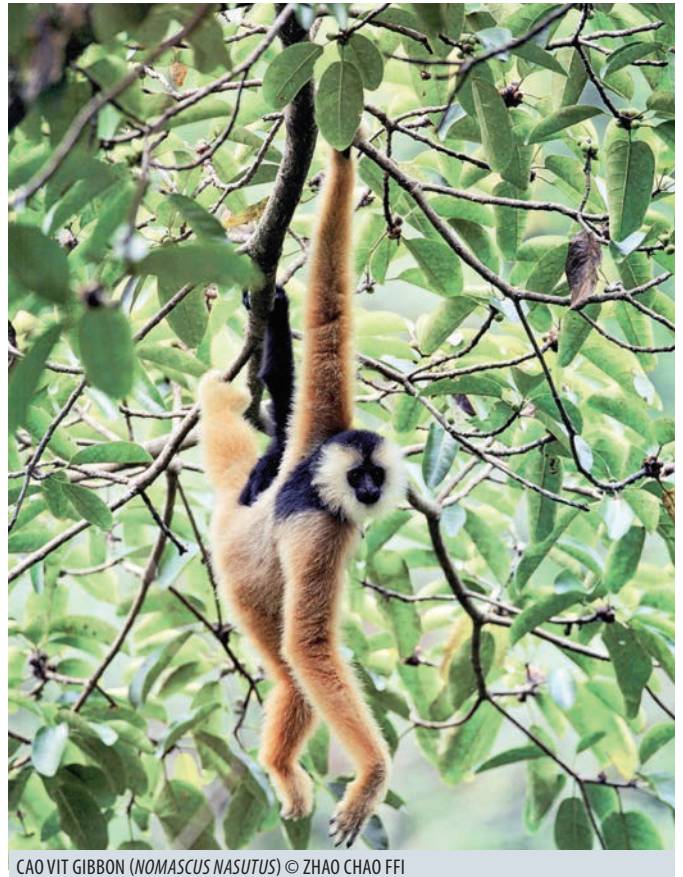
Work continues on the development of Best Practice Guidelines with the aim of completion in 2017.

Population Management

The main population management issues which the TAG has faced in recent years continued to be a lack of space available for gibbons. The large Lar programme particularly is in great need, with many surplus juveniles and young adults in need of new homes. In order to address this issue within the Lar programme a Long Term Management Plan Workshop was held at the EAZA Executive Office in October 2016. The output of this was a draft management plan that will enable the programme to reduce in number whilst still protecting genetic diversity over the coming 10 years. It is hoped that this management plan will be ratified in 2017.

There are still a small number of new holders coming on board and the Javan gibbon programme welcomed Chester Zoo and Curragh's Wildlife Park as EEP holders in 2016 and new holders are considered by the TAG and all the coordinators in order to prioritise species and optimise space availability for all the gibbon programmes.

The TAG continues to be very grateful to all holders who are facing challenging situations with their gibbons and who bring these problems to our attention in good time and work cooperatively with us to find solutions. Unfortunately, for this long-lived group of species, there are no instant solutions so we have to take a medium to long view to resolve it.



CAO VIT GIBBON (*NOMASCUS NASUTUS*) © ZHAO CHAO FFI

Conservation

The TAG's link with the IUCN Primate Specialist Group Section on Small Apes continued to develop with a new group convener being appointed later in the year. This new appointment of Dr Susan Cheyne as the group convener promises to ensure an even closer working relationship with the TAG as Dr Cheyne is already a "friend" of the TAG, having previously attended mid-year meetings and presented at the 2016 annual meeting.

The TAG continued to support the Cao-Vit gibbon project run by Fauna and Flora International, based in Vietnam; and Project Anoulak, based in Laos, www.conservationlaos.com.

The Fauna and Flora International Cao Vit Gibbon project had a very successful year. The community patrol continued their monitoring of the Cao Vit gibbons and other species in the protected area throughout 2016 and a recent population census revealed that the population may be increasing, or is at least holding steady with 124 – 136 individuals recorded. This is a great improvement from 2007 numbers of 110 gibbons. A new Country Director for Vietnam was appointed by FFI and the TAG Chair met with him at the end of the reporting period, to discuss ways in which the TAG can work more closely with the Cao Vit project.

Project Anoulak continued to be extremely active throughout

2016 with multiple objectives proceeding, including the continued habituation of gibbon and douc langur groups to enable ecological and behavioural data to be recorded; training of other patrol and study groups working in the wider region to survey gibbons; delivering three workshops to over 800 school children and partnering with Creative Literacy Laos, to reach more students; and delivering multiple workshops in partnership with National Forestry Law and the Saola Working Group on law enforcement. Furthermore the project received financial support from the Arcus Foundation and the Gibbon Conservation Alliance to purchase sound recording equipment and to continue survey work, and trained two members of staff on an intensive English course. The final endeavour in 2016 was the publication of a beautifully illustrated children's book: *The Wonders of the Annamites* (Project Anoulak, Eric Losh, 2016), which highlights the regions wildlife and the need to conserve it.

GREAT APE

Chair: María Teresa Abelló (Barcelona Zoo, Barcelona, Spain)

Vice-Chair: Jeroen Stevens (Royal Zoological Society of Antwerp, Antwerp, Belgium)

EAZA Great Ape TAG vision and mission statement

Vision: Apes are taxonomically our closest living relatives.

They are of great interest from the social-educative, scientific, and conservation point of view. We are committed to ensuring the long-term survival of *ex situ* and *in situ* healthy and viable bonobo, chimpanzee, gorilla, and orang-utan populations.

Mission: The mission of the Great Ape TAG is to maintain self sustaining populations of all the taxa of great ape to sub specific level where possible, and to encourage and promote their conservation in the wild.

The role of zoo populations is primarily to act as ambassadors for educational purposes on the plight of apes in the wild, to further support for their conservation in the wild, and as a research resource, the findings of which should be applied to improving their husbandry, welfare and *in situ* conservation. Zoo populations of great apes may also be vital for future reinforcement of wild populations and, therefore, should be managed to preserve maximum genetic diversity.

Regional Collection Plan (RCP)

At a regional level, institutions keeping individuals of any of the above species or who are willing to participate in any of the

EEP's for great apes receive information, advice and support from the respective coordinator to ensure the best possible animal care.

Currently the TAG holds five EEPs:

- Western lowland gorilla EEP (*Gorilla gorilla gorilla*) when technical and economical necessities are solved, genetic determination will be promoted.
- Bornean Orang-utan (*Pongo pygmaeus*) and Sumatran Orang-utan EEP (*Pongo abelii*). The two orang-utan species are being managed separately, but not split on subspecies level to avoid the risk of losing their viability.
- The robust Chimpanzee EEP covers all 4 subspecies of chimpanzees and their hybrids, including breeding programmes for western chimpanzees (*Pan troglodytes verus*) and central chimpanzees (*P. t. troglodytes*) only.
- The Bonobo EEP (*Pan paniscus*) We aim for the best population management, avoiding surplus problems as far as possible.

Regional Collection planning targets the following populations with a respective percentage of Gene Diversity as a minimum for the next 100 years:

Pongo pygmaeus: 200 individuals with 95% of genetic diversity

Pongo abelii: 200 individuals with 95 % of genetic diversity

Gorilla gorilla gorilla: 500 individuals with 95% of genetic diversity

Pan troglodytes verus: 500 individuals with 95% of genetic diversity

Pan paniscus: 200 individuals with 90% of genetic diversity

These figures should be reviewed if considering supporting regional programmes and gorilla populations in countries that have no viable *ex situ* population of their own.

Best Practice Guidelines

The former husbandry guidelines for bonobos and for gorillas have been updated producing the "Best Practice Guidelines" and will be available during 2017. Best Practice Guidelines for orang-utans and chimpanzees are in progress, and could be finished around 2017 or early 2018.

Great Ape TAG Evaluations

All the programmes were evaluated during past years with a good qualification. The next round of evaluations will be as follows: Orang-utan EEP in 2017, Bonobo EEP in 2018, Western lowland gorilla EEP in 2019, and Common chimpanzee EEP in 2020.

Species Committee elections are scheduled as follows: Western lowland gorilla 2017; Orang-utan 2018, Common



YOUNG WESTERN LOWLAND GORILLA (*GORILLA GORILLA GORILLA*) © FABIOLA PAOLA CORCIONE

chimpanzees 2018.

Meetings

The Great Ape TAG met twice in 2016. The midyear meeting took place in Barcelona, Spain, in April.

Important issues discussed there and that deserve to be highlighted are: the collaboration with EGZAC (European Group on Zoo Animal Contraception), the new EAZA Member Area that allows sharing much more information than in the past, the importance of working with other regions towards global populations for conservation, and the new veterinarian guidelines that will be ready during 2017. We still need to promote the EAZA Conservation database, and also to continue strengthening links with other organizations as the Pan African Sanctuary Alliance, Great Ape Survival Project, and the IUCN to reinforce our contribution to *in situ* conservation.

The 2016 Annual meeting took place in Belfast during the EAZA Annual Conference. This meeting allows a direct communication between the participants in the different EEPs and is a valuable opportunity to present updates regarding population management, research, conservation

and other issues gathered through the year. In addition to the usual updates from the various EEPs, there were interesting presentations about “Possible Breeding Strategies for Female Western Lowland Gorillas Infected with *Echinococcus multilocularis*”, the “Ape heart project and mortality study update”, the new “Veterinary Guidelines What do you need to know”, “Using genetics to support the global conservation of Chimpanzees (*Pan troglodytes*)”, orang-utan nutrition, a review of bachelor gorilla groups, and a comparison between EEP and SSP programmes: demographics and genetic results.

Research

The Ape Heart Project continues under the coordination of S. Redrobe. Mortality causes results were presented by V. Strong during the midyear meeting. EGZAC continue compiling information about contraception experiences.

Genetics: The chimpanzee genotyping project reached a new milestone in 2016, adding a new and more detailed Single Nucleotide Polymorphisms (SNP) based testing method to the portfolio of genotyping methods. This method will allow us to detangle complex relationships and resolve the origin of

individuals beyond generation F2. The results of a comparison of 75 chimpanzee and bonobo genomes revealed new insight into the species' shared evolutionary history and provided evidence for a tight link between chimpanzee genetic diversity and African geography, which means that when a chimpanzee is confiscated e.g. by customs, a DNA sample can help reveal its geographical origin and thus help return confiscated individuals to their country of origin. The techniques and knowledge gained from this as well as previous studies can be applied to other great ape species as well.

Research on wellbeing, kind of social grouping and its relation to cortisol levels is under development but some results have been already highlighted.

We need to develop artificial insemination techniques to be ready for the future.

***In situ* Conservation**

Links between the EEPs and *in situ* conservation projects have been intensified during the last years. Further development is expected for the future, so as to engage in Global Conservation not only by cooperating with *ex situ* programmes in other regions, but also by reinforcing the collaboration and support to *in situ* conservation organizations.

Publications of interest

Classen, D., Kiessling, S., Mangalam, M., Kaumanns, W., & Singh, M. (2016). Fission–fusion species under restricted living conditions: a comparative study of dyadic interactions and physical proximity in captive bonobos and Bornean orangutans. *Current Science*, 110(5), 839.

Garcia, M., Power, M., & Moyes, K. M. (2016). 0848 Nutrient composition of milk from great apes throughout lactation. *Journal of Animal Science*, 94(supplement5), 408-408.

Kuhlwilm, M., de Manuel, M., Nater, A., Greminger, M. P., Krützen, M., & Marques-Bonet, T. (2016). Evolution and demography of the great apes. *Current Opinion in Genetics & Development*, 41, 124-129.

Leendertz, S. A. J., Wich, S. A., Ancrenaz, M., Bergl, R. A., Gonder, M. K., Humle, T., & Leendertz, F. H. (2016). Ebola in great apes—current knowledge, possibilities for vaccination, and implications for conservation and human health. *Mammal Review*.

de Manuel, M., Kuhlwilm, M., Frandsen, P., Sousa, V. C., Desai, T., Prado-Martinez, J., ... & Schmidt, J. M. (2016). Chimpanzee genomic diversity reveals ancient admixture with bonobos. *Science*, 354(6311), 477-481.

Nam, K., Munch, K., Mailund, T., Nater, A., Greminger, M. P., Krützen, M., ... & Schierup, M. H. (2017). Evidence that the rate of strong selective sweeps increases with population size in the great apes. *Proceedings of the National Academy of Sciences*, 201605660.

Stiles, D., Redmond, I., Cress, D., Nellemann, C., & Formo, R. K. (2016). Stolen Apes* The Illicit Trade in Chimpanzees, Gorillas, Bonobos, and Orangutans. *The Environment in Anthropology: A Reader in Ecology, Culture, and Sustainable Living*, 359.

Strong, V. J., Grindlay, D., Redrobe, S., Cobb, M., & White, K. (2016). A systematic review of the literature relating to captive great ape morbidity and mortality. *Journal of Zoo and Wildlife Medicine*, 47(3), 697-710.

SMALL MAMMAL

TAG-Chair: Jutta Heuer (Halle Zoo, Halle, Germany)

TAG Vice-Chairs: Richard Viduna (Jihlava Zoo, Jihlava, Czech Republic); Sandra Honigs (Aquazoo, Düsseldorf, Germany); Klaus Rudloff (Berlin Tierpark, Berlin, Germany)

Small Mammal TAG mission statement

The Small Mammal TAG supports and promotes the conservation of the small mammal species within our scope around the world. This is achieved through *ex situ* management, conservation education, engagement in *in situ* management and conservation programmes, and advocacy for these species both in human care and in the wild.

TAG Objectives

- Promoting high standards of welfare for *ex situ* animals by providing a forum for discussing husbandry, veterinary, ethical and other issues ensuring the development of improved animal management techniques and producing Best Practice Guidelines for managed species.
- Actively encourage more EAZA institutions to keep and breed small mammal species to represent greater mammal

biodiversity.

- Promoting collaboration and cooperation between holders of small mammal species.
- Connecting *ex situ* programmes with *in situ* conservation efforts, and encouraging fundraising to support *in situ* conservation.
- Encouraging high quality research *in situ* and *ex situ*.
- Promoting education programmes within Europe and in range states.
- Establish and regularly review the Small Mammal RCP, to reflect the large number of species within our remit.

Regional Collection Plan

The discussion about the RCP was very important within the mid-year meetings in Biotropica France 2015 and Jihlava Czech Republic 2016. Our TAG is responsible for about 4,500 species. Persons responsible for taxonomical subgroups were found for the development of a new RCP. The best way to deal with the mass of rodents and bats and the other species is to create a list of animals, which should be recommended within the TAG. This discussion will be continued.

Meetings

The mid-year meeting took place at Jihlava Zoo in Czech Republic; many thanks to Jihlava Zoo for hosting it. The TAG members presented very interesting presentations about different small mammals, reports from the actual programmes and from conservation projects.

Various reports about housing and keeping small mammals

in the zoos of Jihlava, Magdeburg, Frankfurt, Chester, Prague, Moscow, St. Petersburg, Shaldon, Australian zoos and others were given. The presentations are published on the TAG workspace in the EAZA Member Area. The zoos of Jihlava, Prague and Plzen were visited by the TAG members.

Ilona Schappert (Giant anteater EEP Coordinator and ISB Keeper), Allan Galway (Green Acouchi) and Jutta Heuer (TAG-Chair), attended the International TAG Chairs meeting in Omaha. Personal contacts were improved with the Pangolin, Aardvark and Xenarthra (PAX) joint TAG, the Bat TAG, the IUCN SSC Sloths, Anteater and Armadillos and many other professional colleagues worldwide.

For the first time the Small Mammal TAG held two meetings within the EAZA Annual Conference in Belfast. As a result, the TAG had more time for all recommended species and for interesting presentations. A very important point is the future of the Small Mammal TAG and changing of its structure for the near future.

In situ projects

Furthermore, the TAG also supports the Pakarana project in Bogota, Colombia, the Pangolin project in Asia, particularly in Vietnam; and other projects for Giant anteaters (*Myrmecophaga tridactyla*), Silky anteater (*Cyclopes didactylus*), Pygmy sloth (*Bradypus pygmaeus*), Northern three-banded armadillo (*Tolypeutes tricinctus*), Giant armadillo (*Priodontes maximus*), Balkan snow vole (*Dinaromys bogdanovi*), European souslik (*Spermophilus citellus*), Laotian rock rat (*Laonastes aenigmamus*) and more.



MID-YEAR MEETING SMALL MAMMAL TAG AT JIHLAVA ZOO, CZECH REPUBLIC © JIHLAVA ZOO



MADAGASCAN GIANT JUMPING RAT (*HYPOGEOMYS ANTIMENA*) © GERSEY

The Small Mammal TAG is focused on cooperation and collaboration with different SSC of the IUCN, which are relevant for our TAG and the relevant TAGS of the AZA.

Case study

The population of the Madagascar giant jumping rat (*Hypogeomys antimena*), also called votsotsa, in Europe is decreasing. It is very important to keep this very rare and endangered species alive in European zoos. Adding new unrelated individuals is important to maintain the population. New holders are very welcome in the International and European Studbooks. Preferably this species should be kept alone for breeding, surplus animals do well when housed with Galagos, Mouse lemurs, Loris and other.

Publications:

Most presentations and species reports are available on the EAZA Member Area.

You can also visit us on Facebook as closed group: EAZA Small Mammal TAG.

CANID AND HYAENID

TAG Chair: Raymond van der Meer (Amersfoort Zoo, Amersfoort, The Netherlands)

TAG Vice-Chair: Simon Marsh (Yorkshire Wildlife Park, Doncaster, UK)

Canid & Hyaenid TAG Mission Statement

The mission of the EAZA Canid and Hyaenid TAG is 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
- Promoting cooperation between EAZA Members and other organisations with similar goals

TAG Meetings 2016

From 19–20 March an Integrated Collection Assessment and Planning (ICAP) workshop for Canids and Hyaenids was held in Omaha, US. This is a new workshop process resulting from a joint effort between CBSG and regional zoo associations (EAZA and AZA). It is a tool that will help to work towards a One Plan Approach that will feed into the Regional Collection Plan. During the workshop it was the aim to go through a five step approach for each species across a total of 43 taxa. The steps were divided into:

1. Review status information
2. Discuss potential conservation and non-conservation roles, and rating of benefit of any roles identified
3. Identify the characteristics and scope of the *ex situ* programmes needed to fulfil the identified role(s)
4. Assess resources needed, feasibility and risks
5. Formulate recommendations regarding *ex situ* programmes

The output of this process serves as framework upon which zoo associations can draw to make their RCPs.

In the meeting were 20 zoo representatives from six regions (EAZA, AZA, ZAA, ALPZA, PAAZAB and CZA), four members of the Canid or Hyaenid Specialist group from the IUCN and one member of the IUCN SSC. There were two other wildlife managers, six observers and three CBSG facilitators. The report from the workshop should be done in spring 2017 and an EAZA RCP meeting is set for summer of 2017.

In situ Conservation

One of the aims of the TAG is to promote support for conservation in the wild. We have identified and collate a list of *in situ* conservation projects which are on-going, long term and trusted. We are regularly approach by EAZA Members to assist them in finding conservation field project, the TAG has now finalised a list of canid and hyaenid *in situ* conservation projects and which be available for all EAZA Members.

Research

We are pleased that Kerry Hunt from Sparsholt College, UK, has joined the TAG's Research Advisor Group. Kerry



INTEGRATED COLLECTION ASSESSMENT AND PLANNING (ICAP) WORKSHOP FOR CANIDS AND HYAENIDS, OMAHA, NEBRASKA, USA © RAYMOND VAN DER MEER

is a lecturer and has conducted several studies on carnivore species, she also has a background in working in zoos. Kerry will be working alongside Udo Ganslosser from Greifswald University to help collate and disseminate relevant research to EAZA Members and assist the TAG and breeding programme coordinators to formulate our Research Strategy. Research will be posted on the Canid and Hyaenid TAG work space on the EAZA Member Area.

Breeding Programmes

The breeding programme coordinators are busy working on the new Best Practice Guidelines. We hope that the African wild dog (*Lycaon pictus*), Bush dog (*Speothos venaticus*) and Dhole (*Cuon alpinus*) Best Practice Guidelines will be available soon.

The Bush Dog EEP evaluation was completed in 2016. Overall the bush dog breeding programme is working well and EAZA Members are happy with the way the coordinator manages the programme. Areas of improvement were identified though. These were, new elections for a species committee to assist the coordinator, produce health check protocols for transfers, recruit a veterinary advisor and produce Best Practice Guidelines.

BEAR
Bear TAG Chair: José Kok (Ouwehands Zoo, Rhenen, The Netherlands)
Bear TAG Vice-Chair: Lydia Kolter (Cologne Zoo, Cologne, Germany)

Meetings

The Bear TAG held two meetings in 2016, the mid-year meeting, which was kindly hosted by Mulhouse Zoo, France, and the TAG meeting during the EAZA Annual Conference in Belfast, Northern Ireland.

The mid-year meeting took place from 24 – 26 April. Day one contained presentations on updates of the different Ursid programmes, except for Asiatic black bears (*Ursus thibetanus*). A general feature of the tropical bear species programmes - the sun bear (*Helarctos malayanus*), sloth bear (*Melursus ursinus*) and spectacled bear (*Tremarctos ornatus*) - is a lack of appropriate spaces for breeding as well as single sex groups. The majority of “Ursid spaces” are occupied by brown bears of unknown origin. Unfortunately, discouraging the keeping and breeding of bears of unknown origin is not yet entirely successful.

The suggestion to phase out one or two of the tropical species in order to make sufficient space available for at least one species in EAZA was countered with the argument that at the moment, and probably for quite some time in the future, EAZA, AZA and ZAA might be the only organisations providing standards in terms of husbandry and population management sufficient to maintain *ex situ* populations of these tropical species.

Julie Mansell, Belfast Zoo, UK, volunteered to edit the planned EAZA Bear TAG newsletter. It was agreed to restrict it to a maximum of three pages and send it to all bear holders known to the programme managers. The first issue focused on sun bears and the status of the European population.

The second and third day of the meeting focussed on polar bears. It was a joint effort between the EAZA Bear TAG and Polar Bears International (PBI). Several participants of the Polar bear (*Ursus maritimus*) EEP attended this part of the meeting. PBI advocates polar bear conservation and promotes conservation education and research in zoos. The following presentations aimed to give an overview on polar bear research projects in European and North American zoos:

1. What does the genetic history of polar bears tell us about their future? By Prof. Axel Janke, Senckenberg Institute, Frankfurt, Germany.
2. Differences in mother-offspring behaviour – a case report on interactions in captivity in the first days post partum in captivity. By Chad Gessel.
3. Measuring glucocorticoids respectively their metabolites in hair and faeces of polar bears. By Anna Hein, Veterinarian Zoo Karlsruhe, Germany.
4. The large enclosure for polar bears at Highland Wildlife Park. By Douglas Richardson, Director of the Highland Wildlife Park, Kingussie, Scotland,
5. Autonomic and behavioural thermoregulation of polar bears in European zoos. By Dr. Lydia Kolter and Dr. Marion Schneider, Cologne Zoo, Germany.
6. Using the *ex situ* population as a meta-population for biological sampling and the role of the SSP Chair in coordinating and facilitating, by Dr. Randi Meyerson (SSP Coordinator), Toledo Zoological Gardens, US.
7. Collaborative conservation research efforts increase sample size for studies of behaviour and physiology. By Dr. Megan

Owen , Associate Director, Institute for Conservation Research, San Diego Zoo Global, US, and Geoff York, Senior Director of Conservation, Polar Bears International.

8. Conservation research advancements made possible through collaborative animal training. By Amy Cutting, Animal Curator, Oregon Zoo, US.

Possibilities for cooperation between the SSP and the EEP were discussed. Birth rate is very low in North American zoos. This might be due to former long-term female contraception with Deslorelin (=GnRH agonist), but more research is needed. Since the polar bear is recognized as an endangered species, it falls under the US Marine Mammal Protection Act, which makes transfers of polar bears into or out of the US impossible. This hampers the SSP a lot. Even if research permits issued by the US Marine Mammal Commission allow for the import of polar bears into EAZA, this does not necessarily mean that these animals are allowed to breed.

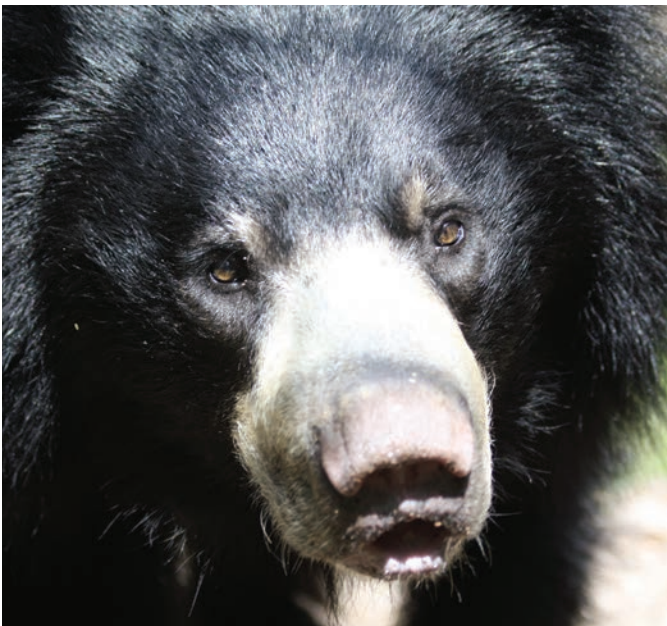
When considering the most urgent research questions on physiology and behaviour, it became clear that more EEP member zoos should implement training into their routines. A survey among the EEP participants revealed that several already trained their polar bears and others plan to do so. It was decided to organise a training workshop for polar bear keepers in Europe in 2017.

Best Practice Guidelines (BPGs)

The Bear TAG has approval from the EEP Committee to leave the format of the Husbandry Guidelines as they are, as long as the missing headings of the BPG template will be integrated



POLAR BEAR (*URSUS MARITIMUS*) © BRICE LEFAUX



SLOTH BEAR (*MELURSUS URSINUS*) © MARCEL ALAZE

at the end. Literature has been compiled, so that the missing information can be filled in.

Conservation education projects

There is a new tendency amongst zoo educators to contact (school) groups for conservation education issues via Skype. This seems to work very well and is cheap and simple!

The Linking Network for Conservation and Zoos (LINCZ) was exemplified. The idea is:

- to make it easier for zoos to find appropriate conservation projects by giving them the opportunity to select for species, regions, themes, and type of support (money, in kind)
- work with NGO's that are TAG-approved
- have up to date information available which is the responsibility of the participating NGO's.

EAZA Annual Conference

An overview of all programmes was provided. They can be found in the proceedings section of the Belfast meeting. José Kok presented an analysis of the European Syrian brown bear (*Ursus arctos syriacus*) population, including photo documentation. Most living animals go back to a litter of three individuals originating from the Erzurum region in Turkey, which were donated to Vienna Zoo, Austria. This may explain their pretty uniform appearance. Animals from other regions look different. A recent study based on a mt-DNA analysis from samples collected all over Turkey, including comparison with haplotypes from adjacent regions, does not at all support the existence of a population which deserves sub-species status in

this region.

Publications

The 2016 International Sloth bear studbook compiled by J. Kok was published with assistance from the Bears in Mind Fund.

An overview article on alopecia in spectacled bears describing the frequency, development and current symptomatic treatment has been published: Drake, G.; Bechstein, N. & L.Kolter (2016) Bear facts of hair loss. Zooquaria, 2016 (92), 18-19.

SMALL CARNIVORE

TAG Chair: Aude Haelewyn-Desmoulin
(ParcZoo du Reynou, Limoges, France)

TAG Vice-Chair: Allan Galway (Belfast Zoological Gardens, Belfast, UK)

TAG meetings and relationships with other bodies

The Small Carnivore TAG held three meetings in 2016; A two-day mid-year meeting was held in Rotterdam Zoo in the Netherlands, and two meetings were held during the EAZA Annual Conference.

Along with programme updates from the TAG, Will Duckworth, IUCN SSC Small Carnivore Specialist Group and conservation advisor to the TAG, gave an update on the recent small carnivore Red List revisions. Three species are Critically Endangered (including European mink (*Mustela lutreola*) and Cozumel island raccoon (*Procyon pygmaeus*), 10 species are Endangered (including red panda (*Ailurus fulgens*) and bokiboky (*Mungotictis decemlineata*) and 155 species fall into LC/NT/VU and DD categories.

The TAG discussed the best way forward to start new conservation projects.

Three new projects have been proposed on top of the already established projects such as the Owston's civet project and red panda forest guardian programme.

- Europe / Romania - European mink and marbled polecat project – this hopefully will be developed in conjunction with next year's mid-year meeting
- South-East Asia / Cambodia - Otters project (smooth-coated (*Lutrogale perspicillata*), Asian short-clawed (*Amblonyx cinereus*) and hairy-nosed otters (*Lutra sumatrana*).
- Madagascar / Small carnivore project – a TAG sub-group will be formed to develop this project, it is thought we can potentially mirror the successful Owston's project with Madagascan carnivores. The sub-group will include the TAG Chair and Vice-Chair, the coordinators for the existing



CAMERA TRAP OF THE BEARCAT STUDY PROGRAM, PHILIPPINES ©ABCONSERVATION

Madagascan carnivore programmes, some advisors and experts.

During the EAZA Annual Conference in Belfast, a closed meeting allowed for the discussion of the results of the newly established monitoring programmes. A red panda species committee meeting was held to discuss the current Long Term Management Plan and tools available to control breeding.

During the open meeting, programmes reports were given for species from the three main areas described above, together with updates on ongoing TAG research and conservation projects.

The TAG Chair and Vice-Chair attended the second joint TAG Chairs meeting in Omaha, Nebraska, US. It was a great opportunity to strengthen relationships with colleagues from AZA, ZAA, ALPZA, IUCN and other professional zoo and conservational bodies. The AZA small carnivore mid-year meeting followed the joint TAG Chairs meeting. After a presentation of the EAZA Small Carnivore TAG activities, organisation and programmes, a discussion was held on how both TAGs could work together better in the future. As a result of the meeting, Nicole Duplaix the Chair of the IUCN Otter Specialist group joined the TAG as a new conservation advisor.

The TAG Vice-Chair attended the 13th International IUCN Otter Specialist Group congress in Singapore and became the Chair of the IUCN Otters in Zoos taskforce for the Otter Specialist Group.

TAG structure, programme updates and EEP evaluations

As a first result of the recent RCP, nine members joined

the TAG to monitor 26 new species. A new structure was implemented, with core members (13), species monitors (13), a research coordinator and advisors for nutrition (1), conservation (3), communication and marketing (1) and all TAG activities (4).

The binturong (*Arctictis binturong*) ESB was upgraded to an EEP, the ring-tailed vonsira (*Galidia elegans*) and bokiboky (*Mungotictis decemlineata*) from a monitoring programme to an ESB.

The TAG evaluated the EEPs for red panda and wolverine. The results of these will be available at the beginning of 2017.

Research programmes

Binturong holders have been contacted to send samples of blood, hair and faeces for genetic analyses. This ongoing study should add new information to the previous one, on genetic diversity of *ex situ* binturong populations in European zoos (Cosson *et al.* 2007). More animals from regions which were not included first were added. Both studies help the breeding programme to attempt to assess the geographic origin of the binturongs.

It is critical to ascertain the geographical origin of the individuals and their kinship. Indeed, less than a quarter of the European *ex situ* population has a known origin, while at least 85% of known ancestry is needed for a correct management.

Geraldine Véron, researcher from the French national museum of natural history has received 139 viable samples from zoos, field and museums. So far 88 individuals have been sequenced. The preliminary results show a clear divergence

for individuals from specific regions (as Palawan or other regions...).

Other programmes in 2016:

- Adrenal activity and behavior of *ex situ* binturong depending on husbandry and human-animal interface by Agathe Debruille and the EEP coordinator, Aude Bourgeois.
- Mortality of young carnivores in captivity: case study of the *ex situ* civet populations between 2004 and 2014 by Leslie Mattoy and Guillaume Douay

On-going activities:

- Hepatocarcinoma in binturong and PKD in red pandas by Guillaume Douay
- Nutrition and kidney issues in otters by Francis Cabana

Conservation activities – example of *Arctictis binturong* Conservation (ABConservation) and the Bearcat Study Program

The long-term goal for ABConservation, a French NGO, is to improve the binturong welfare in human care and have its IUCN status and CITES appendix revised.

The binturong is listed as Vulnerable by IUCN: its population has declined by more than 30% over the past 30 years. The main causes of this decline are the extension of illegal trade, for human consumption or pet trade, as well as massive deforestation.

Currently, we don't have enough data from wild binturong to precisely evaluate the decline and effectively protect the species. The objective of the Bearcat Study Program is to collect data on binturong ecology and biology by setting up camera traps in treetops (February 2017 to January 2018) and catching one specimen that will be radio-collared and followed over several months (from February 2018).

The Bearcat Study Program takes place on Palawan Island (Philippines), near of Cleopatra's Needle critical habitat, in the Barangay of Langogan. After having obtained the research permit from the Palawan Council for Sustainable Development (PCSD) and signed a Memorandum of Agreement with City Government of Puerto Princesa (LGU) and city environment and natural resources office (CENRO), ten camera traps have been set up in February 2017. Half of them were placed in baliti trees (*Stangler ficus*) and the other half in an organic coffee farm. So far, the following species have been observed: Philippine palm civet (*Paradoxurus philippinensis*), Philippine Pangolin (*Manis culionensis*), Palawan Hornbill (*Anthracoceros marchei*), Long-tailed Macaque (*Macaca fascicularis*) etc.

Data collection is managed by the volunteer family of the coffee farm. Two guides, amazing tree-climbers, have been

employed and trained to change memory cards and batteries of the cameras set up 15 meters high in the trees. Data will be analysed by the scientific officer of ABConservation, Dr Agathe Debruille.

A partnership request with the Western Philippines University (WPU) is under way to involve local students from 2018. A permit request has been submitted to the National Commission Indigenous People (NCIP) to be allowed to work in the indigenous forests.

In the future, an educational programme around the binturong conservation and its ecosystem will be set up in schools and for residents of Palawan. The educational panels of ABConservation have already been translated in Tagalog, for schools of the barangays isolated, where the residents don't speak English.

FELID

TAG Chair: Dr. Alexander Sliwa (Cologne Zoo, Cologne, Germany)

TAG Vice-Chairs: Grégory Breton (Le Parc des Félines, Nesles, France) & André Stadler (Wuppertal Zoo, Wuppertal, Germany)

Felid TAG mission statement

The EAZA Felid TAG strives to maintain genetically and behaviourally healthy and sustainable populations of species and subspecies of wild felids, in order to educate the public on their vital role in ecosystems and part of the human culture worldwide. Our role is to support education, conservation through breeding and research, lending expertise to appropriate bodies, as well as collecting funds to support the wild populations. We aim to maintain the highest possible standards in husbandry and genetic management to propagate their continued survival.

Felids are charismatic animals and almost every zoo displays at least one big cat species, however fewer and fewer display small cat species. Regardless of this, many felid programmes have been established in our region. In 2016, there are 19 EEPs, five ESBs and nine (sub)species monitored by Monitoring-P(ersons). The Felid TAG has the mission to review the functioning of these programmes and choose the strategy for the future years.

Regional Collection Plan (RCP)

The Felid TAG is currently updating the RCP, based on various

reviews and updates from the version that was published in 2000. The new version will be published in 2017.

Zoo collection planning

The Felid TAG Chairs constantly advise zoos in their collection planning, once approached. Zoos are also able to look up each taxa's (species and subspecies) position and population goal in the yearly updated summary table, which is available on the EAZA Member Area.

Felid TAG Evaluations

During 2016, the following EEPs were evaluated: Margay (*Leopardus wiedii*), Sand cat (*Felis margarita*), Geoffroy's cat (*Leopardus geoffroyi*), Southern cheetah (*Acinonyx jubatus jubatus*), and Asiatic golden cat (*Catopuma temminckii*).

Long Term Management Plan

In 2016, two Long Term Management Plan meetings took place. The meeting for the Eurasian Lynx (*Lynx lynx*) took place in Amsterdam, The Netherlands, on 21-22 July, followed up by a meeting with the TAG Chair and Vice-Chairs at the EAZA Annual Conference in September 2016 in Belfast as well as Skype meetings. The meeting for the Persian leopard (*Panthera pardus saxicolor*) was hosted by Lisbon Zoo, Portugal, in December 2016.

Meetings

In 2016, the EAZA Felid TAG held their mid-year meeting at Wuppertal Zoo, Wuppertal, Germany on 4-6 March 2016 and

two sessions during the EAZA Annual Conference in Belfast Zoo, Belfast, UK on 23 September. During the latter meeting, there were several closed meetings of Species Committees for several species' EEPs.

At the Belfast meeting, there was an update by Teague Stubbington, Zoological Society of London (ZSL), UK, on the population status of generic (subspecies hybrid) and white tigers, which served to remind the EAZA Members in the audience that the Felid TAG had produced a statement in 2015 on the non-recommended keeping and breeding of hybrid tigers and particularly white tigers. The long-term reduction in numbers of those non-recommended tigers should free space for the two recommended (Amur and Sumatran) tiger subspecies.

A new coordinator for the Geoffroy's cat EEP was found, and although there were several suitable candidates, the decision for one was only taken in March 2016 and granted to Jan Vasak, Jihlava, Czech Republic, who took over from Raymond van der Meer, Amersfoort, The Netherlands. A new ESB coordinator has been found for the Eurasian Lynx, Jochen Lengger from Schwerin Zoo, Germany, who took over from Lars Versteeg, Safaripark Beekse Bergen, The Netherlands. There also have been two internal changes of the Asiatic lion EEP Coordinators, from Rikke Nielsen to Jens Sigsgaard, both at Aalborg Zoo, and then back to Rikke again.

There have been continued efforts to support and be involved in research regarding the origin and future goals for African lions within EAZA collections.

The TAG Chair continues to guide and advise, together



MID-YEAR MEETING FELID TAG AT WUPPERTAL ZOO ©ALEX SLIWA

with the Persian Leopard (*Panthera pardus ciscaucasica*) EEP Coordinator, José Ferreira (Lisbon Zoo, Portugal), in conjunction with the IUCN Cat Specialist Group, about the breeding and reintroduction of Persian leopards stemming from the EEP into the Russian Caucasus Mountains.

Several EEPs for felids, particularly the Southern cheetah, Clouded leopard and Snow leopard EEPs, but also recently the Sand cat EEP, experienced problems with holders sending out and receiving individuals from non-EAZA institutions with consecutive trade (selling of cats). After the leopard cat (*Prionailurus bengalensis*) and jungle cat (*Felis chaus*), the sand cat (*Felis margarita*) is now another small felid that is crossbred with domestic cats (hybridization) by unethical breeders for commercial purposes. These have been very difficult to mitigate, using letters and phone calls on the issues. These infringements must be taken seriously in the future with stringent actions taken against EAZA Members involved in these unauthorized dealings.

All the above activities shape the goals and functions of the Felid TAG in the past and for the future.

Publications

Hartman, M., Ferreira, J.D., Sliwa, A., and Breitenmoser, U. 2016. Zooquaria. Winter 2016. From the zoo to the wild - 95: 14-15.

Media Advice

The Felid TAG Chair is increasingly requested to comment on numerous issues brought up by various media representative on operational details, husbandry and safety, trade and in particular on the larger and high profile species. This consumes copious amounts of time and is politically sensitive, thus strenuous to answer in order to not damage EAZA and its Members' reputations. Much of the advice given is towards EAZA's communication staff at the Executive Office.

Conservation and Research

The TAG Chair, Alex Sliwa, has been actively involved in long-term *in situ* work on black-footed cats in South Africa and together with Grégory Breton, have initiated and continued *in situ* work on sand cat (*Felis nigripes*) in southern Morocco in a partnership between Rabat Zoo, Parc des Félines and sponsored by several EAZA Members and NGOs specializing in felids. André Stadler is continually updating the EAZA *in situ* projects list on Felids. Alex Sliwa is the lead assessor for both black-footed cats and sand cats for the 2016 IUCN Red List assessments. In 2016, Alex Sliwa also started a discussion group on how to improve the husbandry of the few flat-headed cats

(*Prionailurus planiceps*) in human care in Thailand, together with advisors and experts from other zoos, with the goal to establishing a back-up population of these small endangered felids, should they come into captivity from the illegal wildlife trade. Further he serves, since 1995, as an invited member and specialist for several species *in situ* as well as advises the IUCN Cat Specialist Group Co-Chairs on many *ex situ* felid issues and as an expert for the identification of the smaller and lesser known felid species worldwide.

It is certain that many members of the EAZA Felid TAG are instrumental supporters and drivers of felid conservation and research around the globe!

Please contact the Felid TAG for more details.

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 bottlenose dolphin (*Tursiops truncatus*) and Caribbean manatee (*Trichechus manatus*) and four ESBs (for Patagonian (*Otaria flavescens*) and Californian (*Zalophus californianus*) sea lions, South American fur seals (*Arctocephalus australis*) and grey seals (*Halichoerus grypus*). In 2016, the TAG met twice during the EAZA Annual



PATAGONIAN SEA LION (*OTARIA FLAVESCENS*) © GERARD MEIJER

Conference in Belfast, UK, and at the Midyear Marine Mammal TAG meeting in MundoMar, Spain.

The Marine Mammal TAG has been working on new Best Practice Guidelines.

- The appointed group working on the compilation of the EAZA Guidelines for Pinnipeds made good progress and a draft Best Practice guidelines were finished just before the end of the year. Timeline to finish is the EAZA Annual Conference in Emmen, The Netherlands 2017.
- The Best Practice Guidelines for the walrus was reviewed by December 2016 and small changes were added and are ready to be sent to the EEP Committee for review.
- The draft of the Best Practice Guidelines for manatees is ready and will be sent to the EEP Committee.
- It is agreed to develop Best Practice Guidelines for bottlenose dolphins aiming to finalize the draft at the 2017 EAZA Annual Conference in Emmen.

The Marine Mammal TAG Regional Collection Plan is reviewed and updated and will be ready for publication in spring 2017.

A Bottlenose dolphin Long Term Management Plan workshop was held in Amsterdam in December 2016. The draft will be sent to the Species Committee and participating members in spring 2017 for review.

With support from April Adams at the EAZA Executive Office, a working group is formed to develop marine mammal taxa specific demonstrations guidelines under umbrella of the 'EAZA Guidelines on the use of animals in public demonstrations (2014)' It is envisaged that the guidelines will be ready by September 2017.

The renewed MoU between EAZA and the European Association of Aquatic Mammals (EAAM) was signed in April 2016.

The TAG strongly feels that this MoU is of importance for continuous knowledge exchange between the Association Members and for the functioning of the breeding programmes.

ELEPHANT

TAG Chair: David Field (Zoological Society of London, London, UK)

TAG Vice-Chair: Thomas Kauffels (Opel-Zoo, Kronberg, Germany)

The Asian elephant EEP continues to progress in line with 2013 Long Term Management Plan (LTMP) objectives with extensive breeding success. Tragically two calves were lost during 2016 to Elephant Endotheliotropic Herpes Virus (EEHV). All young

male bulls have recommendations for transfer to bachelor herds when appropriate. The TAG is supporting the EEP to insist all institutions holding breeding females also provide bull facilities. The African elephant EEP has fundamental problems with a lack of breeding females. Recommendations have been made for all eligible African females to urgently move into appropriate breeding situations if they are currently not e.g. no access to a bull. Sadly, this may be too late for a number of females. The situation at one EEP member in particular remains unresolved with three cycling females without access to a bull and no suitable bull facility planned. This situation has been referred to EEP Committee for advice. The EEP Committee endorses the recommendation of the TAG and the three animals must remain together and immediately move into a breeding facility. The institution has been offered animals for exhibit to replace these three potentially breeding females. The TAG is hopeful that this situation will be resolved in 2017.

Programme Coordination

Martin van Wees (Rotterdam, The Netherlands) stepped down as Asian elephant EEP Coordinator and Harry Schwammer (Vienna Zoo, Austria) has also stepped down as African elephant EEP Coordinator. Extensive thanks is given to both for their dedication, ongoing hard work and commitment to each programme. Harald Schmidt is welcomed as the new Asian elephant EEP Coordinator (Rotterdam Zoo, The Netherlands) and Arne Lawrenz as the new African elephant EEP Coordinator (Wuppertal Zoo, Germany). Credit given to all coordinators and studbook keepers of the two EEPs for their continued dedication, diligence and for facilitating smooth change overs.

A successful TAG evaluation was conducted with positive



1ST FOURTH GENERATION CAPTIVE BORN ASIAN ELEPHANT (*ELEPHAS MAXIMUS*) AT DUBLIN ZOO © DUBLIN ZOO

feedback surrounding meetings and associated preparations. Clear strategy is needed to ensure the TAG is not only dealing with problem issues. It is essential the TAG moves away from individually negotiated transfers between collections. Work continues with Best Practice Guidelines in line with the work of BIAZA and the UK Elephant Welfare Group. A sub-group has been developed and are working on updated Best Practice Guidelines presently. A biannual newsletter is being sent to all holders to improve communication and inform all holders of TAG developments. The new EAZA Member Area is in full use and many of the documents mentioned can be found on the Elephant TAG page.

Research

EEHV research fund continues successfully with significant contributions from Chester Zoo, Dublin Zoo, Le Pal, Pairi Daiza, Woburn Safari and ZSL Whipsnade Zoo. An additional 48 collections have contributed with the majority contributing 1000 euro per year over the three-year period. This has enabled significant funds to be raised to support three projects working on research of this devastating virus:

- New approach to understand natural immunity in Asian elephants against fatal Elephant Endotheliotropic Herpes Virus (EEHV) infection PhD Supervisor: Professor Thomas B. Hildebrandt, Head of Reproduction Management at the Leibniz Institute for Zoo & Wildlife Research (IZW).
- Development of a serological test and vaccine for EEHV PhD supervisor: Byron Martina PhD Erasmus University Rotterdam – Department of Virology
- Working towards a better understanding of epidemiology of Elephant Endotheliotropic Herpesviruses (EEHVs) Arbar Dastjerdi - Animal Health and Plant Agency (AHPA) Mammalian Virus Investigation Unit (MVIU).

2016 meetings

A productive Mid-Year meeting was held at Chester Zoo, UK, where a number of new protocols were introduced and later endorsed at the Belfast 2016 EAZA Annual Conference closed TAG meeting. These include:

- Updated TB Testing protocol based on latest research
- Acquisition of Ex-circus elephants into EAZA Zoos
- EEHV treatment and testing protocols
- Update TAG decision list
- Transport protocol put into action

Key discussions:

- The UK Elephant Welfare Group Chair spoke around the

work of the group over the last five years and the routine healthcare monitoring being conducted in the UK (welfare, foot health, body condition and locomotion) and the research carried out by the EWG to date.

- African elephant sourcing proposal
- Extensive presentation and discussion surrounding animals. The demonstrations and experiences from three very different collections; Pairi Daiza, ZSL Whipsnade Zoo and Antwerp/Planckendael. The application of the EAZA Guidelines on the use of animals in public demonstrations (2014) was explored. These guidelines are being implemented 2014-2017.

- Bachelor Groups; presentation from Heidelberg about their experiences and opened discussion about optimum numbers. A veterinary advisors meeting took place. Discussion held surrounding the formation of an EEHV consortium to further progress research. A use of GnRH protocol is under development to give collections guidance about use. Vet attendance at TB meeting to inform best practise for TB testing protocol.

Conservation activities

A meeting was held with Chair of IUCN Asian Elephant Specialist Group (May 2016). A meeting of the AESG was attended in Assam in November and opportunities for zoo involvement with the group discussed. Information has been shared with the group about UK health and welfare monitoring, husbandry guidelines and veterinary monitoring procedures in the TAG.

The TAG supported the suggested move of African elephants from all (sub)populations across the African continent from CITES 2 to CITES 1 status. An excellent presentation was given at the open meeting during the EAZA Annual Conference in Belfast from STOP Ivory about the closure of Domestic Ivory markets focusing on the UK and how all zoos must assist with this through public engagement and education. Maximising this opportunity is necessary to aid in reducing the poaching crisis across Africa.

EQUID

TAG Chair: Ulrike Rademacher (Wilhelma Zoo, Stuttgart, Germany)

TAG Vice-Chairs: Tanya Langenhorst (Marwell Wildlife, Winchester, UK) and Jaroslav Simek (Prague Zoo, Prague, Czech Republic)

TAG meetings 2016:

All three TAG Chairs attended the joint TAG Chairs meeting in Omaha, US. As part of this a meeting with the colleagues from the AZA Equid TAG was held. It was agreed to improve cooperation between both TAGs with particular focus on information exchange on diseases, experience with mixed species exhibits, a literature database and the effort on improving communications with the IUCN Equid Specialist Group.

The EAZA Equid TAG meeting took place during EAZA Annual Conference in Belfast, UK on 21st September 2016. The main focus during the meeting was on two veterinary issues. On behalf of Dr Alex Greenwood from the Institute for Zoo and Wildlife Research (IZW), Germany, Ulrike Rademacher gave an update on the investigation into Equine Herpes Virus (EHV) in the EAZA zoos. The main outcome of this so far is that EHV appears to be widely spread amongst the EAZA institutions and should not form a barrier to transfer recommendations issued by the EEPs. Ulrike reiterated the statement released by the Equid TAG on this. Going forward all institutions are still requested to submit samples to the IZW whenever the opportunity arises (the sampling protocol is available on the EAZA Member Area). A second presentation was on Equine Sarcoids in the three African equid EEPs. Dr Céline Uhrich-Meunier presented the results of a three EEP survey to provide feedback for all participants. Another presentation, by EEP coordinator Beatrice Steck, explained the difficulties of managing the Somali wild ass EEP due to gaps in the pedigree and showed potential solutions which will all take a long time.

Finally, the EEPs for Grevy's zebra, Onager and Przewalski's horse all presented the latest work carried out *in situ*, mostly with the support of EEP members.

TAG surveys

A survey on sarcoids in African equids was conducted in 2015 showing prevalence in Hartmann's mountain zebra and Somali wild ass. Analysis has been carried out since, confirming the prevalence in those two species as well as a multitude of treatment options and a potential link between inbreeding and occurrence of this disease. The results of this work are currently



HARTMANN'S MOUNTAIN ZEBRA (*EQUUS ZEBRA HARTMANNAE*) © ULRIKE RADEMACHER

being written up for a paper.

A survey on experiences of equids in mixed species exhibits was conducted by the TAG. All EEP coordinators are currently working on evaluating the results. These will then be incorporated into the Best Practice Guidelines.

Best Practice Guidelines:

The TAG has assigned different chapters of the guidelines to different members of the TAG to be updated. Several chapters have been completed and the TAG continues to review progress.

EEP developments in 2016:

The Somali wild ass EEP has been evaluated and the programme was rated as Good. It was recommended that the EEP works closely with the TAG on a strategy to achieve the target population size despite the difficult pedigree and also to investigate potential links to *in situ* work for the species. Evaluation of the Przewalski's horse EEP has been nearly completed and will be submitted to the EEP Committee as soon as the TAG's summary report has been produced.

Apart from the Grevy's zebra EEP all equid EEPs are in need of and would welcome new holders.

Conservation involvement:

Several equid EEPs are heavily involved with field conservation. The Grevy's zebra EEP continues its long standing involvement in several Grevy's zebra field projects in Kenya with support from EEP institutions.

The Persian onager EEP reported on the latest developments in Iran and cooperation with zoo Teheran that will benefit the

species there.

The Przewalski's horse EEP and Prague Zoo continue with their work of reintroductions of the species into western Mongolia which is supported by EEP institutions financially and in kind. The Somali wild ass EEP is cooperating with conservation in the field in Ethiopia and Eritrea.

RHINO

TAG Chair: Friederike von Houwald (Zoo Basel, Basel, Switzerland)

TAG Vice-Chair: Lars Versteeg (Safaripark Beekse Bergen, Hilvarenbeek, Netherlands)

The vision and mission of the EAZA Rhinoceros TAG is 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 *ex situ* populations are healthy, self-sustaining and genetically viable and are capable of being an effective tool in support of rhino conservation in the wild.

In 2016, the EAZA Rhinoceros TAG met at the EAZA Annual Conference in Belfast. A major aim is to continue to strengthen forces with the *in situ* partners to tackle the huge poaching problems. For the Rhino TAG meeting in Belfast, Natasha Anderson, Monitoring Coordinator of the Lowveld Rhino Trust in Zimbabwe, was our conservation guest speaker and talked about Rhino Conservation in Zimbabwe.

Dr. Marcus Clauss, the Rhino TAG Nutrition Advisor, gave a very detailed talk about rhino nutrition with an emphasis on dos and don'ts.

A further highlight was the talk of Josephine Gibson, Partnership Development Manager of Save the Rhino International (SRI), who is helping Cathy Dean, Executive director of SRI, the appointed Rhino TAG Conservation Advisor, to link zoos with rhino conservation. She showed examples of how zoos already support rhino field projects and highlighted the fantastic support of many zoos for rhino conservation.

According to the latest news from the IUCN African Rhino Specialist Group (AfRSG), the number of African rhinos killed by poachers has stagnated for the first time and gives hope that all the hard work on the ground, often supported by zoos and other NGOs, is truly making a difference.

The continued poaching has impacted on rhino population numbers. According to the IUCN AfRSG, numbers of the more numerous white rhino (*Ceratotherium simum*) appear to have

levelled off on the continent with 2015 population numbers estimated between 19,682 and 21,077. The black rhino (*Diceros bicornis*) numbers for 2015 are estimated at between 5,042 and 5,455. Despite the fact that the latter species shows a +2.9% per annum increase, poaching has however reduced growth in black rhino numbers below the usual +5% per annum target growth rate. The same applies to the white rhino population.

Many EAZA rhino holding facilities already support rhino conservation projects. This is highly appreciated and needed by the people who are working in the field and whose commitment – often at tremendous costs to themselves and their families – is 100% for rhino protection. It would make an even bigger difference if more rhino holding zoos would contribute to rhino conservation projects. More information can be found at the EAZA Rhino TAG workspace.

The status of the three EEPs within the rhinoceros TAG are as follows:

Black rhino EEP (*Diceros bicornis michaeli*):

In 2016 there were:

- 30.52 (82) and 33.49 (82) Black rhinos (*Diceros bicornis michaeli* and *minor*) held within 21 EAZA institutions. Of those mentioned, only one pair (1.1) of *Diceros bicornis minor* is kept at an EAZA Member.
- Birth: 4.2.
- Deaths: 1.3
- Transfers: 5.4
- Two new institutional holders are now participating in the EEP

The first analysis of the international studbook was performed.

Indian rhino EEP (*Rhinoceros unicornis*) (also known as greater one-horned rhino):

- 37.35 (72) Indian rhinos are kept in 27 EAZA zoos at the end of 2016.
- Births: 2.1 occurred in 2016.
- Deaths: 1.0. The bull in Amersfoort died of a still unknown reason. Amersfoort thus no longer keeps greater one-horned rhinos.
- Transfers 2.5
- 6 out of 27 zoos (known to the EEP) participate in Indian Rhino conservation projects (Amersfoort, Basel, Chester, Lisieux, Stuttgart, Whipsnade)

The Indian rhino EEP population size is increasing, but it is becoming more and more difficult to find institutional holders, who not only send appropriate plans in time, but also build the facilities in time.



YOUNG BLACK RHINO (*DICEROS BICORNIS MICHAELI*) AT CHESTER ZOO © CHESTER ZOO

It is vital for the Indian rhino EEP to find new holders that reliably build their exhibits within two to three years of contacting the EEP.

White rhino EEP (*Ceratotherium simum*)

- The white rhino EEP population started with 118.174 (292) animals in 78 zoos.
- Births: 12.10, of which 9.8 survived.
- Deaths: 2.5 adults + 3.2 calves that did not survive. Not all adults' deaths were old animals. There have been several cases of veterinary difficulties resulting in death of breeding animals.
- Transfers: 7.8
- Imports: None
- 30 zoos are reported to participate in white rhino conservation projects, but more zoos donate money to the

larger rhino conservation organisations, such as SRI and International Rhino Foundation (IRF).

The White rhino EEP had their annual meeting during the EAZA Annual Conference, with a focus on veterinary issues, conservation and building up a sustainable population.

The initiatives of the EEP, regarding the historical lack of breeding in this species, are now showing results with more and more animals breeding. With the number of births rising, the population has become sustainable. But with the increase in the number of calves, the importance of additional separation/holding facilities for animals which cannot be held in the group any longer is also increasing. Especially older males, no longer needed for breeding, can be a potential future problem. Holders are encouraged to be creative and possibly house surplus rhino(s) in other hoofstock paddocks since they are easy to mix with other species.

Because of the need for additional holders for the Black rhino and Indian rhino EEPs, potential new rhino holders will initially be guided to these two EEPs.

TAPIR AND SUIFORM

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

TAG Vice-Chair: Jochen Reiter (Aquazoo Düsseldorf, Düsseldorf, Germany)

General activities:

The Tapir and Suiform TAG met once during the report period, on 22 September 2016 in Belfast, Northern Ireland. The meeting was mostly a reporting meeting highlighting a selection of the research and conservation activities that took place.

During the reporting period, Will Walker (Wild Place Project, UK) took over the Red river hog EEP from Jochen Reiter after Jochen left Duisburg Zoo, Germany. Furthermore, Lidia Przybylska was reappointed as coordinator of the Visayan warty pig EEP after having changed institutions to Wrocław Zoo, Poland.

Conservation activities:

From 25-30 January, three two-day masterplanning workshops were held in Bogor (Indonesia) for the Global Species Management Plans (GSMPs) for Banteng, Anoa and Babirusa. At the meeting, the participants jointly determined if and which role the global *ex situ* population would play in the conservation of the taxon (in this case for babirusa) and thus what the genetic

and demographic goals of the global *ex situ* population should be, how expertise present in the *ex situ* community can help to solve particular *in situ* conservation problems and how to identify field conservation projects that address the most urgent threats to the taxa and that could make a lot of progress with relatively small scale financial support from the zoo community. The Babirusa GSMP team has been very active in implementing this action plan, among others by developing a business plan, making breeding and DNA sampling recommendations for the Indonesian *ex situ* population, visiting Indonesian zoos and *in situ* rescue centers to gather information to inform husbandry training, presenting at the Indonesia Zoo and Aquarium Association (PKBSI) meetings, selecting *in situ* projects for support, etc.

A new reintroduction project is starting in Indonesia for the Javan warty pig (*Sus verrucosus*). The project is based at Baluran National Park in Java and is financially-supported by the Fondation Segré that has funded several EAZA initiatives throughout the years. The project is managed by Copenhagen Zoo, Denmark, in cooperation with the Cikananga Wildlife Center, Indonesia.

A multi-stakeholder Chacoan peccary (*Catagonus wagneri*) conservation planning workshop was conducted in Paraguay from 29 February to 3 March. The workshop was planned and facilitated by the IUCN SSC Peccary Specialist Group, IUCN SSC Conservation Breeding Specialist Group (CBSG), Guyra Paraguay and Proyecto Tagua and included population viability



YOUNG HIPPOPOTAMUS (*HIPPOPOTAMUS AMPHIBIOUS*) AT COPENHAGEN ZOO © COPENHAGEN ZOO

and habitat suitability modelling. Over several days, participants defined a vision for the species, reviewed the species status and threats and determined goals and actions to address the main threats including habitat loss, hunting, and lack of knowledge. The IUCN SSC Guidelines on the Use of *Ex situ* Management for Species Conservation were applied during the planning process, and several roles and goals for *ex situ* management in Paraguay and by the AZA Species Survival Plan (SSP) and EEP were identified.

Research activities:

A red river hog (*Potamochoerus porcus*) body condition scoring system survey was started through Knowsley Safari Park, UK. The system is meant as a reference for evaluating the body conditions of red river hogs in *ex situ* facilities, but more data are required for reliable results. All holders were therefore requested to provide data when asked. The Common hippo ESB and Pygmy hippo EEP are jointly working on sex ratio bias in the *ex situ* populations of hippos. The female-skewed birth sex ratio among pygmy hippos (*Choeropsis liberiensis*) has been known for a long time, and different hypotheses for explaining this were presented. Furthermore a less pronounced, but male-biased sex ratio for the common hippo (*Hippopotamus amphibius*) was introduced, and possible explanations for the different skew between the species were discussed. This important and interesting topic will continue to be explored.

Ex situ Programme activities:

Each programme coordinator summarized the status and challenges for their respective programmes. For any further comments please see their individual programme annual reports. A chapter entitled “*Ex situ* conservation of wild pigs and peccaries: roles, status, management successes and challenges” was prepared for the book “Ecology, Evolution and Behaviour of Wild Pigs and Peccaries” expected to be published in 2017.

Evaluation of programmes:

During the report period, the following programmes have been evaluated:

Pygmy hippo EEP: Evaluation questionnaires were completed by the relevant parties and were returned to the TAG Chair. SPARKS datasets were forwarded for the qualitative evaluation of the programme, and a full evaluation will be developed early 2017.

Malayan tapir EEP: The evaluation was finalised before the



CHACOAN PECCARY (*CATAGONUS WAGNERI*) AT TIERPARK BERLIN © CHRISTIAN KERN

end of 2016. The EEP Committee subgroup decided to re-evaluate the programme in 2018 again giving the programme some time to work on some key issues (e.g. involvement Species Committee, improvement communication, production studbook, urgently address items QPA).

DEER

TAG Chair: Noam Werner (The Tisch Family Zoological Gardens, Jerusalem, Israel)

TAG Vice-Chair: Christian Kern (Tierpark Berlin, Berlin, Germany)

Introduction

The Deer TAG is responsible for three taxonomically distinct groups: the chevrotains (mouse-deer; *Tragulidae*), musk deer (*Moschidae*) and true deer (*Cervidae*). Despite having the word “deer” in their common names, these groups are not related to each other any more than to other even-toed ungulate (*Artiodactyla*) groups. Following the taxonomy used by the IUCN/Species Survival Commission Deer Specialist Group for the last Red List assessment, a total of 73 species fall under the remit of the Deer TAG (10 *Tragulidae*; 7 *Moschidae*; 56 *Cervidae*). However ungulate taxonomy is still not fully resolved or unanimously accepted (e.g., Groves, C.P. and Grubb, P., 2011) and this number may change in the future.

Meetings

During 2016, the third Deer TAG Mid-Year Meeting took place at Zoological Society of London (ZSL) Whipsnade with

13 participants, representing 11 institutions and five countries, attending the two-day meeting. The main outcome of the Mid-Year Meeting was the opportunity to meet in person and discuss numerous issues. One major issue that the TAG wanted to highlight during the meeting was the collaboration with the private/non-EAZA sector and as part of the effort to strengthen this collaboration, a visit to the Woburn Abbey Deer Park was organized in the day preceding the meeting. During the visit, the participants had the opportunity to learn more about the work protocol in the Park and about possible avenues for collaboration. Three representatives from the private/non-EAZA sector also attended the meeting and contributed significantly to the discussions.

At the EAZA Annual Conference, the TAG held its annual general meeting where some of the work of TAG members and the results of the mid-year meeting were presented. During the meeting, a feedback session was held, using the MeetingSift platform, in order to evaluate the TAG’s meeting structure, effectiveness and general work. Mostly the feedback was good to very good, but one weak point was the TAG’s involvement in relevant education, a point that the TAG is now working to improve.

In early 2016, both Noam Werner (TAG Chair) and Christian Kern (TAG Vice-Chair) attended the joint TAG Chairs meeting and the AZA Hoofstock TAGs Mid-Year Meeting in Nebraska, US.. During the meetings, we met our North American counterparts and strengthened the ties between the respective TAGs.

Breeding programmes

One personnel change took place during 2016 with Jan Menger taking over Pavel Krásenský, both from Zoo Chomutov (Czech Republic), as the Bactrian wapiti ESB Keeper. The transfer was smooth and a studbook report and transfer recommendations have already been published in early 2017.

Three husbandry guidelines/EAZA Best Practice Guidelines documents are in preparation – the first draft of the Eld’s deer Best Practice Guidelines has recently been circulated and should be published in the coming months (Matt Hartley, Burmese Brow-Antlered Deer EEP Coordinator), while tufted deer (Janno Weerman, Rotterdam Zoo, The Netherlands - Michie’s Tufted Deer ESB Keeper), and Eurasian elk (Barbora Dobiášová, Zoo Praha, Czech Republic), are still being prepared.

During 2016, the IUCN/SSC Deer Specialist Group completed the Red List status re-assessment of many species and following this, the RCP should be revised in the coming



ELD'S DEER (*PANOLIA ELDII*) AT PRAGUE ZOO © PRAGUE ZOO

year.

Population management challenges and potential solutions

Despite publication of the new European Union (EU) regulations regarding import of hoofstock from developing countries (Regulation (EU) No 780/2013), in reality the import of hoofstock from third countries into the EU has not become easier, and international transfers of these species is not a realistic option for increasing genetic diversity of programmes (i.e., bringing in new founders). Therefore, the Deer TAG has been exploring the alternative of importing semen from potential founders and performing artificial insemination with female deer in EAZA. A process that has been conducted (and funded) by Zoo Ostrava, Czech Republic, of importing Siberian

wapiti semen from Kazan Zoo, Russia, has been completed after the insemination of several females in Ostrava Zoo. The success of the insemination will be known later in the year.

Another EU regulation, the EU Invasive Species Act (Regulation (EU) No 1143/2014), went into force this past year and created major problems for the TAG. One species, Reeve's muntjac (*Muntiacus reevesi*), was included in the List of Invasive Alien Species of Union Concern, which means that its *ex situ* population should be phased out. This comes at a time when the species has been categorized as Vulnerable by the conservation authorities in its native China. Other species have been already, or might be in the future, included in respective lists of Member States, which will force local zoos in these countries to phase out these species. This already happened when Poland included the sika deer (*Cervus nippon*) in its own List of Invasive Alien Species, which means that zoos will need to phase out all subspecies of this species including the Indochinese sika deer (*C. n. pseudaxis*), which is extinct in the wild and an EEP species. Thus far, the TAG has written a statement regarding the keeping of Reeve's muntjac in an attempt to support zoos that apply for exemption from the above-mentioned Regulation (as is permitted by the Regulation), but it seems that national authorities are reluctant to provide these exemptions for now and delay their decisions. Further actions might include the start of a conservation programme for Reeve's muntjac and a more general statement regarding the keeping of potentially invasive deer species by EAZA zoos.

Cooperation, contacts, *in situ* projects, research

Cooperation with the IUCN/SSC Deer Specialist Group (DSG) is on-going. Two TAG members, Noam Werner (TAG Chair) and Jan Pluháček (Vietnamese sika deer EEP Coordinator and Siberian wapiti MON-P) have been members of the DSG. Two more TAG members, Christian Kern (TAG Vice-Chair) and Matt Hartley (Burmese brow-antlered EEP Coordinator), have joined the DSG in early 2016.

The genetic study of the sika deer complex, mainly the Indochinese and Formosan subspecies, has been going on at Jan Robovsky's laboratory (University of South-Bohemia and Zoo Liberec, both in Czech Republic), who has been collaborating with the TAG in several genetic studies. Some preliminary results have already been obtained, but these need to be verified and finalised before publication.

The Indochinese hog deer *in situ* conservation project, in collaboration with Sarah Brook (Wildlife Conservation Society (WCS) and IUCN/SSC DSG), has also been progressing and another partner, Erin Hill from La-Trobe University in

Australia, has joined Jan Robovsky in an attempt to clarify the taxonomic position of the Indochinese hog deer.

Several TAG members, through the programmes they run or through their institutions, are involved in long term *in situ* deer conservation projects in range countries, such as the Philippines, Cambodia, China, Finland, Russia and Israel.

CAMELID AND CATTLE

TAG Chair: Terry Hornsey (Africa Alive!, Kessingland, UK)

TAG Vice-Chair: James Burton (Chester Zoo, Chester, UK)

Anoa EEP:

Promotion of anoa should be a priority, highlighting its new Global Species Management Plan (GSMP) status. The Action Indonesia partnership for a GSMP for anoa have greatly increased the level of activities on this taxa. This is a One Plan approach programme between EAZA, the American Association of Zoos and Aquariums (AZA), IUCN Species Survival Commission (SSC), IUCN SSC Asian Wild Cattle Specialist Group (AWCSG), IUCN SSC Wild Pig Specialist Group and the Indonesian Zoo Association. This is the first time that the GSMP method is being implemented with ungulate species: anoa (*Bubalus depressicornis*; *B. quarlesi*), and banteng (*Bos javanicus*). These were approved by WAZA early in the year following a workshop to plan global management of the populations and prioritise *in situ* activities where zoos can contribute. This has included increased cooperation with the AZA Anoa Species Survival Plan (SSP) and the Indonesian studbook keeper. It is expected that in the coming years this partnership will result in transfers of these taxa between regions to benefit breeding.

Banteng EEP

As described above, the Action Indonesia partnership has helped to move forward activities relating to banteng. WAZA approved the application to develop a GSMP for Banteng. Stronger cooperation has begun with the American Association of Zoos and Aquariums (AZA) Banteng Species Survival Plan (SSP) and the Indonesian studbook keeper.

The Banteng EEP has a new coordinator: Tim Rowlands of Chester Zoo, who has taken this on and the final handover is underway. We appreciate the huge effort and hard work contributed by Dorothee Ordonneau, Centre d'Etudes et de Recherche Zoologiques Augeron, France, over the past few

years and whilst she has stood down from the coordinator position, she has agreed to be both the TAG and GSMP Veterinary Adviser. Evaluation of the EEP was started and is ongoing.

Gaur EEP

Evaluation of the EEP was started and is ongoing.

European bison EEP

For this species, a Long Term Management Plan (LTMP) is becoming urgent, so that it is possible to get all stakeholders together to identify the issues and broad plans for the next five years. A meeting is needed to agree on the ground rules for reintroduction, rather than purely population management. The EEP Evaluation was postponed because of the LTMP scheduled for late 2017, and therefore, the need to carry out the evaluation was deemed to be less urgent.

African buffalo ESB

Merel Zimmermann (EAZA Executive Office, The Netherlands) has taken over the running of the studbook from Danny de Man (EAZA Executive Office, The Netherlands). We appreciate the huge effort and hard work that Danny has put into the studbook over the years; he hands them over to Merel in far better shape than when he took them on several years ago. Danny will remain a member of the TAG for the coming years. EAZA Best Practice Guidelines will be drafted and finalised by the next EAZA Annual Conference in 2017.

Vicuna EEP:

The export of 6.6.0 animals to the US had to be cancelled as the US Ministry of Agriculture, Fisheries and Food would not issue Import Certificates for them.

Research

Banteng genetic research is being expanded as part of the GSMPs, so this will take at least another year to complete. The research is looking at the origins of the *ex situ* population as well as population structure of the wild population. Anoa genetic research is also being expanded as part of the GSMPs. The focus will now be on determining the taxonomy and defining the origins of the Indonesian *ex situ* population.

Conservation

Action Indonesia: Global Species Management Plans for Banteng and Anoa:

The TAG has played a key role by leading the strategic

planning and coordinating between the three zoo regions of the GSMP committees. Three workshops were held to agree on actions for the GSMPs for anoa and banteng in Indonesia. Three Committees were agreed, representing all participating zoo regions, field, and government representatives. The GSMP applications were submitted to and approved by WAZA working with the Conveners. Action Lists with priority work for the Committees, agreed at the workshops, are being implemented and reviewed every two months during a Committee conference call. The GSMP Committees are now working effectively, with support from the AWCSG in planning, meeting, co-ordination and reporting. This has developed very successfully with 32 institutions becoming partners of the GSMPs, many of which are zoos.

A visit was arranged for staff from EAZA and AZA institutions, including TAG members, to seven Indonesian zoos, to help with fact-finding for how these regions can contribute to enhancing breeding and husbandry in Indonesian zoos. This included Tim Rowlands (Curator of Mammals, Chester Zoo, United Kingdom - Banteng EEP Coordinator), Thomas Kauffels (Director, Opel-Zoo, Germany - EAZA Chairman) and Steve

Metzler (Curator of Mammals, San Diego Zoo Global, US), James Burton (TAG Vice-Chair) and Johanna Rode Margono (Chester Zoo, United Kingdom).

The GSMPs have also allowed for one year of funding to be allocated to one project focusing on local community education to help protect Anoa in east Sulawesi by the NGO The Alliance for Tompotika Conservation / Aliansi Konservasi Tompotika (AITo). Support has also been provided to define the population trend of Banteng in Ujung Kulon National Park, Java using camera trap data. These are linked to the anoa and banteng Indonesian Strategy and Conservation Action Plans (2012 and 2014, respectively).

Saola Conservation Captive Breeding Centre:

Conservation Breeding Site Assessment survey carried out in Vietnam in March 2016.

Wild Water Buffalo Conservation Funding:

James Burton has begun building potential funder interest in activities on wild water buffalo by the Wildlife Trust of India. This will be developed further with Givskud Zoo in 2017.



YOUNG BANTENG (*BOS JAVANICUS*) AT CHESTER ZOO © CHESTER ZOO

Tamaraw Field Conservation

In October, James Burton made a site visit to the Philippines, to identify ways that the TAG can advise and contribute to the conservation of the Critically Endangered tamaraw. The visit included meetings with organisations involved with tamaraw conservation and a trip to Iglit-Baco National Park. Potential supporters from EAZA will be approached in the coming year.

European Bison Conservation

The European bison (*Bison bonasus*) 'Re-Wilding' programme has had its challenges. There are multiple re-introduction projects that will be impacted on by next steps/decisions in the coming year. It is likely that there will be a Vice-Chair to the IUCN SSC Specialist Group.

James Burton has been invited to act as Chair of AWCSG for the next IUCN quadrennium, 2017-2020, and this will continue to ensure close working relations between EAZA and IUCN SSC AWCSG.

TAG-produced documents

The first set of Breeding and Transfer Recommendations for the Indonesian zoo populations of Anoa and Banteng have been produced. These have been approved by the Indonesian Zoo Association and the Government, and are being distributed to the relevant zoos. This is a major achievement as this is the first time that association-wide recommendations have been produced in Indonesia. Members of the TAG helped in producing these recommendations and coordination in Indonesia.

The Anoa GSMP implementation document has been drafted with significant input from TAG members, and is currently being finalized and will be submitted to WAZA and published in 2017. This is the plan for implementing this One Plan approach programme, and includes recommendations for breeding as well as priorities for capacity development and support of *in situ* activities.

The first GSMP Newsletter to raise awareness among interested parties has been distributed with lots of input from the TAG as well as update emails in the first half of 2016.

A GSMP Business Plan for 2017 has nearly been completed and will be used for fundraising in 2017.

A Saola Conservation Breeding Centre Site Assessment survey report was produced, based on site visits in Vietnam and from this, a site for the centre has been chosen.

A Saola Captive Breeding MoU final draft was completed and submitted to the Vietnamese government for review and

agreement. A Saola Captive Breeding Project Document is in the process of being drafted to accompany the MoU.

Meetings Held

The TAG Chair and Vice-Chair participated in the joint TAG Chairs meeting and the AZA Ungulate TAG meeting in Omaha, US in March 2016.

The TAG held both an 'open' and a 'closed' meetings in September during the EAZA Annual Conference in Belfast.

An Action Indonesia planning meeting was held in September during the EAZA Annual Conference in Belfast.

An Intensive Management of Saola Advisory Group meeting was held during the EAZA Annual Conference in Belfast.

Four Anoa and four Banteng GSMP committee Skype meetings were held bi-monthly throughout 2016.

Presentations were given on behalf of the TAG to promote the Action Indonesian partnership at six events:

- Presentation to joint TAG Chairs meeting, Omaha, US, March 2016: Developing new GSMPs for three ungulate species - a model for inter-regional cooperation.
- AZA Mid-year Ungulate TAGs Meeting, Omaha, US, March 2016: Introduction to Global Species Management Plans for Anoa, Banteng and Babirusa.
- Presentation to Indonesian Zoo Association Director's day, Jakarta, 26 July 2016: Introduction to Global Species Management Plans for Anoa, Banteng and Babirusa.
- Plenary presentation at EAZA Annual Conference 2016 - Working in Southeast Asia: Action Indonesia – developing Global Species Management Plans for Anoa, Banteng and Babirusa.
- Presentation to TAG Chairs and EEP Coordinators meeting at the EAZA Annual Conference, September 2016 - The GSMPs as an example of EAZA's future population management structure.
- Keynote presentation at the Indonesian Zoo Association Annual Meeting, Bali, October 2016: Global Species Management Plans (GSMPs) for Banteng, Anoa and Babirusa.

ANTELOPE AND GIRAFFE

TAG Chair: Jens-Ove Heckel (Landau Zoo, Landau, Germany)

TAG Vice-Chairs: Sander Hofman (Royal Zoological Society of Antwerp, Antwerp, Belgium)

Kim Skalborg Simonsen (Givskud Zoo, Givskud, Denmark)

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-sustaining, *ex situ* 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 fundraising 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 as one of the largest and most complex (mammal) TAGs representing the approximately 50 species (and about 90 taxa) held in European zoos. Currently the TAG holds 11 EEPs and 11 ESBs; three species are part of ISBs; the remaining species within the EAZA Region are monitored by TAG members or through the subgroup leaders.

This year was again a very busy one for our TAG. In March it was a pleasure to participate in the joint TAG Chairs meeting and the AZA Ungulate TAGs meeting in Omaha, Nebraska, US. We consider it an excellent opportunity to exchange information through presentations and conversations, exchange experiences and to strengthen bonds with our zoo and conservationist colleagues from the States and other regions of the world.

The TAG's mid-year working meeting took place in April at Dvůr Králové Zoo, Czech Republic. One of the decisions taken during this meeting was to apply for a name change for the TAG to Antelope and Giraffid TAG (instead of Giraffe). Thanks to the later agreement of the EEP Committee this name change has now officially happened.

The TAG Chair and the TAG Conservation Coordinator both participated in the 16th Annual Sahelo-Saharan Interest Group Meeting (SSIG/SCF) in Barcelona, Spain in May. One of the results of this meeting was the formation of the so-called "Club leptocere" comprising dedicated individuals focussing conservation efforts on the deteriorating conservation efforts towards the deteriorating situation of slender-horned gazelle (*Gazella leptoceros*) populations in their original natural range

in Northern Africa.

Finally, many TAG members and guests met in Belfast, Northern Ireland, UK in September during the EAZA Annual Conference. We see the application of the future EAZA Population Management Structure, the concept of which was presented during this conference, among the important future challenges within our TAG.

We are happy that several of our TAG members assumed additional or new functions. The coordinator of the Aridlands antelope subgroup, Ian Goodwin (Marwell Wildlife, UK), handed over this position to our very experienced member Tania Gilbert (Marwell Wildlife, UK). Good news is that the important Arabian oryx EEP is now under the new management of Michel Saint Jalme (Paris Zoo, France,). Jiří Hrubý (Dvůr Králové Zoo, Czech Republic,) agreed to be monitoring person (Mon-P) for mountain reedbuck (*Redunca fulvorufula*) and black wildebeest (*Connochaetes gnou*). Anna Mękarska (Wrocław Zoo, Poland) wants to monitor the waterbuck (*Kobus ellipsiprymnus*) populations within EAZA. Laurie Bingaman Lackey volunteered to monitor currently unassigned programmes. Helen Senn (RSZZ, UK) is looking for a possibility to do a Persian goitered gazelle ESB and clarify on



SLENDER HORNED GAZELLE (*GAZELLA LEPTOCEROS*) AT ZOO LANDAU © ZOO LANDAU

populations of Arabian goitered gazelle/Sand gazelle (*Gazella subgutturosa marica*) in the Middle East. However, it is a pity that we finally lost the ISB for black-faced impala, which was run by Arlete Sogorb (Lisbon Zoo, Portugal). The programme was dissolved by WAZA due to the fact that the overall population of this subspecies within the programme was too small to be continued in a sound manner under a coordinated management.

Of importance we consider the evaluation of the general performance of our TAG which was completed this year. In general, the functioning of the Antelope and Giraffid TAG is considered good to sufficient. The EEP Committee thanked our TAG for the good work and the obvious dedication to the many species under our remit. The evaluation shows that the structure of subgroups has benefited the division of the workload within the TAG and especially the preparation of meetings. The EEP Committee is aware that a new RCP is under development and is looking forward to the publication of the new edition. Among the points for our TAG to be taken into consideration are the intensification of efforts on publishing and updating guidelines for recommended species according to Best Practice Guideline template and procedure.

Both Tania Gilbert as the coordinator for conservation and Eulalia Moreno Mañas (Estación Experimental de Zonas Áridas, Spain) as the coordinator for research continue in their roles. We are also very lucky to have Laurie Bingaman Lackey (US) on our team as an external advisor for population management matters and challenges.

The TAG recognises the importance and the need to incorporate education into the TAG's activities. Ideally we would like to follow the established formats for conservation and research and appoint an education coordinator to liaise with the education committee. Regarding Best Practice Guidelines, we now have an advanced draft for Red forest duikers (*Cephalophus natalensis*) prepared by Tobias Rahde (Berlin Zoo, Germany). In the future, combining different species into one Best Practice Guideline could be a solution to get more species covered, but the TAG needs to explore the different options.

A number of antelope and giraffid conservation projects have been, and still are, managed or supported by EAZA institutions. Some of these projects are registered in the EAZA Conservation Database but this under-reporting means that we are under-estimating the contribution that EAZA Members make to antelope and giraffid conservation, as we are aware that there are additional meaningful contributions by EAZA Member zoos.

CAPRINAE

TAG Chair: Douglas Richardson (RZSS Highland Wildlife Park, Kingussie, UK)

Vice-Chair: Jean-Luc Berthier (National Museum of Natural History, Paris, France)(Retired), Paris

The membership of the TAG has dropped from 19 to 18 members, temporarily, as we need to find a new genetics advisor. We will also be looking for a new Vice-Chair as Jean-Luc feels that he should step down from this position. I am sure I speak on behalf of all the TAG members in thanking him for making such a strong contribution to the TAG and for many years keeping it going, practically single-handedly.

The TAG currently oversees the following programmes: two EEPs (Muskox EEP and Turkmenian markhor EEP), seven ESBs (Goral ESB, Takin ESB, Blue sheep ESB, Saharan Barbary sheep ESB, East Caucasian tur ESB, West Caucasian tur ESB and Nubian ibex ESB) and we monitor two additional taxa and a species group (argali, Arabian tahr and the various urial taxa). The Goral ESB is not a new programme, but it has been without a full-time studbook keeper for some years and we are pleased that Marc Enderby of the Highland Wildlife Park, UK, is now actively managing the population.

The only formal TAG meeting during the year took place at the EAZA Annual Conference in Belfast, UK in September. It was very well attended and presentations were given on the important markhor and muskox imports into Helsinki, field work on muskox in Greenland and some preliminary results on a long awaited review of their subspecific taxonomy, and the Goral ESB. Updates were also given on our growing links with the IUCN/Species Survival Commission (SSC) Caprinae Specialist Group and the re-establishment of the Specialist Group's newsletter, thanks in a large part to Jeff Holland, now of the Conservation Center for Tropical Ungulates (CCTU), Florida, US. The meeting also heard reports on the AZA Caprinae TAG and the caprid collection of CCTU.

For some years, thanks in a large part to the routine attendance of Jeff Holland, formerly curator of mammals at Los Angeles Zoo, California, US, at the EAZA Annual Conference, our two TAGs have been communicating regularly and endeavouring to coordinate our activities. The long sought after links with our IUCN counterparts was pursued in tandem, with informed assistance from Kira Mileham of the Species Survival Commission, and 2016 finally saw a tangible result. There was a recent change in the Chair of the group and it is hoped that we will be able to meet and discuss how our TAG can best support the Specialist Group. Our two TAGs have also been trying

to produce a joint collection plan that takes into account the needs of our two regions and would also form part of a revised IUCN action plan for the Caprinae tribe, although we need to see how the IUCN's approach to action plans will evolve. Since Jeff moved to CCTU, a non-AZA member, he will have to step down from the TAG Chair position, but we will welcome his replacement and given the extensive Caprinae collection that CCTU holds at one of their facilities, Jeff will continue to be a valued member of our TAG.

In November 2016, a very successful Long Term Management

Plan meeting for the Muskox EEP was hosted by Copenhagen Zoo, Denmark. Over the day and half meeting, all the desired topics were covered in-depth and the success of the meeting was primarily due to the informed guidance and input of Elmar Fienieg and Kristin Leus of the EAZA Executive Office and the wonderful hospitality of Copenhagen Zoo.

Lastly, the ongoing issue of the import and export of artiodactyls between zoo regions continues to be addressed, albeit slowly, but it is a coordinated activity involving all the relevant TAGs.



MARKHOR (*CAPRA FALCONERI*) AND SNOW LEOPARD (*PANTHERA UNCIA*) FOLLOWING MARKHOR SCENT AT RZSS HIGHLAND WILDLIFE PARK © DOUGLAS RICHARDSON

Long Term Management Plans, enabled in part by funding from an EU Life+ NGO operating grant, took place for seven EEP species in 2016

CLOCKWISE FROM TOP RIGHT: EURASIAN LYNX (*LYNX LYNX*), DALMATIAN PELICAN (*PELECANUS CRISPUS*), WOLVERINE (*GULO GULO*), MUSK OX (*OVIPOS MOSCHATUS*), BOTTLENOSE DOLPHIN (*TERSIOPS TRUNCATUS*), AND PERSIAN LEOPARD (*P. PARDUS CISCAUCASICA*).





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