



THE EUROPEAN ASSOCIATION OF ZOOS AND AQUARIA

TAG Reports 2017



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INTRODUCTION

EAZA Taxon Advisory Groups (TAGs) range from Hornbills to Tapirs and Suiforms, and from Amphibians to Large New World Monkeys and many more. TAGs are responsible for a process called regional collection planning. Up until 2017 the European Association of Zoos and Aquaria (EAZA) tasked TAGs to consider whether species under their umbrella are recommended for management in EAZA Member collections, and if so what level of management, defined as Monitor Programmes, European Studbooks (ESB) or European Endangered Species Programmes (EEP) would be appropriate. At the end of 2017 EAZA had 39 TAGs, 207 EEPs and 184 ESBs.

At the EAZA Council and Annual General meetings in Chester, UK, April 2017, the new EAZA Population Management structure was approved, as was the budget needed to establish the EAZA Population Management Centre (PMC), required for its implementation. As part of the new structure, the regional collection planning process will change. TAGs will be asked to design EAZA Ex Situ Programmes (new EEPs) to meet conservation and/or other goals following a holistic review of the role species can play within EAZA collections. Also, with support from the PMC, each *new EEP* will develop its own Long-Term Management Plan (LTMP), which outlines the strategy towards achieving the set goals. In the new structure, each programme will thus have tailor-made role and goals as well as a strategy towards achieving these in place. The structure will be implemented over a five-year period, starting in 2018, and future TAG reports will report on progress. TAGs have been very much involved with creating this new structure and are to be congratulated on this great achievement.

In addition to regional collection planning, each TAG 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. Members of the TAG include EEP coordinators, ESBs keepers and Monitor Programme leaders, and the TAG encourages involvement of representatives from across the EAZA community for these functions. 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 programme managers and non-EAZA institutions to participate in EEPs.

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

In 2017 the EAZA TAGs 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 as mentioned above.

An EU LIFE grant allowed the EAZA Executive Office to work together with the TAGs and programme leaders to carry out additional Quick Population Assessments and LTMPs. In 2017, LTMP meetings supported by LIFE took place for: European otter, Barbary macaque, black vulture, bearded vulture and African griffon vulture, European brown bear, European bison, European mink and Northern bald ibis.

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 to all the Chairs, members and programme coordinators for their hard work in 2017.

Cover image: One of the many EEPs that were evaluated in 2017 was that for the the Yellow-breasted capuchin monkey (*Sapajus xanthosternos*)
© Jan Vermeer

GLOSSARY

- AZA: Association of Zoos and Aquariums
- BPG: Best Practice Guidelines
- EEO: EAZA Executive Office
- EEP: European Endangered Species Programme
- ESB: European Studbook
- GSMP: Global Species Management Plan
- IUCN: International Union for the Conservation of Nature
- LTMP: Long-Term Management Plan
- MON-P: Monitored-by-designated-person programme
- RCP: Regional Collection Plan
- RZSS: Royal Zoological Society of Scotland
- SG: Specialist Group
- SSC: Species Survival Commission
- SSP: Species Survival Plan
- TAG: Taxon Advisory Group
- ZSL: Zoological Society of London

TERRESTRIAL INVERTEBRATE

TAG Chair: Mark Bushell (Bristol Zoo, Bristol, United Kingdom)

TAG Vice Chairs: Tamás Papp (Chester Zoo, Chester, United Kingdom) and Vítek Lukáš (Prague Zoo, Prague, Czech Republic)

INTRODUCTION

The EAZA Terrestrial Invertebrate TAG (TITAG) is responsible for one of the largest groups of animals on the planet, potentially encompassing well over a million species. To avoid being totally overwhelmed with this, we only concern ourselves with species currently held within EAZA collections, and any species that are recommended for conservation action by the International Union for Conservation of Nature (IUCN) Species Survival Commission (SSC) Specialist Groups (SG) and/or the IUCN Conservation Planning SG.

At present, most of the work the TAG has been engaging in is housekeeping, with EAZA European Endangered Species Programme (EEP) evaluations and Regional Collection Plan (RCP) development taking priority, followed by using the latter as a form of recruitment for new TAG members. Although we are “in charge” of the largest group of animals, we have one of the smallest TAGs at a mere six members and really need as many collections and keen members of staff to help us in our goal to improve and encourage Terrestrial Invertebrate work in all fields within the EAZA community.

In July, we held a joint meeting with the British and Irish Association of Zoos and Aquariums (BIAZA) Terrestrial Invertebrate Working Group at Longleat Safari (UK). Over three days there was a wide range of presentations from conservation projects, new exhibits and advances in veterinary work with Invertebrates. It had an excellent turnout of over 40 delegates and was well received.

We also had a meeting this year during the EAZA Annual Conference that was well attended, with approximately 30 colleagues. This meeting highlighted recent breeding programme developments, the updated EAZA EEP structure and an overview of a new invertebrate exhibit at Royal Zoological Society of Scotland (RZSS) Edinburgh (Scotland) by Sarah Wright, reintroduction of Partula snails (*Partula spp.*) to Tahiti by Maartje de Vries (Artis Royal Zoo, The Netherlands), an update from IUCN Strategic Partnerships Coordinator, Kira Mileham, and the conservation of Bermudan snails by Gerardo Garcia

(Chester Zoo, UK).

We are actively seeking a candidate for our Education Officer position as we realise that we are lacking in this area at present.

BREEDING PROGRAMME DEVELOPMENTS

As of the end of 2017 the TITAG is responsible for five breeding programmes; a remarkably small number considering the number of Terrestrial Invertebrate species held in EAZA collections.

The Partula snail EEP and the Frégate island beetle EEP (*Polposipus herculeanus*) were evaluated this year, with good feedback from the results of both. A change of coordinator for the Frégate beetle EEP was implemented, with Mark Bushell taking over from Amanda Ferguson (Zoological Society of London, UK) after several successful years of managing the programme.

The Desertas wolf spider EEP (*Hogna ingens*) has started its progression to a more comprehensive programme, with populations of juvenile spiders now present at a further seven zoological institutions. Production of EAZA Best Practice Guidelines (BPG) is now in the draft stage and, in line with the conservation strategy published this year, discussions for *in situ* involvement are now underway.

Although started at the same time, the Lord Howe Island stick-insect EEP (*Dryococelus australis*) is in a much earlier stage, with the European population still held at a single institution. This species has proven extremely difficult to maintain in human care so it may be a few years before other collections are able to take populations on – however, we are optimistic!

The development of the RCP stalled slightly, with the realisation that the “old style” RCP was becoming redundant and hardly used. Therefore, the decision was made to start from the beginning with a new RCP template, following the revamp of the EAZA EEPs. Workshops are planned to occur in 2018, where we will break the taxonomic groups down into manageable sizes and have input from as wide a group of EAZA colleagues as possible.

ACHIEVEMENTS DURING THE YEAR

2017 was the third consecutive year of reintroductions of *Partula* from the EEP and the Association of Zoos and Aquariums (AZA) Species Survival Plan (SSP) breeding programme, taking the total number of reintroduced taxa to 11 and the total number of Snails to 7,060. Island releases were on Tahiti and Moorea and monitoring results to date confirm general robustness of the long-

Desertas wolf spider (*Hogna ingens*) in the Vale Castanhiera, Madeira © Emanuele Biggi



term captive-bred Partula snails to re-adapt to *in situ* conditions. The Rosy wolfsnail (*Euglandina rosea*) appears to have largely disappeared and is no longer regarded as a significant threat but, the main challenge is now the high populations of New Guinea flatworms (*Platydemus manokwari*) on Raiatea and Hauhine. It's likely that the initial populations of reintroduced *P. hebe* and *P. dentifera* on Raiatea in 2016 were lost to flatworm predation but field research by Programme Advisor Justin Gerlach (IUCN Terrestrial and Freshwater Invertebrate Red List Authority Coordinator) has provided valuable insights for refining reintroduction plans for these islands.

Work has also continued on the development of the Crau plain grasshopper (*Prionotropis rhodanica*) conservation programme, with Thoiry Zoo (France) making progress on refining the rearing of the species. Originally thought to be an annually reproducing species, it now appears that the eggs can take upwards of two years to hatch, which has implications for future fieldwork and captive management.

PUBLICATIONS

An entire issue of Zooquaria (#98) was devoted to Invertebrates held in EAZA collections; there were varied articles from across the community highlighting new exhibits, conservation programmes and viewpoints on veterinary care and welfare.

COLLABORATIONS

The TITAG continued to strengthen its links to the IUCN community, with members in the Spider and Scorpion SG, Grasshopper SG and the Mid-Atlantic Island Invertebrates SG. The Chair has also attended meetings with the IUCN Invertebrate Conservation Subcommittee and the IUCN Conservation Planning SG, giving a presentation on invertebrate conservation work carried out by EAZA collections and their involvement in global species conservation with various species.

CONSERVATION AND RESEARCH

As part of the Desertas Wolf Spider EEP, a conservation strategy was formalised and electronically published at the



Dispersing *Partula affinis* from release pot with field biologist Trevor Coote in the background. Faarapa Valley, Tahiti © Paul Pearce-Kelly

end of 2017, with a print edition being planned for early 2018. The document is available on the TITAG webpage. This encompassed all aspects of the conservation of the species, with the majority of the input on the establishment of an *ex situ* population and research in zoos plus the future instigation of a population supplementation action. The importance of zoological collections in species conservation was highlighted and this will hopefully not only reinforce the idea that EAZA Members are key in species projects of this type, but also help with the implementation of future projects.

FISH AND AQUATIC INVERTEBRATE

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

TAG Vice Chairs: for Elasmobranch subgroup, Max Janse (Royal Burgers' Zoo, Arnhem, The Netherlands); for Freshwater Teleost subgroup, Anton Weissenbacher (Vienna Zoo, Vienna, Austria); for Marine Teleost subgroup, Daniel Abed-Navandi (Haus des Meeres, Vienna, Austria); for Jellyfish subgroup, Hugo Batista (Oceanário de Lisboa, Lisbon, Portugal); for Coral subgroup, Guido Westhoff (Tierpark Hagenbeck, Hamburg, Germany)

INTRODUCTION

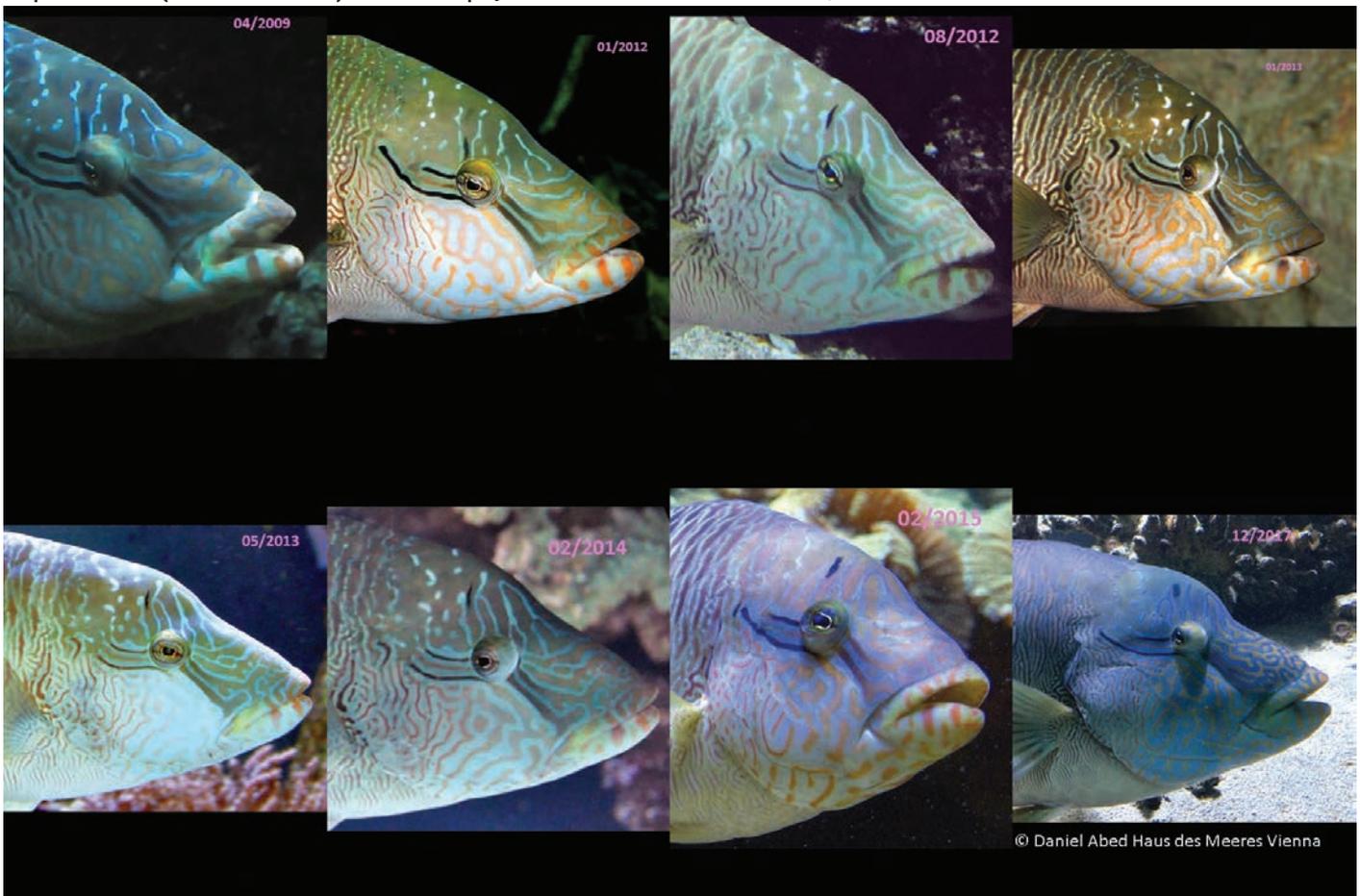
The highly speciose EAZA Fish and Aquatic Invertebrate TAG (FAITAG) has progressed with aligning taxa into more manageable group sizes for elasmobranchs, freshwater and marine teleosts, jellyfish and most recently corals. Each TAG-subgroup has unique goals and objectives that centre around different activities. In April 2017, a joint FAITAG meeting in London (UK) highlighted the requirement for more focused time in each taxonomic area to progress in each subgroup objectives. With each subgroup at different stages of development, a variety of important achievements were realised in the year, ranging from Publications to new Collaborations and new managed programmes.

BREEDING PROGRAMME DEVELOPMENTS

Elasmobranch TAG-subgroup

There are now nine European Studbooks (ESBs) and 30 Monitored-by-Person programmes (MON-Ps). Two ESBs and four MON-Ps have had coordinator changes. One new MON-P was created for the Critically Endangered Angel shark (*Squatina squatina*). This rarely kept species, in European aquariums, needs more attention and we collaborated with the Shark SG of the IUCN to discuss how aquariums can contribute to an improved conservation status of these animals. The MON-P on the Cownose ray (*Rhinoptera bonasus*) received his first coordinator in 2017. Since taxonomy is very difficult within the genus of *Rhinoptera*, it was decided first to monitor the whole genus. Since there were too few animals to be managed, three MON-Ps have been canceled in 2017: Spotted eagle

Napoleon wrasse (*Cheilinus undulates*) identification project © Daniel Abed / Haus des Meeres, Vienna



ray (*Aetobatus narinari*), Reticulated freshwater stingray (*Potamotrygon falkneri*) and Tope (*Galeorhinus galeus*).

Freshwater Teleosts TAG-subgroup

Jorge Antolin from ZSL (UK) is managing a new MON-P for the family Cyprinodontidae and sent out an online survey for Killifish to determine which institutions are working with these species and to obtain husbandry details.

Marine Teleost TAG-subgroup

A census was conducted across European collections for tropical Marine teleosts. The results were presented at a meeting in London (UK). Thirty-two surveys were returned and 25,000 tropical Marine teleosts from within 670 species were reported as follows:

- o The most abundant five species (*i.e.* accounting for ¼ of total fish in our aquariums) were: *Chromis viridis*, *Amphiprion ocellaris*, *Acanthochromis polyacanthus*, *Caesio cunning*, *Monodactylus argentus*
- o The most popular five species (*i.e.* present in 4/5 of the aquariums) were: *Amphiprion ocellaris*, *Paracanthurus*

hepatus, *Zebrasoma flavescens*, *Chromis viridis*, *Labroides dimidiatus*.

Considering these census results, the Blue streak cleaner wrasse (*Labroides dimidiatus*) was proposed as a focus species for further actions and could serve to model skills needed for breeding Endangered species like the Napoleon wrasse (*Cheilinus undulates*) of which 50 specimens are kept by 25 aquariums.

ACHIEVEMENTS DURING THE YEAR

Elasmobranch TAG-subgroup

A coordinator's manual has been developed to help clarify what is expected from them and participating aquariums. This manual will be sent to all coordinators in 2018. A first draft version of the RCP concentrating on the species found in the 2016 census will be finished in 2018. The results will be used for the transition to the "new style" RCP, to be scheduled in the coming years.

Jellyfish TAG-subgroup

The following main focal areas of the subgroup were

established:

- o Manage possible sources of surplus species of jellyfish in different stages of development
- o Create a network that enables aquariums to have the desired species and the knowledge to maintain them through other institutions
- o Share information about species that may have conservation significance in matters such as fish larvae depletion or invasive species due to ocean temperature increase.

To accomplish this, a survey was sent to different institutions and 42 responded. Information on a total of 77 species was acquired. The results were presented at the European Union of Aquarium Curators (EUAC) conference at Royal Burgers' Zoo (The Netherlands) and have been used during the year to help institutions obtain polyps, some very rare, from other institutions.

TAG Chair Hugo Batista attended the 2nd International Jellyfish Conference in Tianjin (China) where he successfully established many new contacts.

PUBLICATIONS

Janse, M. *et al.* (2017). *Sustainable species management of the elasmobranch populations within European aquariums: a conservation challenge*. Journal of Zoo and Aquarium Research 5 (4): 172-181.

Freyhof, J., Weissenbacher, A. and Geiger, M. (2017). *Aphanius kruppi, a new killifish from Oman with comments on the A. dispar species group (Cyprinodontiformes: Aphaniidae)*. Zootaxa, 4338(3), 557-573.

COLLABORATIONS

Javier Gonzalez from the Acuario de Zaragoza (Spain) MON-P for *Arapaima gigas* started a questionnaire survey and established a consulting group which is now able to quickly react to husbandry issues concerning the species.

Two keepers from ZSL (UK) are conducting MON-PS for the two Pacu species (*Colossoma macropomum* and *Piraractis brachypomus*). A survey should help answering questions about these fishes' lifespan, health and diet.

At the EUAC conference in October, a proposal was presented: every organization should keep and display at least one Endangered freshwater fish species, regardless of whether they are involved in a breeding project or regional conservation project, to raise awareness for this group.

In the Marine Teleost TAG-subgroup meeting during the EUAC conference, a project called "larvalcultureproject.org"

was presented. This joint public aquarium breeding project in the US was introduced by Prof. Andrew Rhyne and there will be further activities planned for collaboration in the future.

The RCP for Marine teleosts has progressed with partial assessment of species relevant for public aquariums including Chaetodonidae, Scorpaenidae and Labridae.

CONSERVATION AND RESEARCH

The Marine teleost TAG-subgroup supported a project on Napoleon wrasse identification for CITES enforcement authorities in Singapore. A picture study was conducted for repeated identification of Napoleon wrasse individuals (see the attached compound picture tracing the right head of one animal over eight years). The development of the lines above the eyes and the line-spot pattern on the snout and cheek can be traced back in this time series of eight pictures. It appears that the characters are, on the one hand specific to the individual and at the same time also conservative enough to re-identify an animal after months or even years.

REPTILE

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

TAG Vice Chairs: Gerardo Garcia (Chester Zoo, Chester, United Kingdom); Matt Goetz (Jersey Zoo, Jersey, Channel Islands); Thomas Koelplin (Stuttgart zoo, Stuttgart, Germany); Fabian Schmidt (Leipzig Zoo, Leipzig, Germany); Thomas Wilms (Altwetterzoo, Münster, Germany)

INTRODUCTION

The EAZA Reptile TAG (RTAG) is an advisory body of EAZA in the field of herpetology. Its scope is extremely wide, considering the taxonomic richness of Reptiles (approximately 10,500 species) and their enormous variability (from some tiny species of Squamate reptiles to giant species of Crocodiles, Chelonians or Snakes). In 2017, the RTAG maintained six EEPs and 24 ESBs. It achieved significant improvement in geographical representation of involved zoos and increasingly focused on European endangered reptiles. The RTAG coordinates an optimal management of EAZA reptile collections to ensure long-term existence of populations of managed species of

Blood sampling in Earless monitor lizard (*Lanthanotus borneensis*) for molecular sexing and cytogenetic research, Prague Zoo and Charles University, August 2017 © Ivan Rehak



Chelonians, Crocodiles, Tuataras, 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 and other professional colleagues can meet, share and disseminate information as well as work to improve expertise in reptile husbandry, develop relevant guidelines, protocols and recommendations.

BREEDING PROGRAMME DEVELOPMENTS

In 2017, the RTAG underwent changes in its membership, including an introducing of six new TAG members.

Two new Crocodile programmes started: the Gharial ESB (*Gavialis gangeticus*), run by Ivan Rehak (Prague Zoo, Czech Republic) and the African slender-snouted crocodile ESB (*Mecistops cataphractus*) run by François Huyghe (Biotropica, France). Thus, all Crocodile species, registered in the IUCN Redlist as Critically Endangered or Vulnerable and present in Europe in reasonable numbers, are now for the first time covered by a programme.

A new ESB for the European pond turtle (*Emys orbicularis*) was established. It is run by Jan Vermeer (Parc Animalier de Sainte-Croix, France). With this species, collaborations between zoos, governmental organisations, NGOs and the private sector are very strong and most collections contribute to breeding, head-starting and release projects of local populations. The first published Studbook was available at the end of the year.

After the untimely death of our esteemed colleague Henk Zwartepoorte in 2016, the Egyptian tortoise EEP (*Testudo kleinmanni*) is now coordinated by Mark de Boer (Rotterdam Zoo, The Netherlands).

Claudia Rudolf von Rohr took over the Galapagos giant tortoise ESB (*Geochelone nigra*) from Samuel Furrer (both from Zurich Zoo, Switzerland). The Madagascar spider tortoise ESB (*Pyxis arachnoides*), vacant since 2014, found a new coordinator in Petr Sramek (Zoo Brno, Czech Republic).

Matt Goetz (Jersey Zoo, Channel Islands) was appointed as ESB keeper for the Lesser Antillean green iguana (*Iguana delicatissima*). He developed and presented a first version of a RCP for Iguanidae at the Paris (France) mid-year meeting.

The RTAG has focused on goals specified in the RTAG Five-Year Action Plan (formulated in 2012), such as a progress in RCPs, solutions for stagnant programmes and other significant issues. RTAG representatives were active in various EAZA activities related to Research (Ivan Rehak – member of EAZA Research Committee, member of the Journal of Zoo and Aquarium Research board) and Population management (Matt Goetz – member of EAZA EEP Committee, Fabian Schmidt – member of EAZA Population Management Advisory Group).

ACHIEVEMENTS DURING THE YEAR

Two RTAG meetings were held in 2017. The first meeting - joint with the Amphibian TAG - was hosted in April 2017 by Paris Zoo, France. Among many presentations and reports, special attention was given to strengthening cooperation with the AZA Chelonian TAG, whose Chair, Michael Ogle, attended the meeting. Several closer collaborations emerged from there, especially in view of developing a new EAZA Chelonian RCP under the new format in the coming year. Other important issues discussed were reptile conservation and research and venomous snake management.

The second meeting was held during the EAZA Annual Conference in September 2017. A great variety of presentations, reports, programme updates, new information and discussions were given. The focus was put on conservation supported by the RTAG and research conducted with the TAG participation.

The article “Review of Crocodiles in Zoological Gardens with a focus on Europe” (see below) gives an overview of the Crocodile species and individual numbers kept in zoos worldwide with a special focus on Europe. Based on comparisons with similar articles from the 1970s and 1980s, it shows a development of the collections and recommends considering a shift from very commonly kept species towards species that are in greater need of conservation support. This article can be used as an

Rare encounter with a wild Critically Endangered Cuban crocodile (*Crocodylus rhombifer*) while planning conservation co-operation with Cuban partners, La Cienaga de Zapata, Cuba, November 2017 © Ivan Rehak



effective tool for RCP.

PUBLICATIONS

Johnson Pokorná, M. *et al.* (2016). *First Description of the Karyotype and Sex Chromosomes in the Komodo Dragon (Varanus komodoensis)*. *Cytogenetic and Genome Research* 148 (4): 284-291.

Rehák, I. (2017) *Recovery of wild European Green lizard (Lacerta viridis) population in Prague Zoo*. In: *Zoos in the modern world*. Garamond, Novosibirsk, pp. 30-34 (in Russian, with English summary).

Rovatsos, M. *et al.* (2017). *Sexing of Komodo dragons, Varanus komodoensis*. *Gazella* 42 (Zoo Praha): 92-107.

Ziegler, T., Rauhaus, A. and Schmidt, F. (2017). *Review of Crocodiles in Zoological Gardens with a focus on Europe*. *Der Zoologische Garten* 86: 18-40.

COLLABORATIONS

The TAG co-operated closely with internal EAZA partners (e.g. EAZA Amphibian TAG, EEP Committee, Research Committee, Population Management Advisory Group) and many external partners, especially from the field of reptile

Conservation and Research. Collaborations with partners in other regional associations (e.g. AZA, Zoo and Aquarium Association ZAA) were built.

To facilitate a creation of *ex situ* and *in situ* conservation links, the RTAG continued to develop a close cooperation with the IUCN SG, Task Forces (TF) and other IUCN umbrella organisations – in particular Crocodile SG, Iguana SG, Tortoise and Fresh-water Turtle SG, CSG Tomistoma TF, Turtle Conservation Alliance – plus other international reptile conservation initiatives (e.g. Gharial Conservation Alliance, Gharial Ecology Project, Asian Turtle Conservation Network, Blue Iguana Recovery Programme).

TAG members also personally took active participation roles at SG meetings, such as a special Working Group on CSG, and vice versa participation of SG members at RTAG meetings.

Research was conducted in widespread co-operation with universities and other research institutions. Since 2016 RTAG members regularly participate to the European Croc Networking Meeting which goal is to bring researchers, students, conservationists, private keepers, zoo staff, authorities and staff from the leather industry together and

show opportunities for future projects and cooperation.

CONSERVATION AND RESEARCH

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 as well as academic partners, important research projects have been conducted. For instance, a complex international cytogenetic and genome research in Komodo dragons (*Varanus komodoensis*).

The new programme for Indian gharials (*Gavialis gangeticus*) under the leadership of Prague Zoo supports conservation and research projects in India, especially the studies by Jeff Lang on ecology and reproduction of this species at Chambal River. The ESB for Philippine crocodile (*Crocodylus mindorensis*) continues the support for the conservation of this species in the Philippines. We supported field work carried out by David Oudjani (University of Toulouse, France) on the distribution of the species in Togo, potential threats and possible restoration projects.

Additionally, the African dwarf crocodile ESB (*Osteolaemus tetraspis*) supported Agata Staniewicz's (Bristol University, UK) research on acoustic communication and its use as acoustic tracking method for population assessment on crocodile species in Gabon and Côte d'Ivoire. With support from this ESB, CREDI-ONG in Bénin carried out a feasibility study of farming Crocodiles for legal selling on food markets to reduce poaching pressure on wild populations; the results were not very promising regarding economic feasibility.

A survey on Tomistoma (*Tomistoma schlegelii*) in the Sabangau River, Indonesia, carried out by Mark Harrison, Borneo Nature Foundation and supported by the ESB and its participating zoos (Fuengirola, Chester, Dvur Kralove, Leipzig and Pierrelatte) was finalized by 2016. It showed the presence of the species in this area but identified several threats including land conversion, forest fires, fish over-harvesting and pollution. Martine van Zijll Langhout and the veterinary department (Artis Royal Zoo, The Netherlands) conducted a study on sperm collection and artificial insemination in Tomistoma, which was unfortunately unsuccessful so far.

Olivier Marquis (Paris Zoo, France) demonstrated

commitment that zoos make to supporting species in the wild when he presented preliminary results of a field survey on Smooth-fronted caimans (*Paleosuchus trigonatus*) and on Black caimans (*Melanosuchus niger*) in the Nouragues Reserve, French Guyana.

For more examples of research please see the images and associated text.

RATITE

TAG Chair: Joost Lammers (Vogelpark Avifauna, Alphen, The Netherlands)
TAG Vice Chair: Jo Gregson (Paignton Zoo Environmental Park, Paignton, United Kingdom)

INTRODUCTION

The EAZA Ratite TAG was established in 2008 and encompasses all species of Palaeognath birds. This includes Ostriches, Rheas, Cassowaries, Emus, Kiwis and Tinamous. The TAG mission is to facilitate management of captive Ratites and Tinamous in the EAZA collections and participate in and support relevant conservation efforts.

BREEDING PROGRAMME DEVELOPMENTS

2017 has been a good year in general for the managed breeding programmes. Without exception, all populations have been growing and several new zoos joined the programmes, with no less than seven new participants in 2017 for the Lesser rhea ESB (*Pterocnemia pennata*). There were however some issues related to concerns about Avian Influenza. In some EAZA zoos the Ratites had to be kept inside which influenced the breeding success somewhat negatively. This was especially the case for the North African ostrich (*Struthio camelus camelus*) EEP.

ACHIEVEMENTS DURING THE YEAR

In 2017 Hannover Zoo (Germany) again managed to import some North African ostrich eggs from Morocco to supplement the EEP population and add some fresh blood to the population of this Endangered subspecies. Due to unforeseen weather conditions (air temperatures unexpectedly went down to 2°C), birds had already abandoned their nests. Delegates from Hannover Zoo collected about 30 eggs. As the eggs were abandoned already most eggs were old and not viable and as a consequence many embryos died at a very early stage. At the end five chicks hatched of which one unfortunately did

Southern Cassowary (*Casuarius casuarius*) in shell © Zlin-Lesna Zoo



not survive. The addition of the four remaining birds still means an important addition to this population in human care. Thanks to the colleagues of Hannover Zoo for their continued efforts to set up a backup population for this species.

PUBLICATIONS

LaGreco, N. (2017). *Southern Cassowary International Studbook*. San Diego Zoo (USA).
 Robertson, H. and Colbourne, R. (2017). *Kiwi Best Practice Manual*. New Zealand Department of Conservation.
 Elmers, M. (2017). *Het broedseizoen van de kasuaris*. Dierenpark Amersfoort / Hogeschool InHolland.

CONSERVATION AND RESEARCH

Chester Zoo (UK) conducted research on captive diets for Southern cassowary (*Casuarius casuarius*) within EAZA collections. Andrew Owen, Curator of Birds at Chester Zoo, briefly presented the outcomes of the study during the TAG

North African ostrich (*Struthio camelus camelus*) eggs prepared for transport © Hannover Zoo



meeting at the EAZA Annual Conference in Emmen (The Netherlands).

At Dierenpark Amersfoort (The Netherlands) a student from InHolland, Mylene Elmers, studied the behaviour of the Southern cassowaries during their first successful breeding season there. She presented her findings at the EAZA Annual Conference too and published an article in De Harpij, a Dutch national magazine for zookeepers.

PENGUIN

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

TAG Vice Chair: Jo Elliott (Royal Zoological Society of Scotland, Edinburgh, Scotland)

INTRODUCTION

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

BREEDING PROGRAMME DEVELOPMENTS

A TAG meeting was held at the EAZA Annual Conference, in which the status of the different species was reviewed by both coordinators and participants.

While the populations of African penguins (*Spheniscus demersus*), King penguins (*Aptenodytes patagonicus*), Humboldt penguins (*Spheniscus humboldti*), Magellanic penguins (*Spheniscus magellanicus*) and Gentoo penguins (*Pygoscelis papua*) are developing well, those of Macaroni

Gentoo penguins (*Pygoscelis papua*) © Gaby Schwammer

Humboldt penguins (*Spheniscus humboldti*) © Wildlands Adventure Zoo Emmen


penguins (*Eudyptes chrysolophus*), Northern rockhopper penguins (*Eudyptes moseleyi*) and Southern rockhopper penguins (*Eudyptes chrysocome*) remain vulnerable due to a lack of breeding. For these three species, a more intensive cooperation with the AZA has been decided as one of the strategies to improve the situation. The populations of Adélie penguins (*Pygoscelis adeliae*) and Chinstrap penguins (*Pygoscelis antarctica*) in EAZA are tiny and will be kept that way, both being not recommended.

During a closed session of the TAG, arrangements were made about the way to establish BPG. Although it was one of the points of interest resulting from the TAG evaluation which took place in 2017, this significant project did not progress as supposed to. Yet, for both species of Rockhopper penguins most useful husbandry notes were published by Vienna Zoo (Austria) in 2017. In the same meeting, the lack of continuation and quality in the EEP for the Humboldt penguin over the last few years was discussed. This resulted in the coordinator stepping down. A new coordinator will be sought by the TAG. During the EAZA Annual Conference in Emmen, the TAG briefly discussed the need to review the RCP in line with the new EAZA guidelines, to start in 2018 and to be finished in 2020. One of the main elements in this context was the setting of target populations for the different species, as one of the priorities coming out of the TAG evaluation.

PUBLICATIONS

The draft document entitled “*EAZA Penguin TAG applications check-list for imports of penguins or their eggs from the wild*”, referred to in the 2016 report, was submitted for approval to the EEP Committee in 2016.

As this check-list is based on two EEP Committee

approved documents, it was concluded that separate EEP Committee approval for it was not required. Thus, as the checklist is 1) the TAG’s interpretation of two EEP Committee documents and 2) the TAG’s way of ensuring any import of wild penguins (eggs or birds) is in accordance with the already approved guidelines, it falls within the remit of the TAG. As such, it has been uploaded and is available on the TAG’s webpage.

COLLABORATIONS

Despite intensive contacts with the Australian programme, an attempt to import Little penguins (*Eudyptula minor*) from Australia to EAZA failed in 2017, but further attempts will be made in the future.

As mentioned above, cooperation with AZA coordinators of both Macaroni penguins and Rockhopper penguins has been intensified during the year.

CONSERVATION AND RESEARCH

The TAG does not directly support conservation work, but highlights the work of its members. This year again, the Southern African Foundation for the Conservation of Coastal Birds (SANCCOB) and Sphenisco, for African and Humboldt penguins respectively, have been extensively supported by penguin holders in Europe. Cooperation with the IUCN Penguin Specialist Group (PSG), formed in 2016, was sought. Actual agreements about further cooperation have not been made yet.

Due to possible cases of hybridization between African and Humboldt penguins, a research project was set up by the African penguin EEP in cooperation with the RZSS, Royal Zoological Society of Antwerp, Copenhagen Zoo and the EAZA Executive Office (EEO). It comprises a population

genetic analysis of samples from wild and captive birds in order to determine whether hybridization is really an issue; the project will extend to 2019.

CICONIIFORMES AND PHOENICOPTERIFORMES

TAG Chair: Catherine King (Weltvogelpark Walrode, Walsrode, Germany)

TAG Vice Chair: Andrea Bracko (Zagreb Zoo, Zagreb, Croatia)

INTRODUCTION

The EAZA Ciconiiformes and Phoenicopteriformes TAG includes 128 species in six families. Many species, 102 of out of 122 traditionally included in the Ciconiiformes, have recently been delegated to the order Pelecaniiformes in a widely used taxonomy [HBW and BirdLife International (2017) *Handbook of the Birds of the World* and *BirdLife International digital checklist of the birds of the world*. Version 2 Available at: <http://datazone.birdlife.org>]. From a management perspective, the species of Herons, Ibises, Spoonbills, Shoebill (*Balaeniceps rex*) and Hamerkop (*Scopus umbrette*) will fit with the remaining Ciconiiformes. Another name for the TAG should be considered, possibly together with other regions using the same terminology. The family with the most threatened species is Threskiornithidae, with eight (22%) of the Ibises and Spoonbills categorized as threatened on the IUCN Red List, of which half are considered Critically Endangered.

BREEDING PROGRAMME DEVELOPMENTS

Matthias Hendel (Dresden Zoo, Germany) was appointed as the new Studbook keeper for the Saddle-billed stork ESB (*Ephippiorhynchus senegalensis*).

ACHIEVEMENTS DURING THE YEAR

A TAG meeting was held in May in Vienna and another in Emmen in September. Both meetings included a variety of topics and excellent speakers.

A Skype presentation given in May by Michael Myerhoff, Manager at the Ankor Centre for Conservation of Biodiversity (ACCB, Cambodia) to explain the centre's work with threatened species covered by the TAG, and potential ways in which EAZA Members could provide assistance, was well received. Attendants generally agreed that this could be a useful means to bring other conservation

organizations in touch with TAG meeting participants. Many zoos are a haven for indigenous birds, including herons. These heronries support local wildlife, offer research possibilities, and provide an opportunity to educate the public about bird ringing and data collection. A presentation in May by Antonin Vaidl concerning heronries in Prague Zoo (Czech Republic) showed many positive aspects, while the one by János Szánthó describing the situation at Artis Royal Zoo (The Netherlands) illustrated how managing wild heronries together with zoo birds can be problematic and how creative solutions are needed.

The TAG plans to gather more data to help zoos maximize the advantages and minimize the disadvantages of on-site native heronries.

Management questionnaires were at some stage of development for Lesser flamingos (*Phoeniconaias minor*; Johnpaul Houston, Blackpool Zoological Park, UK), Scarlet ibises (*Eudocimus ruber*; Andreia Pinto, Lourosa Zoo, Portugal) and White storks (*Ciconia ciconia*; Agnieszka Czujkowska, Warsaw Zoo, Poland) during 2017. A very productive Long-Term Management Plan (LTMP) meeting for the Northern bald ibis (*Geronticus eremita*) was held at the EEO in October.

PUBLICATIONS

King, C. (2017). *Flamingos in Captivity: Pretty in pink, popular and puzzling*. In: Anderson, M.J. (Ed). *Flamingos: Behaviour, Biology and Relationships with humans*. Nova Science, New York.

Studer-Thiersch, A. (2017). *Reproductive biology and parental behaviour*. In: Anderson, M.J. (Ed). *Flamingos: Behaviour, Biology and Relationships with humans*. Nova Science, New York.

COLLABORATIONS

Catherine King is now also a co-Chair of the IUCN SSC/Wetlands International Flamingo SG, which will help to maintain the already good collaboration between the SG and zoo community.

Andrea Bracko, became a member of the International Glossy Ibis Network and gave a presentation on Glossy ibises (*Plegadis falcinellus*) in human care, in Croatia at a network meeting in 2017.

Both Chairs of the IUCN SSC/Wetlands International Stork Ibis and Spoonbill SG were in attendance, which provided an opportunity to further strengthen ties. Catherine attended the AZA Ciconiiformes and Phoenicopteriformes TAG Strategic Planning Workshop in March. This gave an

Parent and chick White-bellied heron (*Ardea insignis*), Bhutan © Lubomir Peske



occasion to explore further cooperation between the two regions.

Christiane Boehm (Alpenzoo, Austria), Coordinator for the Northern Bald Ibis EEP, attended a meeting of the Northern Bald Ibis Working Group in Morocco as an observer in her role of co-Chair of the International Advisory Group for this species. A reintroduction project for this species in Algeria was one of the topics discussed.

Catherine King, Roman Horsky and Marketa Horska (Zlin-Lesna zoo, Czech Republic) and Antonin Vaidl attended a White-bellied heron (*Ardea insignis*) meeting hosted by Royal Society for Protection of Nature (RSPN) in Bhutan in November.

CONSERVATION AND RESEARCH

Construction of a centre in Bhutan to safeguard the future of the Critically Endangered White-bellied heron through conservation breeding is being undertaken by the RSPN as part of its comprehensive conservation activities. As there is little avicultural experience in Bhutan to draw on, the

White-bellied Heron Working Group Coordinator, Gemma Goodman (Synchronicity Earth), and Working Group Captive Breeding Advisor, Catherine King, approached Prague and Zlin-Lesna Zoos for help. These zoos trained the first RSPN staff in bird handling and rearing techniques in 2017. Additionally, they provided the breeding centre's architect with an intensive programme in aviary design to maximize benefit to the birds. Colonies of Grey (*Ardea cinerea*) and Black-crowned night (*Nycticorax nycticorax*) herons nesting on Prague Zoo grounds studied by local ornithologists provided an excellent opportunity for RSPN staff to also improve their field skills. One of these ornithologists, Lubomir Peske, is also assisting in satellite transmission tagging of White-bellied herons in Bhutan to better understand dispersal, habitat use and mortality of this population.

Between 2015 and 2017, seven White storks were fitted with GPS transmitters in Croatia in the name of SOS Stork Croatia, a collaborative project between Zagreb Zoo (Croatia) and Stork Schweiz (Switzerland), as part of

Holger Schulz carrying a White stork (*Ciconia ciconia*) fitted with a transmitter © Luka Jurinovic



the larger White Stork Migration in the Face of Change project. The transmitter of Tesla, an adult male tagged in 2016, stopped sending data in April 2017 during his spring migration. The transmitter was located on a roof top in the village of Bzal, Lebanon, and it is assumed he was shot. Efforts to verify his demise and to recover the transmitter failed, despite the involvement of many organizations and influential people. His death triggered a citizens' initiative to demand strict and consistent application of the Lebanese hunting law 580/2004. A hunting ban, ongoing for many years, has not been enforced, and illegal hunting is common. Among other activities the group started a petition to make bird migration over Lebanon safe, this was addressed to his Excellency General Michel Naim Aoun, the President of Lebanon and his Minister of the Environment, and was signed by more than 9,400 people. This movement resulted in a historic meeting between Claudine Aoun Roukoz, daughter of the Lebanese president and his special Advisor, with Lebanese representatives of bird protection organizations as well as hunting organizations.

An important agreement was reached to enact a hunting season from September to January 2018, with hunting activities closely monitored, and illegal hunting seriously punished. The new hunting law, also known as Tesla's law, prohibits hunting of any bird species after January 2018.

WATERFOWL AND PELECANIFORMES

TAG Chair: Bernd Marcordes

(Cologne Zoo, Cologne, Germany)

TAG Vice Chairs: Peter Smallbones

(Paignton Zoo Environmental Park, Paignton, United Kingdom) and Johnpaul Houston (Blackpool Zoological Park, Blackpool, United Kingdom)

INTRODUCTION

The EAZA Waterfowl and Pelecaniformes TAG has both the group of Anseriformes species as well as the 65 Pelecaniformes species, four Gaviiformes species, 22 Podicipediformes species and 108 Procellariiformes under its remit. However, most of the latter 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 focused on IUCN redlisted species. The latest RCP for the Pelecaniformes species dates back to 2004. A revision for both RCPs is required in the short term and will be discussed at the 2018 Budapest meeting.

BREEDING PROGRAMME DEVELOPMENTS

Several species are monitored by the TAG as EEPs, Studbooks and MON-Ps:

- o Meller's duck EEP (*Anas melleri*), Harriet Whitford, Jersey Zoo, Channel Islands
- o Bear's pochard ESB (*Aythya baeri*), Peter Smallbones, Paignton Zoo Environmental Park, UK
- o White-winged wood duck ESB (*Asarcornis scutulata*), William van Lint, EEO, The Netherlands
- o Dalmatian pelican EEP (*Asarcornis scutulata*), pending
- o Pink-backed pelican ESB (*Pelecanus rufescens*), Georgina Barnes, Longleat Safari Park, UK
- o Little pied cormorant ESB (*Microcarbo melanoleucos*), Martin Kaiser, Berlin Tierpark, Germany
- o Scaly-sided merganser ESB (*Mergus squamatus*), Johnpaul Houston (Blackpool Zoological Park, UK)
- o Northern gannet (*Morus bassanus*) and Anhinga (*Anhinga anhinga*) MON-Ps, vacant

The Long-Term Management Plan report for the Dalmatian pelican EEP was finalized in 2017 © Ray Wiltshire



- o Brown pelican (*Pelecanus occidentalis*) MON-P, vacant
- o Eastern white pelican (*Pelecanus onocrotalus*) MON-P, Piotr Cwiertnia (Poznan Zoo, Poland)
- o Seaducks (Mergini) MON-P, Catherine King (Weltvogelpark Walsrode, Germany)
- o screamers (Anhimidae) MON-P, Joost Lammers (Avifauna, The Netherlands)
- o Pygmy geese (*Nettapus sp.*) MON-P, Flemming Nielsen (Copenhagen Zoo, Denmark)

As a consequence of the EEP evaluation it was decided to downgrade the Bank cormorant (*Phalacrocorax neglectus*) EEP to a monitoring programme, because there were just two male birds left, and the focus of the conservation efforts were shifted towards *in situ* conservation and no longer on establishing a population in human care in Europe. The evaluation of two other EEPs were in progress during this year and should be finalized in 2018.

The LTMP report for the Dalmatian pelican EEP was finalized in 2017. The report presents the outcome of

the LTMP meeting, kindly hosted by Poznan Zoo, Poland (in 2016), with regard to roles and goals of and future ambitions for the programme. The number of EAZA institutions keeping Waterfowl and Pelecaniformes is slowly growing, as well as the total number of Anseriformes and Pelecaniformes kept within EAZA.

However, the breeding of Anseriformes species 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 and the increased breeding success, it is different for these birds.

ACHIEVEMENTS DURING THE YEAR

The newest discussions about the pinioning of birds in different EU countries won't influence this trend in a positive way. As concluded in the "Future prospects of commonly kept pinioned bird species at EAZA zoos" report (EEO, September 2016), the Anseriformes and Pelecaniformes 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 RCP and underlines the need for institutional commitment from EAZA Members to focus more on the priority species.

There was an EAZA Waterfowl and Pelecaniformes TAG meeting held at the Bird TAGs Meeting in Vienna in May 2017. Programme updates were discussed, especially for the Baer's pochard ESB and White-winged wood duck ESB. Also, the impact and consequences of the most recent Avian Flu outbreak was discussed. As a consequence of



Male Baer's pochard (*Aythya baeri*) © Phoebe Vaughan

this discussion an Avian flu workshop was arranged for the EAZA Annual Conference in Emmen. Representatives of the Veterinary Committee, EAZA's EU Policy Manager, a representative of one of the National Zoo Associations and an example case illustrated by Berlin Zoo provided relevant background information about the disease, the measures in place at an EU and National level, and impact on an institutional level. Guidance was given on contingency planning.

COLLABORATIONS

TAG members are represented in some of the relevant IUCN SGs (e.g. Threatened Waterfowl SG) and/or taskforces (Baer's pochard, scaly-sided merganser).

FALCONIFORMES AND STRIGIFORMES

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

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

INTRODUCTION

2017 was a productive and busy year for the EAZA Falconiformes and Strigiformes TAG. This year the EEP Committee approved a new EEP for the African white-backed vulture (*Gyps africanus*), which will be coordinated by Jane Robertson (Hawk Conservancy Trust, UK). Simultaneously the TAG is working on a proposal for a Hooded vulture (*Necrosyrtes monachus*) EEP. This still needs to be approved by the EEP Committee.

BREEDING PROGRAMME DEVELOPMENTS

Between 28 to 30 August 2017, Inigo Sanchez and Zoobotanico Jerez de la Frontera (Spain) hosted EAZA's combined LTMP meeting for three European vulture species. Field experts from the Vulture Conservation Foundation (VCF, Switzerland) and Ligue pour la Protection des Oiseaux (France) attended to exchange expertise and ideas. Several persons represented the TAG, EAZA and the relevant species programmes: Mark Habben (TAG Chair), Marleen Huyghe (European black vulture EEP Coordinator, Royal Zoological Society of Antwerp), Philippe Helsen (Royal Zoological Society of Antwerp), Antonin Vaidl (Egyptian vulture EEP coordinator, Prague Zoo, Czech Republic), Inigo Sanchez (Eurasian griffon vulture ESB Keeper, Jerez Zoo, Spain), Hans Frey/Alex Llopis (Bearded vulture EEP

Coordinator, VCF, Switzerland) and William Van Lint (EEO, The Netherlands).

Kristin Leus and Elmar Fienieg from the EEO guided us through this productive workshop which aimed at summarizing the *in situ* status of the three species, with Jose Tavares of VCF providing us with an engaging presentation. The programme managers then presented information on Griffon (*Gyps fulvus*), Eurasian black (*Aegypius monachus*) and Bearded vultures (*Gypaetus barbatus*), providing the history and current management of each programme (*i.e.* breeding institutions, reintroductions and decision-making criteria) as well as an overview of the *ex situ* status.

Discussions about the determined and upcoming roles and goals of the programmes and RCP implications, especially the competition with other species, such as the African vultures.

Harvest scenarios per species were addressed on Day 2, with a focus on "Starting points for Reintroductions" e.g. hand-rearing, stability of EEP to support introductions, urgency in the wild, political opportunities, challenges and stimuli. We then looked at future population management strategies per species.

Having all stakeholders together enabled us to discuss how the different programmes operate in terms of partnerships, responsibilities, communications and workload. It highlighted our future, collaborative opportunities and responsibilities which everyone embraced.

On the final day, we looked at creating transfer and breeding recommendations for the Griffon vulture ESB before heading off to observe real vultures in release sites around Jerez: an amazing opportunity and an exciting conclusion to a productive meeting.

ACHIEVEMENTS DURING THE YEAR

Successful meetings were held in both Vienna and Emmen throughout the year with some key objectives agreed and met.

Of particular note, was the agreement of a "pre-conference meeting" for TAG members to establish a structure and strategy for the group.

The first of these meetings was hosted by Hans Frey at his centre, Eulen-und greifvogel -station in Haringsee near Vienna (Austria). There we visited the Bearded vulture breeding facilities and learned about a local release project for the Ural owl (*Strix uralensis*). We also managed to see the

The pre-conference meeting in Haringsee (Austria); Bird watching in Spain after the Long-Term Management Plan meeting © Mark Habben



extensive rehabilitation facility for local bird of prey species. The meeting itself was aimed at discussing the following points:

- o Current position of the TAG
- o Current strengths within the TAG
- o Issues, weaknesses, areas to develop: lack of interest or ability in holding a large number of species in many collections; time constraints; many large or poorly exhibited species within the taxa
- o Where do we want to be? Active TAG with very clear areas of focus; Consultancy/Advisory (to external bodies, to Zoological collections); Conservation outputs, linking to field projects; recognised individuals taking a lead for sub-groups
- o How will we get there? Strategy development: Group leaders/Vice Chairs for specific families/orders (Strigiformes, Cathartiformes and Old World Vultures, Accipitriformes); Clear responsibilities and defined expectations of role

- o Challenges
- o Actions and Timelines

The meeting ended with some clear and decisive outcomes, agreed by all participants. Changes in the TAG structure were approved as described below. The Group leaders are now Kirsi Pynnönen-Oudman for the Strigiformes subgroup; Joost Lammers (Vogelpark Avifauna, The Netherlands) and Marleen Huyghe for the Cathartiformes and Old-world vultures subgroup; Mark Habben, Graeme Dick (Longleat, UK), Jan Hanel (Zoo Liberec, Czech Republic) for the Accipitriformes subgroup.

They will be responsible for individual reports to TAG Chair, updating RCPs (one RCP split between orders), recommendations, allocating responsibilities and recruiting support, selecting specific topics and presentations for EAZA meetings, EEP evaluations and providing a liaison point between EAZA TAG and *in situ* teams.

The mid-year TAG meeting provided an update on the above outcomes as well as some enlightening presentations on “Breeding success with White-headed vultures (*Trigonoceps occipitalis*)” by Andy Hinton (Hawk Conservancy Trust); “Striated Caracara (*Phalcoeboenus australis*), Breeding and Enrichment at Zoological Society of London” by Adrian Walls (ZSL, UK) and “Breeding Success and Release Strategy for Bearded Vultures” by Hans Frey.

Another successful TAG meeting took place in Emmen and we were pleased to see exceeded capacity. An update on TAG work to date led into some engaging and exciting presentations, including “Welcome introduction, apologies and updates” by the TAG Chair; “Eurasian Black Vulture Projects and Zoo Community Involvement” by Philippe Helsen; “Breeding Experiences with King Vultures at Ostrava Zoo” by Yveta Svobodova (Czech Republic); “Steller’s sea eagle (*Haliaeetus pelagicus*) conservation project updates” by Liubov Kurilovich (Moscow zoo, Russia) and “The successful adoption of a Secretary Bird by a pair of Bald Eagles (*Haliaeetus leucocephalus*)” by Jan Hanel.

As ever, the TAG is extremely grateful for the willing participation of Member institutions in presenting data at these meetings. We always have a very competent and engaging uptake to these requests which always results in interesting presentations.

In March 2017, the TAG Chair Mark Habben was invited to the UK “Raptor Awards” as a guest speaker to talk about best practice management for birds of prey in human care. He used elements from the “BPG for Demonstration Birds” to highlight some key considerations of managing these

species.

The presentation received a lot of interest from UK and overseas bird of prey professionals.

PUBLICATIONS

To improve communication between TAG members we set up an active “Whatsapp Group” and initiated an EAZA Falconiformes and Strigiformes Facebook page which is receiving a lot of interest.

GALLIFORMES

TAG Chair: Jan Dams (pending)

TAG Vice Chair: Ludo Pinceel (World Pheasant Association, Hexham, United Kingdom)

INTRODUCTION

The EAZA Galliformes TAG manages all species of the order Galliformes, including Megapodes (*Megapodiidae*), Turkeys (*Meleagrididae*), New World quails (*Odontophoridae*), Pheasants and Partridges (*Phasianidae*), and Guineafowls (*Numididae*) with the exception of Chachalacas, Guans, and Curassows (*Cracidae*).

BREEDING PROGRAMME DEVELOPMENTS

During 2017, Veronika Zahradníčková (Prague Zoo, Czech Republic) joined the TAG as Studbook keeper for the Cabot’s tragopan (*Tragopan caboti*). Veronika was already involved with the Edwards’s pheasant (*Lophura edwardsi*) EEP where she helped update the Studbook. She has made a flying start with updating the current Studbook of the Cabot’s tragopan and is urging the keepers of these birds to take part in the genetic study, led by the World Pheasant



Male Edwards’s pheasant (*Lophura edwardsi*) © Roland Wirth

Female Rothschild’s peacock pheasant (*Polyplectron inopinatum*)
© Friedrich Esser



Association (WPA), to test birds currently kept within EAZA institutions.

Gavin Harrison (Waddesdon Manor Aviary, UK) has taken on the task of Studbook keeper for the Malayan peacock-pheasant (*Polyplectron malacense*). Gavin already runs the Studbook for the Rothschild’s peacock-pheasant (*Polyplectron inopinatum*) and he is working hard to increase the populations for both species within EAZA institutions.

The functioning of the TAG, as part of the TAG evaluation, was rated as good-sufficient. Until the next evaluation the TAG will increase the quality of our work through the establishment of a “new style” RCP following the new population management structure, the proactive promotion of Galliformes, and the publication of BPG.

The Congo peafowl (*Afropavo congensis*) EEP was evaluated as good. The population has been struggling due to bad breeding results in the past few years. Full commitment from the participants will be required to maintain a population in the future.

The Blyth’s tragopan (*Tragopan blythii*) Studbook has ended. Unfortunately, there are no longer birds kept within EAZA institutions and there are no birds available through cooperation with private breeders or other regions to restock the EAZA population.

ACHIEVEMENTS DURING THE YEAR

Two TAG meetings were held in 2017. During the mid-year bird TAG meeting in Vienna the focus was much on the Edwards’s pheasant where Tobias Rahde (Berlin Zoo, Germany), ISB keeper for this species, presented the current efforts in Vietnam.

At the EAZA Annual Conference, there was a diverse agenda. Simon Dowell (Chester Zoo, UK) co-Chair of the

IUCN SSC Galliformes SG, gave a presentation about conservation action planning for Galliformes. Husbandry tips and tricks were given during a presentation about Brown eared pheasant (*Crossoptilon mantchuricum*) by Marleen Huyghe (Royal Zoological Society of Antwerp, Belgium), and Rothschild's and Malayan peacock pheasant by Gavin Harrison. Tomas Kapic (Prague Zoo, Czech Republic) also gave a presentation about the Edwards's pheasant EEP.

There were two meetings, hosted by the EEO in Amsterdam and Berlin Zoo, to discuss the future plans for the Edwards's pheasants both in human care and in Vietnam. Representatives from the TAG, EEP, EEO, WPA and VietNature attended the meeting.

COLLABORATIONS

Both the TAG Chair Jan Dams and the Vice Chair Ludo Pinceel are members of the IUCN SSC Galliformes SG. There is close cooperation with Simon Dowell (co-Chair of the SG) on the creation of the new RCP.

Cooperation with Pham Tuan Anh (VietNature, Vietnam) on the establishment of a conservation breeding centre for Edwards's pheasant in Vietnam has been very good. Meetings were held with VietNature and partners both in Vietnam and Europe.

The link between EAZA and AZA is kept strong with regular contact between the TAG Chairs.

CHARADRIIFORMES

TAG Chair: Simon Matthews (Breeding Centre for Endangered Arabian Wildlife, Sharjah, United Arab Emirates)

TAG Vice Chair: Nigel Simpson (Wild Place, Bristol, United Kingdom)

INTRODUCTION

In September 2017, Simon Matthews was appointed as the new EAZA Charadriiformes TAG Chair after the position had been vacant since 2015.

The TAG is currently reviewing the state of affairs and preparing for their first meeting in Budapest (April 2018).

BREEDING PROGRAMME DEVELOPMENTS

The two formal managed populations, being the Atlantic puffin ESB and Inca tern ESB, have been stable. The BPG for Atlantic puffin (*Fratercula arctica*) were being reviewed by Flemming Nielsen (Copenhagen Zoo, Denmark), ESB

Wild colony of Atlantic puffin (*Fratercula arctica*) © Marita Gulckett and Jens-Kjeld Jensen



coordinator, after receiving an edit back from the EEP Committee. A revised version will hopefully be submitted in 2018.

Breeding recommendations have been formed for Inca terns (*Larosterna inca*) and will be circulated in 2018. The TAG will start working on the BPG for this species as well.

PIGEON AND DOVE

TAG Chair: Duncan A Bolton (Institutional Support Paignton Zoo Environmental Park, Paignton, United Kingdom)

TAG Vice Chair: Vacant

INTRODUCTION

The EAZA Pigeon and Dove TAG has a number of highly significant species, including the Critically Endangered Mauritius pink pigeon (*Nesoenas mayeri*) and the Extinct in the Wild Socorro dove (*Zenaida graysoni*). Both species are at important phases in their management with the potential for birds from the EEPs to be released in the wild soon. The Mauritius pink pigeon has benefited from a LTMP meeting held in Jersey a few years ago where we decided to redouble efforts with the captive population. As a result, 30 young were produced in 2017, one of the best successes in many years and importantly with breeding in several collections. It is likely we will be seeking to expand this programme as well as returning birds to the-free living population in Mauritius.

The TAG also established a group focussing on the rescue of the Santa Cruz ground dove (*Alopecoenas sanctaecrucis*), after a call for help from BirdLife International. It resulted in the TAG helping to save a small population from exploitation and natural disaster, with a full species action

plan being developed. Thus, the TAG actions can have a direct and positive impact for threatened species in the wild.

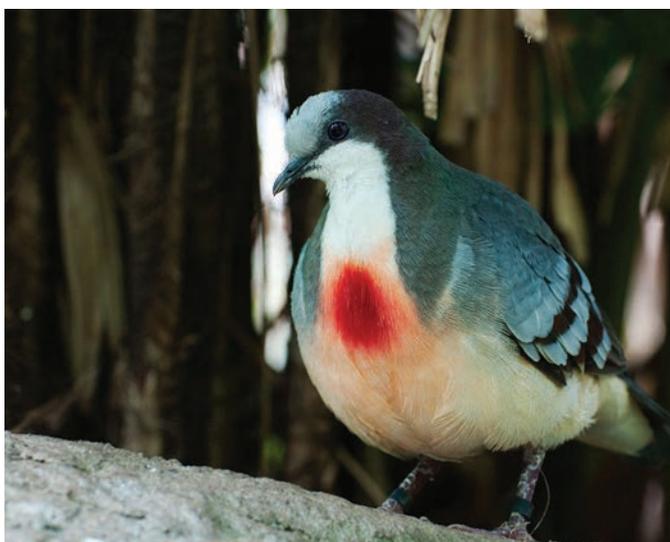
We had a single TAG meeting in 2017, held during the 2017 EAZA Annual Conference in Emmen.

BREEDING PROGRAMME DEVELOPMENTS

After many years without an ESB keeper for the Common crowned pigeon (*Goura cristata*), we had two applicants in 2017. With input from the EEO, the TAG supported the application of Bori Kocsis (Budapest Zoo, Hungary). We also welcomed Richard Switzer (Bristol Zoo, UK) as the new ESB keeper for the Luzon bleeding-heart dove (*Gallicolumba luzonica*).

ACHIEVEMENTS DURING THE YEAR

Following the alert about the plight of the Santa Cruz Ground dove in the Solomon Islands in October of 2017, the TAG quickly formed a Santa Cruz Support Group, with Duncan Bolton and Nigel Collar (BirdLife International) as Chair and Vice Chair, respectively. The species needed immediate action as most of the known living birds were being held in poor conditions by bird dealers ready to export them to the Middle East. A total of 112 birds were rescued and moved to safe housing in a governmental compound in Honiara, Solomon Islands. Together with partners, we have developed a full action plan to protect these birds and ultimately re-establish a free population in the Solomon Islands - their home island endured a volcanic eruption just weeks after the trapping had taken place. Financial and physical support was provided by several EAZA zoos, by Wildlife Reserves Singapore (Singapore) and



Luzon bleeding heart dove (*Gallicolumba luzonica*) © Kao-Tai

Toledo Zoo (USA). Additional efforts are still required.

COLLABORATIONS

We have worked closely with BirdLife International regarding the Santa Cruz ground dove crisis. The Mauritius pink pigeon EEP worked with the Mauritian Wildlife Foundation in all matters related to the species. The Socorro dove EEP collaborated with the Mexican government and non-governmental organisations and agencies for the repatriation of these birds to their home island.

PARROT

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

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

INTRODUCTION

Parrots are one of the most threatened bird's orders with 28% of species listed as globally threatened and 56% of all Parrot species in decline.

BREEDING PROGRAMME DEVELOPMENTS

The third edition of the RCP was finalized in Autumn 2016 and was published on the EAZA website in early 2017. As a result, a number of changes were made to the programmes.

Maximilian Birkendorf (Neuwied Zoo, Germany) is the new monitoring person for Yellow-crested cockatoos (*Cacatua sulphurea*) aiming to establish *ex situ* populations for further subspecies. Max is aiding the collection of samples and measurements to identify subspecies and hybrids. (Note: subspecies *C. s. citrinocristata* is already managed as an EEP).

The Red-browed amazon (*Amazona rhodocorytha*) EEP was officially downgraded to a MON-P as there are not enough individuals within the EAZA community. The Parrot TAG hopes additional birds can be recruited for a future EEP. This task will be covered by Telma Araujo (Lisbon zoo, Portugal).

Both ESBs for Red-tailed black cockatoo (*Calyptorhynchus banksii*) and Carnaby's black cockatoo (*Zanda latirostris*) were downgraded to MON-P and are still being overseen by Bernd Marcordes (Cologne zoo, Germany).

The Thick-billed parrot (*Rhynchopsitta pachyrhyncha*) ESB was downgraded to a MON-P which now cooperates with

the AZA SSP and is coordinated by Colin Oulton from the Royal Zoological Society of Scotland (Scotland).

Nils Dijkgraaf (DierenPark Amersfoort, The Netherlands) replaced Raymond van der Meer as the EEP coordinator for the Red-crowned amazon (*Amazona viridigenalis*). Nils had already been managing the Studbook.

A MON-P for Blue-crowned hanging-parrot (*Loriculus galgulus*) was initiated. It is being coordinated by Gary Ward (Newquay zoo, UK) who gave an interesting presentation at our mid-year meeting in Vienna.

Emile Prins will support Tjerk ter Meulen (both at GaiaZoo, The Netherlands) with the management of the Sun parakeet (*Aratinga solstitialis*) MON-P.

Helena Vaidlová from Prague Zoo (Czech Republic) joined the Parrot TAG team as Veterinary Advisor.

ACHIEVEMENTS DURING THE YEAR

Disease screening was a major focus of the EAZA Parrot TAG in 2017. BPG for veterinary protocols are urgently needed and the IUCN has requested that these be drawn up for *in situ* Parrot releases and reintroduction programmes. Fortunately, the TAG has three Veterinary Advisors who will assist with this: Andrew Greenwood (International Zoo Veterinary Group), Michael Lierz (Giessen University) and Helena Vaidlová.

There were two presentations at the EAZA Annual Conference in Emmen highlighting the threats of diseases; one by Julia Stagegaard (Ree Park Safari, Denmark) on the risks of introducing confiscated Parrots to breeding programmes and the other by Helena Vaidlová on the main Parrot viruses. The TAG will continue to focus on veterinary issues in the future, developing protocols and standards for zoos and EEPs.

The BPG for Ecuadorian Amazons (*Amazona autumnalis lilacina*) by Becca Biddle (Chester zoo, UK) were translated into Spanish thanks to the support of the Latin American Zoo and Aquarium Association (ALPZA).

PUBLICATIONS

- o Molloy, S. and Bruslund, S. (2017) *Project Parrot*. Zooquaria 96: 16-19.
- o Stagegaard, J., Bruslund, S. and Lierz, M. (2017). *Could introducing confiscated parrots to zoological collections jeopardise conservation breeding programmes?* Bird Conservation International: 1-6.

Research on Sun parakeet (*Aratinga solstitialis*) is starting to create a viable *ex situ* population © Simon Bruslund



COLLABORATIONS

The Parrot TAG and Heidelberg University are conducting research on the determination of the subspecies of Yellow-crested cockatoos and Scarlet-breasted lorikeets (*Trichoglossus forsteni*) using genetic markers as well as on the relatedness of founders within the Citron-crested cockatoo (*Cacatua sulphurea citrinocristata*) EEP.

The TAG is fundraising with BirdLife and Manchester Metropolitan University for field research on Timneh Parrots (*Psittacus timneh*) in West Africa.

The Swift parrot (*Lathamus discolor*) MON-P is collaborating with the private breeder organisation GAV. Markus Domanegg (Vienna zoo, Austria), Sabrina Höft (Schwerin zoo, Germany) and Florian Schäfer (Erfurt Museum of Natural History, Germany) are assisting with setting up a Studbook to include both non-EAZA and EAZA birds.

A first joint meeting took place in Erfurt, Germany on 29 July with four EAZA institutions and ten members of GAV. The aim is to develop functional conditions for cooperation and BPG.

CONSERVATION AND RESEARCH

The TAG continued to collect genetic samples from Yellow-crested cockatoos for research into subspecies. William van Lint (EEO, The Netherlands) was responsible for investigating the status of the subspecies in EAZA and presented his findings at the mid-year meeting. The TAG also continued to collect samples from Citron-crested cockatoos to investigate relatedness of founders in the EEP.

The TAG initiated research into cockatoo nutrition in 2017 which is being led by the Parrot TAG Nutrition Advisor, Maja Damjanovic (Zagreb Zoo, Croatia). An informative

presentation on this research was given in Emmen and the distribution of a questionnaire has started.

Parrot TAG Research Advisor, Stuart Marsden (Manchester Metropolitan University, UK), provided feedback in Emmen about the ongoing research on Yellow-crested cockatoo status and breeding ecology on Sumba, Komodo and Rinca. Research on breeding ecology is challenged by difficulties in finding active nests. The population census of these islands is ongoing.

The TAG is aiming for a One Plan Approach for the *in situ* conservation and discussions with authorities in Indonesia and researchers around the world have been initiated.

Stuart Marsden also gave a presentation on the Timneh parrot and has put together a research project to address the lack of data on this threatened species.

Yveta Svobodova (Ostrava Zoo, Czech Republic) has made connections with Vinaceous-breasted amazon (*Amazona vinacea*) projects in Brazil. The EAZA population could contribute to future reintroduction efforts once it becomes viable.

Genetic material of Swift parrots in Europe could possibly be important for *in situ* conservation. The EAZA population is small and suitable birds need to be acquired from aviculturists; Fleming Nielsen (Copenhagen Zoo, Denmark) is investigating this.

The EAZA population of Sun parakeets is monitored by Tjerk ter Meulen. Unfortunately, there are issues with hybrids, disease and mutations. Emile Prins will start a PhD on the development of a viable *ex situ* population.

The Centre for Research and Conservation, Royal Zoological Society of Antwerp (Belgium) is working on genetic research on Great green macaws (*Ara ambiguus*) and Military macaws (*Ara militaris*). This may identify



Participants of the Swift parrot (*Lathamus discolor*) meeting in Erfurt in July 2017 © Jörg Asmus

additional individuals in zoos (Peter Galbusera and Philippe Helsen, Royal Zoological Society of Antwerp).

TOUCAN AND TURACO

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

TAG Vice Chair: Vacant

INTRODUCTION

The EAZA Toucan and Turaco TAG comprises a large number of bird groups covering eight avian orders and over 1,500 species. The TAG has broken the species into family groups and appointed eight sub-group leaders, in order to manage the work load. The family groups are turacos, cuckoos, frogmouths, hummingbirds, bee-eaters, rollers, barbets and toucans.

There are currently vacancies for three species monitors: Hartlaub's turaco (*Tauraco hartlaubi*), White-cheeked turaco (*Tauraco leucotis*) and three species of bee-eater; and a sub-group leader vacancy for Kingfishers.

BREEDING PROGRAMME DEVELOPMENTS

In 2017 sub-group leader for Turacos and ESB keeper for the Red crested turaco (*Tauraco erythrolophus*), Louise Peat from Cotswold Wildlife Park (UK) completed and submitted BPG to EAZA for approval. This is a significant and well researched document which will be a great resource for turaco management.

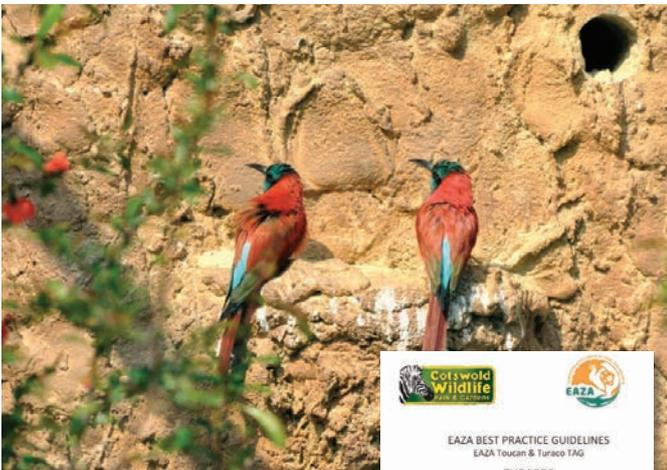
At the TAG meeting in Emmen in September a review of the RCP for Turaco species was discussed and a template for review was proposed by Louise Peat and Gavin Harrison (Waddesdon Manor Aviary, UK). This will be developed over the next 12 months.

ACHIEVEMENTS DURING THE YEAR

2017 saw a significant increase in breeding success for Toco toucan (*Ramphastos toco*) with three institutions successfully rearing young. The ESB is working well and the second breeding and transfer recommendations was due to be distributed to holders in February 2018.

Two monitored species were approved for up listing to ESB management – these were Red-billed toucan (*Ramphastos tucanus*) managed by Mary Kanterelou of Attica Zoological Park (Greece) and the Channel-billed toucan (*Ramphastos vitellinus*) managed by Dijana Beneta of Zagreb Zoo (Croatia). Thanks to William Van Lint from the EEO for

Northern carmine bee-eater (*Merops nubicus*) © Koln Zoo



Louise Peat's excellent "Best Practice Guidelines for Turacos" was submitted to EAZA for approval in 2017.



his support in getting these approved.

It was also agreed that these three Toucan Studbook populations could collaborate to improve institutional compliance with breeding recommendations.

Meetings were held at both the mid-year and EAZA Annual Conferences in Vienna and in Emmen. Presentations were given on bee-eater management; the hummingbird breeding centre in Walsrode; behavioural management and breeding success of Toco toucans at Rhenen and conserving tropical rainforest in Belize by Papiliorama (Switzerland). Subgroup leader and species reports were also given.

PUBLICATIONS

Three documents were uploaded to the TAG workspace: Roadrunner AZA guidelines; bee-eater guidelines and a research report on Great blue turaco (*Corythaëola cristata*) nutrition conducted at Vogelpark Avifauna (The Netherlands). BPG were completed for Turacos and submitted to EAZA for approval.

COLLABORATIONS

There is no current collaboration outside EAZA. The TAG Chair has contact with AZA TAG Chairs and will discuss the potential to develop a more collaborative approach to population management.

CONSERVATION AND RESEARCH

A presentation was given in Emmen on behalf of Papiliorama on their rainforest conservation project in Belize. This conservation project is a landscape-based project and supports many avian species including toucan species.

An opportunity for EAZA institutions to link to a research project regarding the predatory and social behaviour of the Chestnut-mandibled toucan (*Ramphastos swainsonii*) was circulated. The research project information can be found here: <https://www1.chester.ac.uk/postgraduate/biological-sciences-wildlife-behaviour-and-conservation-pathway>. Due to poor response from institutions, the Turaco mate aggression questionnaire circulated by Louise Peat will be re-sent to holders in 2018.

HORNBILL

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

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

INTRODUCTION

The mission of the EAZA Hornbill TAG is to:

- o coordinate breeding and management efforts for Hornbills within EAZA institutions, ensuring that these populations fulfil the conservation, education, research and exhibition roles that have been assigned to them
- o strive for the highest standards in welfare and professional management for hornbills living in EAZA zoos
- o establish priorities for conservation and research for species included in the Collection Plan
- o encourage and coordinate participation in *in situ* conservation activities
- o promote cooperation between EAZA Members and others with similar hornbill related missions.

BREEDING PROGRAMME DEVELOPMENTS

Michael Merker (Zoo Halle, Germany) replaced Daniel Roth (Skansen Foundation, Sweden) as new ESB keeper for the Von der Decken's hornbill (*Tockus deckeni*).

The Rhinoceros hornbill (*Buceros rhinoceros*) EEP managed by Laure Pelletier (ZooParc de Beauval, France) and the Great hornbill (*Buceros bicornis*) EEP managed by Joost Lammers were evaluated in 2017. Further research into the management and breeding of both *Buceros* species

Palawan hornbill (*Anthracoseros marche*) chick © Wroclaw Zoo



is crucial if we are to sustain them in the EAZA (and other zoo) region(s). Zlin Lesna Zoo (Czech Republic) hatched a Great hornbill in 2017, which sadly did not survive. But there is again hope that this species will be producing chicks with the framework of the EEP in the coming years.

Inter-regional cooperation continues and the Rhinoceros hornbill EEP will receive a female from Saitama Children's Zoo in Japan early 2018. Fortunately, there were also hatchings in Europe, as two chicks were successfully bred in Prague Zoo (Czech Republic) in 2017.

A RCP planning and review meeting has been scheduled by EAZA for 2019.

Paulo Figueiras of Lagos Zoo (Portugal) presented his first monitoring report for the Silvery-cheeked hornbill (*Bycanistes brevis*) at the EAZA Annual Conference in September 2017. The current status of this species in the

EAZA region is 28.24.3 in 25 collections. Only three zoos – Lagos, Attica and Kosice (Slovakia) - reported successful breeding of this attractive and sexually dimorphic species in 2017.

The Black-casqued hornbill (*Ceratogymna atrata*) continues to be monitored by Andreia Pinto (Parque Ornitológico de Lourosa, Portugal). The current population is 12.12.1 within EAZA zoos - plus at least another 8.8 birds in non-EAZA zoos. Successful breeding was achieved by Lourosa, Lagos, Tabernas (Parque Oasys, Spain) – all EAZA Members – and Paulton's Park, UK (non-EAZA). A zoo-bred pair was made available to Blackpool Zoo in 2018.

A breakthrough was made by Wroclaw Zoo (Poland) in 2017 with the first successful European zoo breeding of the Palawan hornbill (*Anthracoseros marche*). A single chick of this Vulnerable species fledged. Attica Zoological Park also bred this species for the second time, but sadly the two chicks died before fledging and the adult female did not survive. The previous breeding attempt in 2015 also resulted in a single dead chick.

ACHIEVEMENTS DURING THE YEAR

The TAG met once in 2017 during the EAZA Annual Conference. The special guests Dr Lucy Kemp and Nthabiseng Makgwele Monama of the Mabula Ground Hornbill Project updated the TAG on the important conservation work they are doing for this species.

Attica Zoological Park in collaboration with the TAG, as well as several Asian and African hornbill researchers/conservation groups, organized the International Hornbill Day on 17 September 2017. The event was dedicated to raise awareness on the conservation of these birds and to generate support for projects in Asia and southern Africa via fundraising activities. It is hoped that other zoos will join Attica in their efforts in the future years.

CONSERVATION AND RESEARCH

The Critically Endangered Sulu hornbills (*Anthracoseros montani*) continued to receive much attention in 2017. Various conservation related groups in and outside of the Philippines visited Tawi-Tawi to conduct surveys and to investigate possibilities to create awareness and offer protection to the remaining birds.

Continuous poaching and illegal trade of the casques continues to have a devastating impact on the potential long-term survival of the now Critically Endangered Helmeted hornbill (*Rhinoplax vigil*). The United Nations even

mentioned Hornbills in a resolution on illegal wildlife trade adopted on 11 September 2017. Nevertheless, the future of this magnificent species is not bright.

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). Schmiding Zoo (Austria) and Faruk Yalcin Zoo (Turkey) joined this programme and adopted their first nests in 2017.

PASSERIFORMES

TAG Chair: David Jeggo (Cologne Zoo, Cologne, Germany)

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

INTRODUCTION

The ongoing Songbird crisis in Southeast Asia and efforts to assist in fighting it continued to dominate the EAZA Passeriformes TAG's activities. These took a considerable step forward with the launch of EAZA's latest conservation campaign "Silent Forest". It aims to raise awareness and support for *in situ* measures directed at mitigating the severe impact of the cage bird trade on the status of an increasing number of Southeast Asian songbirds. For more background information please check the campaign website (www.silentforest.eu).

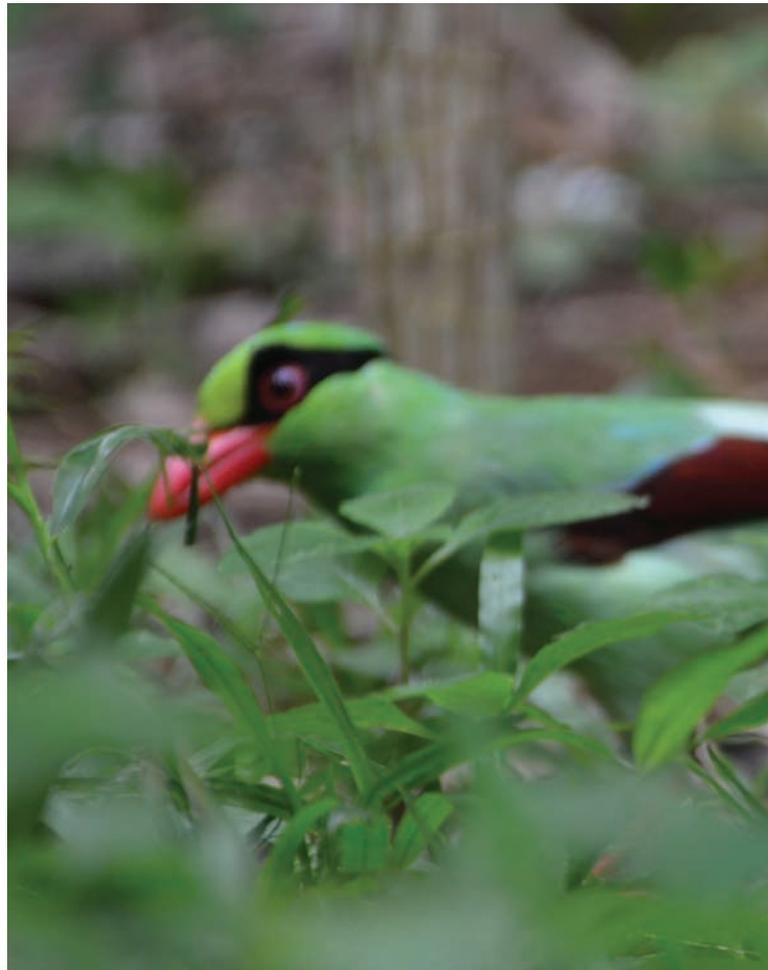
BREEDING PROGRAMME DEVELOPMENTS

No new programmes were approved nor were there any changes in the coordination of the existing programmes during 2017.

An important step forward, however, was the production of a "new style" RCP for Passerines, which had the distinction of being the last RCP to receive approval in the current format before EAZA adopted its new Population Management structure. This RCP was only made possible through the heroic effort of Simon Bruslund (Zoo Heidelberg, Germany) who single-handedly assessed all 7,000 species during its compilation and produced a truly comprehensive publication.

Excellent BPG for the Sumatran laughingthrush (*Garrulax bicolor*) were produced by Andrew Owen (Chester Zoo, UK), the species EEP coordinator. To date, this species has proved difficult to manage successfully in EAZA institutions and these BPG should be most valuable to the participants in improving results, particularly should the programme

Javan green magpies (*Cissa thalassina*) © Andrew Owen, Chester Zoo



expand to more and more institutions.

BPGs are in preparation for a number of other species and the TAG aims to have at least five more published in 2018.

The Global Species Management Plan (GSMP) for the Blue-crowned laughingthrush (*Garrulax courtoisii*) held its master planning meeting for the year in October at Cologne Zoo (Germany). The benefits of managing this species across three regions can be seen in the resulting document as the GSMP works towards a genetically and demographically balanced global population.

ACHIEVEMENTS DURING THE YEAR

The major achievement of the year was the launch of the Silent Forest campaign. This campaign would not have been possible without the support of Liberec Zoo (Czech Republic) and its main architects, Tomas Ouhel (Liberec Zoo, Czech Republic) and Simon Bruslund, who worked tirelessly, ably assisted by the Campaign Committee, to get ready for the launch at EAZA's Annual Conference.



The funds raised will go directly to a number of *in situ* conservation projects aimed at aiding the survival of some of the most at-risk songbirds in Southeast Asia, *i.e.* very close to extinction in the wild. For many species, there is an urgent need to establish secure population management programmes, as it is unlikely other measures implemented can be effective in time to prevent the last few individuals disappearing from the wild.

PUBLICATIONS

In addition to the RCP and BPG mentioned previously, several publications have been produced as part of the Silent Forest campaign. There are available on the News page of the website <https://www.silentforest.eu/news/>.

COLLABORATIONS

The collaborations of the TAG are almost exclusively through its sub-group the Threatened Asian Songbird Alliance (TASA). From the small beginning of this sub-group Dr Nigel Collar, BirdLife International, has been an

enthusiastic, committed and most valuable member. More recently the sub-group has welcomed Professor Stuart Marsden, Manchester Metropolitan University. Among other things, Nigel and Stuart add rigor and capacity to the field aspects of the sub-group. TRAFFIC, Wildlife Reserves Singapore (WRS), the IUCN SSC, and the Asian Species Action Partnership (ASAP) also have a close association with TASA.

In February, several TAG members attended the Second Asian Songbird Crisis Summit hosted by WRS. The first Summit, held in 2015, recommended that an IUCN SSC SG should be established to help tackle this growing crisis and this gained official sanction from IUCN in May 2017. The resulting IUCN SSC Asian Songbird Trade SG has a close affiliation with TASA.

A workshop held at Taman Safari, Bali, in October 2015 paved the way for the formation of a Bali myna (*Leucopsar rothschildi*) International Advisory Board, the aim of which would be to assist in establishing a viable free-living population of this species. The Bali myna EEP, coordinated by Bernd Marcordes (Cologne Zoo, Germany), is engaged with the Advisory Board along with Indonesian colleagues and the AZA SSP.

CONSERVATION AND RESEARCH

The TAG continues to support several conservation projects.

Many EAZA institutions provided funds to enable the construction of a new in-country conservation breeding centre. This is located at Taman Safari's park, at Prigen, Java, as part of their conservation arm, the Konservasi Alam Satwa Indonesia (KASI) Foundation. This excellent facility will provide urgently required accommodation for many threatened Indonesian songbirds and provide a vital lifeline to their survival.

Taman Safari is also undertaking a release of the Critically Endangered Black-winged myna (*Acridotheres melanopterus*) at their Safari Park near Bogor, Java. Funds to assist with this have been provided by Cologne Zoo and the Zoological Society for the Conservation of Species and Populations in particular.

TAG members attended two meetings of the Bali Myna International Advisory Board, both held in Indonesia and hosted by Tony Samampau, Taman Safari. They took place in February and November, in Bogor and Bali, respectively. The outcome of these meetings was a series of recommendations to assist with restoring a healthy free-

Sumatran laughingthrush (*Garrulax bicolor*) © Andrew Owen, Chester Zoo



flying population in Bali. After the second meeting Simon Bruslund and the TAG Chair accompanied Indonesian colleagues to the Bali Barat National Park to visit several of the Bali myna release sites and meet with representatives of two villages bordering the National Park. This was particularly valuable as community engagement is likely to play a key role in the long-term viability of Bali mynas in the National Park.

Among other activities, Chester Zoo continued to be a major supporter of the conservation work in Java for the Critically Endangered Javan green magpie (*Cissa thalassina*) and other species, while Liberec and Heidelberg zoos remained engaged in the West Sumatran Islands, especially working with Nias hill mynas (*Gracula robusta*) and White-rumped shamas (*Kittacincla malabarica*).

MONOTREME AND MARSUPIAL

TAG Chair: Flemming Nielsen (Copenhagen Zoo, Copenhagen, Denmark)
TAG Vice Chairs: Udo Ganslosser (Greifswald and Jena University, Greifswald, Germany) and Achim Winkler (Duisburg Zoo, Duisburg, Germany)

INTRODUCTION

In 2017, the EAZA Monotreme and Marsupial TAG started the first steps towards a new TAG structure with a change of TAG Chairs. A new broader group of programme coordinators took over many of the Macropod programmes making the core group of TAG members very broad and competent. The upcoming work relative to the “new style” RCP created in line with the new EAZA population management structure is especially worth mentioning and will require a lot of effort. Luckily, we

still have Udo Ganslosser (Greifswald and Jena University, Germany) with us to drive the work of the RCP into action. Regarding the cooperation with our counterparts in the Zoo and Aquarium Association (ZAA) and the Australian authorities, we will have to build on the work already done by EAZA EEO to get new blood for many of our programme species. There is also the connection to the AZA as a strong partner in boosting some of the species.

BREEDING PROGRAMME DEVELOPMENTS

Following the discontinued cooperation with Safari Zoo (UK) with regards to the Macropod ESBs, changes were made in the programmes. The Eastern grey kangaroo ESB (*Macropus giganteus*) was taken over by Zoltan Molnar (Budapest Zoo, Hungary). The Western grey kangaroo ESB (*Macropus fuliginosus*) was downgraded to monitor. The Red kangaroo ESB (*Macropus rufus*) was taken over by Fenrenc Boda (Sóstó Zoo, Hungary). The Agile wallaby ESB (*Macropus agilis*) is planned to be discontinued. The Tammar wallaby ESB (*Macropus eugenii*) was taken over by Katharina Herrmann (EEO, The Netherlands) and the Swamp wallaby ESB (*Wallabia bicolor*) was taken over by Matthias Papies (Royal Zoological Society of Antwerp, Belgium).

The Wombat EEP (*Vombatus ursinus*) and the Koala EEP (*Phascolarctos cinereus*) both reported that even with promising births happening last year, it is still very important to work on new imports from Australia to meet the growing popularity of the two species within the EAZA community. The same goes for the Tasmanian devil (*Sarcophilus harrisii*) EEP which has a very high number of institutions wanting to hold this species. This EEP was able to import two new males from Australia during 2017 – to provide new blood to the programme.

The Kowari ESB (*Dasyercus byrnei*) will stay in Poznan Zoo (Poland) with a new coordinator (still to be appointed).

ACHIEVEMENTS DURING THE YEAR

The TAG saw the first non-breeding Tasmanian devil sent to another holder within the EAZA. After the approval of the Australian programme, Duisburg Zoo (Germany); Planckendael Zoo and Pairi Daiza Zoo (both in Belgium) got two devils each for exhibit only. Later in 2017, two young males arrived in Copenhagen Zoo from Devils Ark (Australia), this is much needed new blood.

Tasmanian Common Wombat (*Vombatus ursinus tasmaniensis*) joey peeking out © Copenhagen Zoo



Following the import from Australia of two female Common wombats to Duisburg Zoo in 2015, the EEP decided in 2017 to move a lone male from Planckendael to breed with these females.

PUBLICATIONS

Hansen, M.J. *et al.* (2017). Occurrence of Pasteurellaceae bacteria in the oral cavity of selected marsupial species. *Journal of Zoo and Wildlife Medicine* 48 (4):1215-1218.

COLLABORATIONS

Collaboration with other regions - especially Australasia - is of high importance for the future development of the TAG breeding programmes and their sustainability. During 2017 the EEP coordinators made sure to keep contact with their peers in ZAA and AZA for cooperation between the regional



Tasmanian Devil (*Sarcophilus harrisii*) in the snow © Copenhagen Zoo

programmes.

CONSERVATION AND RESEARCH

European koala holders each pay an annual fee to the San Diego Koala Conservation Programme - Pairi Daiza Zoo and Zurich Zoo (Switzerland) being the only exceptions, since they received their animals directly from Australia.

Goodfellow's tree kangaroo (*Dendrolagus goodfellowi*) - GSMP supports two *in situ* projects in Papua New Guinea:

- o the Tenkile Conservation Alliance (TCA www.tenkile.com) focusing on three species: the Tenkile (*Dendrolagus scottae*), the Golden-mantled tree kangaroo (*Dendrolagus pulcherrimus*) and the Grizzled tree kangaroo (*Dendrolagus inustus*)

- o the Tree Kangaroo Conservation Programme (TKCP: www.zoo.org/tkcp) initiated by Woodland Park Zoo (USA) focusing on the Huon tree kangaroo (*Dendrolagus matschiei*).

PROSIMIAN

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

TAG Vice Chair: Delphine Roulet (institutional support by Cotswold Wildlife Park, Burford, United Kingdom)

INTRODUCTION

Over the course of a year, a TAG has to deal with "routine work" as its members answer requests from programme coordinators and programme participants as well as from zoos and non-EAZA organisations for *in situ* conservation actions. Amongst those requests are handling formalities and providing support when EEPs get transferred to new coordinators or institutions, facilitating cooperation with non-EAZA institutions or leading the process of programme evaluations. Nowadays communications related to *ex situ* and *in situ* animal management and conservation activities is both demanding and time-consuming and adds complexity of the development of the TAG. The TAG Chair is honouring that most, if not all, EEPs and ESBs are managed in an appropriate and reliable way so that the TAG activity can "reach out beyond".

BREEDING PROGRAMME DEVELOPMENTS

The EAZA Prosimian TAG Chairs, EEP coordinators for the Black and white ruffed lemur (*Varecia variegata*) and Belted ruffed lemur (*Varecia variegata subcincta*) and Population

Blue-eyed black lemur (*Eulemur flavifrons*) born in Zoo La Palmyre
 © Florence Perroux



Male Mongoose lemur (*Eulemur mongoz*) from EEP meets female in Lemur's Park, Madagascar © Delphine Roulet



Management Advisor from EAZA met for a “future direction workshop” regarding both species. As a result, both EEPs were merged into one “Black and white ruffed lemurs” allowing a better coordination with respect to available space in EAZA zoos. While waiting for results from ongoing genetic research, both taxa will be handled as separate management units.

The TAG’s approach to the expansion of AZA’s Coquerel’s sifaka (*Propithecus coquereli*) SSP to include EAZA zoos was meant to ensure a sufficient number of animals for the prospering *ex situ* population of this lemur species which is now experiencing space-capacity limits within AZA. However, as this delicate species requires specialised husbandry and demanding care, individual zoos interested in receiving Coquerel’s sifakas have to undergo an application and preparation process. The TAG acts as facilitator and feels responsible for the successful importation of Coquerel’s sifakas from the SSP and to establishment of an *ex situ* population in EAZA.

The whole process came a step closer via defining the participating zoos and supporting the preparation process, with an import of SSP animals envisaged to take place in 2019.

From the established EEPs, births from all the Critically Endangered species Mongoose lemur (*Eulemur mongoz*) in Ostrava Zoo (Czech Republic), Blue-eyed black lemur (*Eulemur flavifrons*) in Mulhouse, la Palmyre (both France) and Ostrava zoos and White-collared lemur (*Eulemur cinereiceps*) in Linton Zoo (UK) are notable. It must be said that these outstanding births are all the result of intensive programme management and strong commitment of the participating zoos involved.

ACHIEVEMENTS DURING THE YEAR

The TAG and Delphine Roulet in person are very much engaged in establishing and maintaining links with *ex situ* lemur keeping institutions (zoo-like facilities open to the public; mostly privately owned) in Madagascar. This is in regard with transferring knowledge, improving husbandry and animal welfare there as well as including the Prosimians kept there in breeding programmes by involving and coaching these institutions to cooperate with the basic guidelines for *ex situ* population management. These activities are planned and organized under the auspices of the Ministry for Environment, Ecology, Sea and Forest of Madagascar. Cooperation of this kind can be challenging and needs ongoing and long-lasting support to ensure reaching the set goals.

Over the year the transfer of a male Mongoose lemur (*Eulemur mongoz*) from the EEP to Lemur’s Park took place; this male was paired up with single female there making a new pair of this Critically Endangered species.

A pair of Red ruffed lemurs (*Varecia rubra*) was transferred from EAZA zoos to Vakona Lodge to establish a second breeding pair *ex situ* in Madagascar beside the animals already established in Lemuria Land on Nosy Bé.

With practical support of volunteers and donations from European zoos, husbandry and colony-management practice was improved in several institutions. Registration of lemurs kept in several facilities was enabled by the “transponder-project” through the donation of technical equipment. Additionally, tools for the improvement of maintenance practices were supplied.

PUBLICATIONS

Four editions of “EAZA Prosimian TAG Newsletter” were circulated over the year to TAG members and a growing

list of interested persons and groups. TAG members are encouraged to spread this news source further – on *ex situ* as well as *in situ* developments and activities - to all levels of parties involved in management, conservation and research of Prosimians. For contribution submission or to be included on the mailing list please contact Florence Perroux (florence.p@zoo-palmyre.fr) or Achim Johann (ajohann@naturzoo.de).

CONSERVATION AND RESEARCH

The TAG encourages to support *in situ* conservation projects as listed in our “*In situ* conservation plan”. For more details contact Delphine Roulet (droulet.primatologue@gmail.com) or the coordinators of the different EEPs. Also, the Newsletter is a good reference to our ongoing *in situ* projects.

CALLITRICHID

TAG Chair: Eric Bairrão Ruivo (Beauval Zoo, St Aignan, France)

TAG Vice Chairs: Dominic Wormell (Jersey Zoo, Jersey, Channel Islands) and Miranda Stevenson (Bristol Zoo, Bristol, United Kingdom)

INTRODUCTION

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

In 2017 two meetings were held, a mid-year meeting hosted by Royal Zoological Society of Antwerp (Belgium) in March and the other at the EAZA Annual Conference in Emmen in September. The minutes of all meetings, along with all TAG reports, Studbooks and annual reports, are on the TAG page of the EAZA website. A major focus for the year was promoting and increasing support for field conservation.

PROGRAMME DEVELOPMENTS

There was one programme change. Arun Idoe of Apenheul Primate Park (The Netherlands) took over the Emperor tamarin (*Saguinus imperator subgriseescens*) Studbook from Sónia Matias - many thanks to Sónia for her excellent work on this programme, and welcome Arun. Christoph Schwitzer, through Bristol Zoo (UK), produced a survey on Common marmosets (*Callithrix jacchus*) in EAZA collections

to assist the goal of phasing the species out from EAZA collections and provide space for more threatened species. Peter Galbusera (Royal Zoological Society of Antwerp) produced a spreadsheet for coordinators, comparing the species with breeding recommendations across the different collections. This should ensure a more even distribution of recommendations across collections. An updated annual returns sheet was also produced, containing a more detailed section on contraception; information to feedback to EAZA Group on Zoo Animal Contraception. The Lion tamarin group held meetings in Antwerp and Emmen. An extremely useful workshop for Studbook keepers, run by Kristin Leus (Copenhagen Zoo, Denmark) and Peter Galbusera, was held after the mid-year meeting in Antwerp.

An update of the Callitrichid BPG was produced and is on the public area of the EAZA website. The updated sections were: nutrition, veterinary, contraception and ongoing and planned research. Sections such as security and use in public demonstrations were added. The next update is scheduled for 2019. The first video on Callitrichid best practice was added to the Callitrichid TAG webpage, with more to follow.

ACHIEVEMENTS DURING THE YEAR

Aude Haelewyn-Desmoulin (Parc ZOO du Reynou, France) completed a space survey on behalf of the TAG. Though extremely useful, the response rate was disappointing. The TAG made positive efforts to increase its conservation support. Conservation posters were produced and promoted at the Emmen meeting and this will continue in 2018. The TAG supported Associação Mico-Leão Dourado (ALMD or Golden Lion Tamarin Association) with petition signatures and promotion, to ensure that the vital road bridges over the BR-101 highway at Poço das Antas (Brazil) are constructed. Building of these structures completed with trees, should begin in April 2018.

PUBLICATIONS

- o The TAG e-newsletter was produced regularly, with six editions. It contains updates on *ex situ* programmes, research and field project developments.
- o The TAG Facebook page continued to thrive and increase its membership.
- o Francis Cabana's (Wildlife Reserves Singapore, Singapore) work on Marmoset Wasting Syndrome- originally a TAG research project - was published in Zoo Biology:

Cabana, F. *et al.* (2018). *Identification of possible nutritional and stress risk factors in the development of marmoset wasting syndrome*. *Zoo Biology*. 10.1002/zoo.21398.

- o Peter Galbusera continued to produce listings of relevant publications, available on the webpage under Research/ bibliographies.
- o Ayala-Burbano, P.A. *et al.* (2017). *Genetic assessment for the endangered Black lion tamarin *Leontopithecus chrysopygus* (Mikan, 1823), Callitrichidae, Primates*. *American Journal of Primatology* 79: 1-13.
- o Bryan, K. *et al.* (2017). *The impact of exhibit type on behaviour of caged and free-ranging tamarins*. *Applied Animal Behaviour Science* 193:77-86.
- o De Vleeschouwer, K. M. and Oliveira, L. C. (2017). *Report on the presence of a group of Golden-headed lion tamarins (*Leontopithecus chrysomelas*), an endangered primate species, in a rubber plantation in southern Bahia, Brazil*. *Primate Biology* 4(6): 1–67.
- o Le Mené, H. (2017). *Activity pattern and hunting behaviour of a free-ranging group of Emperor tamarins (*Saguinus imperator*) at Jersey Zoo*. MSc internship report Durrell Wildlife Conservation Trust (DWCT) and Université de Rennes.
- o Steinbrecher, F. (2016). *Factors influencing the vigilance, vocalization and scent marking behaviour of captive pairs of Pied tamarins (*Saguinus bicolor*)*. DWCT and Anglia Ruskin

- University MSc Thesis.
- o Strike, T. B. and Feltrer, Y. (2017). *Long-term management of type 2 diabetes mellitus in Callitrichids with oral anti-hyperglycaemic medication*. *International Zoo Yearbook* 51: 258–268.
- o Wormell D. and Price E. (2016). *Effect of dietary changes on the health of captive Geoffroy's marmosets (*Callithrix geoffroyi*)*. *Sollitaire* 27: 22–24.

COLLABORATIONS

Inter-regional collaboration continued. Main successes were the Black lion tamarin (*Leontopithecus chrysopygus*) importation (2.3 animals from São Paulo Zoo and Centro de Primatologia do Rio de Janeiro (Brazil) to Jersey) and the completion of the Cotton-top tamarin (*Saguinus oedipus oedipus*) exports to New Zealand (now two pairs in Auckland and Wellington Zoos). Other species moves are planned. Preparations for obtaining Cotton-top tamarin samples for microsatellite research on genetic diversity progressed well with several suitable preserved animals found in museums. The TAG has excellent relations with the Latin American Zoo and Aquarium Association (ALPZA) and other South American organisations.

Of particular importance, is the support given by the TAG through workshops in Colombia and Brazil. This year in December an EAZA group - Dominic Wormell, Gale



Delegates at the Brazilian workshop in São Paulo in December picture © Dayse Campse

The Buffy-tufted marmoset (*Callithrix aurita*), in the field © Diogo Lagroteria



Glendewar, Tim Wright (Jersey Zoo, Channel Islands), Nic Dunn (Shaldon Wildlife Trust, UK) and Warner Jens (Apenheul Primate Park) - went to Brazil to assist in running a workshop in Gaurulhos Zoo, São Paulo. Forty participants took part in the five-day course which consisted of: lectures, practical sessions, action planning and field trips. Field trips went to see Buffy-tufted marmoset (*Callithrix aurita*) in a remnant forest patch and Black lion tamarin in Morro do Diabolo State Park. The main resulting actions are: institutional cooperation; problems of confiscated and surplus animals; interchanges of animal in captive programmes; and improving communication between the participating institutions.

CONSERVATION AND RESEARCH

Peter Galbusera continued to coordinate updating the TAG with information on research publications and scientific advances on Callitrichids. The TAG approved and supported several projects, especially “mothers curse”, Antwerp, investigating genes that are transmitted via one parent; “bridge structures”, University of Oregon, investigating the best road crossing structures for primates; “sex bias in mammals”, University of Odense, determining sex biases at birth; the influence of social group composition on female reproductive strategies, University of Durham; factors determining group stability in Golden-headed lion tamarins (*Leontopithecus chrysomelas*) in human care, Antwerp; work on the possible influence of the sex of littermates on health and fitness, University of Harvard; and arbovirus prevalence in primates in Brazilian zoos, BioBrasil/Centre for Research and Conservation Antwerp.

The TAG currently supports field conservation of Cotton-top and Silvery-brown tamarins (*Saguinus leucopus*) in

Colombia; and Golden lion tamarin (*Leontopithecus rosalia*), Black lion tamarin, Golden-headed lion tamarin, Pied tamarin and Buffy-tufted marmoset, in Brazil.

The issue of how to increase support from EAZA collections for these vital conservation programmes was highlighted as a major action. To this end, posters were produced and brought to the EAZA Annual Conference in Emmen. The TAG had a one-day-stall promoting conservation projects, this also raised funds for Proyecto Titi. Many zoos held species days: notably for the Cotton-top, Golden lion and Headed tamarins.

There is only space to provide a little information on some projects, full details are on the webpage.

S. oedipus: further land was purchased in San Juan de Nepomuceno and planting of tree corridors linking forest fragments progressed. *S. leucopus*: an additional piece of land within Selva Florencia is being purchased and donated to the park. *L. chrysopygus*: GPS collars have been fitted to some animals and research on seed dispersal continues. *S. bicolor*: the National Action Plan is being carried out, a major feature being the connection of urban forest fragments.

LARGER NEW WORLD MONKEY

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

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

INTRODUCTION

The year 2017 was a busy year for the EAZA Larger New World Monkey (LNWM) TAG. Most coordinators published their Studbooks, made their breeding or transfer recommendations and some work on BPG was started. To facilitate requests from (new) holders, procedures for the transfer of animals to non-EAZA zoos were compiled. Finally, we made a great step forward by publishing the new RCP.

BREEDING PROGRAMME DEVELOPMENTS

In 2017 we had to evaluate the EEPs for the Yellow-breasted capuchin monkey (*Sapajus xanthosternos*), the Red-faced spider monkey (*Ateles paniscus*), the Red titi monkey (*Callicebus (Plecturocebus) cupreus*), and the Variegated spider monkey (*Ateles hybridus*). We have not yet received the final evaluation results for the first two EEPs; the Red titi monkey EEP was rated as good-sufficient.

Holders are very satisfied with the programme and the coordinator Darren Webster (Blackpool Zoo, UK) is working on adding more historical data and genetic analysis, to further improve the management of this population. The Variegated spider monkey EEP was not rated that well, but we have confidence that this will change; it has already been very much improved.

The evaluations for the Woolly monkeys (*Lagothrix lagotricha*) and Common squirrel monkeys (*Saimiri sciureus*) were also planned for 2017, but as the first species has very few holders and the programme will not be continued (see below), we decided that an evaluation would be a waste of time. The Common squirrel monkey EEP had a new coordinator appointed in 2016, and we judged it to be too early for an evaluation.

Although the Black-capped squirrel monkey (*Saimiri boliviensis*) EEP works closely with Australian colleagues, most other contacts with other regions are restricted to discussions with the AZA region about Spider monkeys. The AZA population of variegated spider monkey had dropped to only four animals, with no viable breeding female. It was decided to transfer one of the remaining males to Europe, and a second might follow in 2018. Two other (wild caught) male Variegated spider monkeys were sourced in Curaçao Zoo and we are working on transferring these to the EAZA region. The EAZA population of this Critically Endangered species is small with a relatively small genetic diversity and if these males breed they will be a very valuable contribution to the future of the EAZA population.

Some programmes are still struggling with a (male) surplus, and breeding restrictions are necessary to prevent an uncontrolled development of the population.

Benoit Quintard (*S. xanthosternos* EEP coordinator) and Tony Souvignet from Mulhouse Zoo, France, have conducted a survey to collect data for the Capuchin BPG that should be finished in 2018. As BPGs are still missing for most other programmes, and we know that it is a time-consuming process, we published husbandry sheets for the EEP species that serve as a guidance for zoos keeping or planning to keep LNWM. These are available on the EAZA workspace and can be distributed by the coordinators.

ACHIEVEMENTS DURING THE YEAR

A Larger New World Monkey TAG mid-year meeting was kindly hosted in April by Basel Zoo. Most programme coordinators were present and we had very fruitful discussions about population management, BPG, the

White-bellied spider monkey (*Ateles hybridus*) © Jan Vermeer



RCP process and many other subjects. Another meeting was held during the EAZA Annual Conference in Emmen. An audience of 125 persons heard presentations on the breeding programmes (Adrian Baumeyer), the Living Links Centre in Edinburgh (Donald Gow), contraception of LNWMs (Veronica Cowl) and the BPG of capuchins (Benoit Quintard). The Chair, Jan Vermeer, reported about other developments of the TAG, conservation programmes and the new RCP. It was great to have such a large and interested audience.

PUBLICATIONS

As the old RCP was outdated, it was time to compile a new RCP, based on the conservation status in the wild, the current situation of captive LNWM in EAZA and other regions, and the space available in zoos. A total of 152 taxa were assessed, resulting in the recommendation to manage 12 (sub)species in an EEP and to monitor the populations of several other taxa, some of them with the

White-faced saki monkey (*Pithecia pithecia*) © Jan Vermeer



goal to phase them out. A few other species, currently not present in EAZA zoos, were earmarked as potentially interesting species for future managed programmes, if animals would become available and collaboration with the range countries would be possible. The RCP shows how important it is to stop breeding with non-recommended capuchin and spider monkeys, as space is needed for growth of the recommended species, to make their populations viable.

Not all coordinators published an updated Studbook, which is disappointing, but we hope that this will be better in 2018.

COLLABORATIONS

Ties with other regions (AZA, South America and the Zoo and Aquarium Association) will also be further reinforced in 2018, to facilitate joint management for certain species. As LNWM are good animals to keep in mixed species exhibits, we plan to conduct a survey on mixed species exhibits. The

results will help to create mixed species exhibits guidelines for LNWM.

CONSERVATION AND RESEARCH

The decision was made to start compiling information sheets of conservation projects that are recommended by the TAG. Many species of LNWM are threatened and zoos can and should be more involved in their conservation.

OLD WORLD MONKEY

TAG Chair: Neil Bemment (Barcelona Zoo, Barcelona, Spain)

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

INTRODUCTION

The aim of this TAG is “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 initiatives”.

2017 was the year of a big change for the EAZA Old World Monkey (OWM) TAG structure as Neil Bemment had to step down as TAG Chair; Neil had held this position from the beginning of this TAG, therefore the TAG would like to thank him once again for the enormous amount of energy he put into it and for bringing it to the point it is now. Since Summer 2017 Tjerk ter Meulen (GaiaZOO, Kerkrade, the Netherlands) took over the role of TAG Chair. To help him oversee the work, the TAG organised itself in diverse sub-groups instead of appointing a new Vice Chair. The following sub-group leaders were appointed: Guenons - Matt Hartley (Twycross zoo, UK), Mangabey, Drill and Mandrill - Andrea Dempsey (West African Primate Conservation Action (WAPCA)/Heidelberg Zoo, Germany), Macaques - Holly Farmer (Painpton Zoo Environmental Park, UK), and Colobines - Fabian Krausse (Hannover Zoo, Germany). The Baboon sub-group is still in need of a sub-group leader. How long this structure will continue is not known yet. For now, it seems like the best practical solution for the TAG to achieve its aims. The TAG consists of 26 programmes, has not grown in the last year, and has three Conservation Advisors appointed: Andrea Dempsey, Sian Waters (Barbary Macaque Awareness and Conservation

(BMAC) director, Morocco) and Sandra Reichler (Heidelberg Zoo, Germany).

BREEDING PROGRAMME DEVELOPMENTS

The TAG worked on finalising the outstanding EEP evaluations and expects to complete this task before the end of 2018. In addition to having the EEPs evaluated, it was time to evaluate the TAG. The outcome of the TAG evaluation provides the TAG with the opportunity to further improve the functioning of the TAG.

For the Guinea baboon (*Papio papio*) EEP there is a new coordinator after Delphine Rouillet left Paris Zoo. We thank Delphine for the time she has put in this programme and welcome Luca Morino (Paris Zoo, France). For the Northern talapoin monkey (*Miopithecus ogouensis*) ESB we also have a new coordinator in the person of Jesus Recuero (Bioparc Fuengirola, Spain) because Miguel Caseras left Fuengirola to start in Frankfurt zoo (Germany). The Moustached monkey (*Cercopithecus cephus*) ESB will stay in Beauval zoo (France) but with a new coordinator: Laetitia Latorre.

The Barbary macaque (*Macaca sylvanus*) ESB has been upgraded to an EEP and has changed coordinator; we thank Sian Waters for the coordination of the ESB during the last 10 years and Tjerk ter Meulen is now the new coordinator.

In August, the LTMP for the Barbary macaque was scheduled and the report can be found on the OWM TAG work space. You can also find here all Studbooks and Annual Reports which were produced in 2017 (including the first monitoring report for the Hamadryas baboons (*Papio hamadryas*) published by Emile Prins (GaiaZOO, The Netherlands).

ACHIEVEMENTS DURING THE YEAR

The TAG worked further to share experiences of how to deal with surplus animals. Some populations grow quickly which is needed for the demographics of the population, but it is not always possible to find enough EAZA Members and/or partners to collaborate with. In the future, being aware of the holders' possibilities and inquiring about their needs and wishes will help to manage the populations in the right way.

PUBLICATIONS

- o Waters, S. et al. (2017) *Brief Communication: Dogs Disrupting Wildlife: Domestic Dogs Harass and Kill Barbary Macaques in Bouhachem Forest, Northern Morocco*. African Primates. 12: 55-58.

Barbary macaque (*Macaca sylvanus*) © GaiaZOO



Guinea baboon (*Papio papio*) © Alex Sliwa



- o Bergin, D., Atoussi, S. and Waters, S. (2017). *Online trade of Barbary macaques Macaca sylvanus in Algeria and Morocco*. Biodiversity and Conservation. 27: 531.
- o International Studbook for the Black-crested mangabeys by De Visser, M. (2017). It analyzes the captive populations of Black crested and Grey-cheeked mangabeys (*Lophocebus aterrimus* and *Lophocebus albigena*), as well as the breeding success, longevity, juvenile mortality and offspring sex ratio.
- o Studbook for Gelada baboons by Palagi, E., Zuffi, M.A.L. and Norscia I. (2016). *Geladas to understand humans, herps to understand their environment: a long-term project on the Ethiopian highlands*.

COLLABORATIONS

In August, the (new) TAG Chair was present at the AZA Old World Monkey husbandry workshop organized in Columbus Zoo (Ohio, USA). He presented the current RCP overview and several experiences were shared in the benefit of several species on both sides of the ocean.

CONSERVATION AND RESEARCH

During the EAZA Annual Conference in Emmen; representatives of WAPCA and BMAC were there to present the work they can do thanks to the support of EAZA Members. There was a close bond and we also had a good meeting with the Pan African Sanctuary Alliance (PASA) Director. The TAG and PASA are now working together on a survey to learn more about the use of contraception in PASA institutions.

GIBBON

TAG Chair: Brice Lefaux (Mulhouse Zoo, Mulhouse, France)

TAG Vice Chair: Matthew Ford (Howletts Wild Animal Park, Canterbury, United Kingdom)

INTRODUCTION

The EAZA Gibbon TAG is managing eight species: the Siamang (*Symphalangus syndactylus*), three species of Crested gibbons (*Nomascus siki*, *N. leucogenys* and *N. gabriellae*) and four species of *Hylobates* (*Hylobates moloch*, *H. agilis*, *H. pileatus* and *H. lar*). All of these South-East Asian species are listed as Endangered on the IUCN Red list and threatened by deforestation and poaching.

The TAG has had a very productive year. We produced the first EAZA Gibbon RCP, held a workshop on the BPG and started a Facebook page dedicated to EAZA Gibbon news. The first official logo was also created to help promote the TAG.

In 2017, Charlotte MacDonald (Royal Zoological Society of Scotland, Scotland) resigned from the Chair position. Brice Lefaux and Matthew Ford have been appointed as new Chair and Vice Chair, respectively.

BREEDING PROGRAMME DEVELOPMENTS

The third Gibbon TAG mid-year meeting was hosted by Mulhouse Zoo (France) in March 2017 over a two-day period. It was dedicated to reviewing the BPG. The eight

participants discussed and reviewed the existing draft and created a new draft using the official EAZA template. The TAG discussed each category within the BPG and through experience and evidence were able to highlight areas that needed extra work. The main areas needing additional development were welfare, training and enrichment. These were seen as vital for housing any Gibbon species. Feeding, nutrition and health concerns were also discussed and will be worked on in the future. The TAG hopes to produce the BPG in 2018.

Within Twycross Zoo (UK), Tony Dobbs took over the position of EEP coordinator for Siamang from Zak Showel. Since August, Tony has already been very proactive: he organised a Species Committee and continued the challenging management of this big European population.

Job Stumpel (Wildlands Adventure Zoo Emmen, The Netherlands), coordinator of the Lar gibbon EEP (*Hylobates lar*), participated and produced the LTMP for the Lar gibbon with the help of the population biologist team at the EEO. It is accessible in the Gibbon TAG section of the EAZA website.

ACHIEVEMENTS DURING THE YEAR

At the end of 2017, the TAG produced the first RCP for Gibbons as a result of a four-year process involving discussion, workshops and informal communication. The RCP has now been approved by the EEP Committee and distributed to holders. It can be downloaded on the Gibbon TAG section of the EAZA website.

One important result of this plan was to stop the management of two non-viable and very small populations: the Southern white-cheeked gibbon (*Nomascus siki*) and the Agile gibbon (*Hylobates agilis*).

The six remaining EEP captive populations are larger in comparison to other zoos' regions and associations. They are viable or almost viable and are all very important for *ex situ* conservation and for the future of these species in the wild. Some populations must increase in size whilst others must decrease.



Gibbon TAG logo
© Matt Ford

Lar gibbon (*Hylobates lar*) © Job Stumpel



PUBLICATIONS

A Gibbon TAG Facebook page, named EAZA Gibbon TAG News, has been launched by Lynsey Bugg (Bristol Zoo, UK), the Communication Advisor of the TAG.

CONSERVATION AND RESEARCH

Project Anoulak is the official Crested gibbon EEP Conservation Programme. We encourage Crested gibbon holders to consider supporting this programme. Camille Coudrat, Director of the project, presented the advances in her conservation work in Laos (<http://www.conservationlaos.org>) at the EAZA Annual Conference.

Susan Cheyne, Chair of the Small Ape Section of the IUCN Primate SG and Director of Outrop (www.outrop.org), presented updates of the Gibbon situation in the wild during the EAZA Annual Conference in Emmen. She

described the needs of collaboration between zoos and rescue centers especially in the veterinary field work.

The TAG is in contact with Aspinall foundation Javan gibbon project in Java and with the Cao Vit Gibbon and Endangered Primate Rescue Center, in Cuoc Phong, Vietnam.

Petra Bolechova (Liberec Zoo, Czech Republic) is the official TAG Research Advisor. She will compile and communicate the needs in term of Gibbon research.

GREAT APE

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

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

INTRODUCTION

The EAZA Great Ape TAG is responsible for six EEPs. The Bonobo (*Pan paniscus*) EEP is a population managed intensively and in close collaboration with the Bonobo SSP. As of 15 September, the population was 47.75 (122) in ten institutions.

The Chimpanzee (*Pan troglodytes*) EEP covers all four subspecies and hybrids, with breeding programmes for Western chimpanzees (*P. troglodytes verus*) and Central chimpanzees (*P. troglodytes troglodytes*), the remaining population is being eliminated through managed decline. At the end of 2016, the population was 444.596.2 (1042) in 122 institutions.

The Gorilla (*Gorilla gorilla*) EEP is composed almost exclusively of individuals of the species *G. gorilla gorilla*, pending genetic confirmation. At the end of 2016, the population was 228. 257. 2 (487) in 75 institutions.

The last EEP covers the Bornean (*Pongo pygmaeus*) and Sumatran orangutan (*Pongo abelii*) at the species level. It is managed separately in two breeding programmes and a remaining population of hybrids. The population was 135.217 (352) in 72 institutions, at the end of 2016.

BREEDING PROGRAMME DEVELOPMENTS

The Gorilla BPG was published in 2017 and is available on the EAZA website. The Chimpanzee BPG will be published before September 2018. The Orangutan BPG is almost ready and due to be published in 2018. The Bonobo BPG are under development.

Clemens Becker (Zoo Karlsruhe, Germany) coordinates the Orangutan EEP with the help of Neil Bemment

(Barcelona Zoo, Spain) and Simone Schehka (Allwetterzoo Münster, Germany). The population is growing only at replacement level but genetics are very robust. A surplus of males has arisen during the last years with bachelor groups not seen as a suitable solution for this species. More flexible facilities are needed to house breeding groups and some solitary males. The LTMP will be developed during 2018. The discovery of *Pongo tapanuliensis* has no effect on this programme.

Frank Rietkerk (Apenheul Primate Park, The Netherlands) coordinates the Gorilla EEP with the help of María Teresa Abelló and Neil Bemment. The population is demographically and genetically healthy, but facing a problem of surplus males. Long-term research about the effects of early castration (prior to three years of age) on the social life of 11 males, born between 2008 and 2012, was conducted. The preliminary results showed it could be an additional management tool complementing the formation of new bachelor groups and the temporary use of contraception. Advances on genetic determination have been made during the past years and funding could be available in 2018 to initiate the genetic determination of the EEP Gorilla population.

Frands Carlsen (Copenhagen Zoo, Denmark) coordinates the Chimpanzee EEP with the help of Tom de Jongh (Royal Burgers' Zoo, The Netherlands). One of the main concerns arising from the LTMP are the low birth rates and the top-heavy age structure that will cause a dip in the Chimpanzee breeding population in the coming years. To maintain a population of 500 individuals (RCP former target) it is necessary to allow carefully selected breeding in the population currently managed as non-breeding. In five years, we will need to re-evaluate this strategy and adjust it if necessary. Last year, many Chimpanzees were transferred between institutions to reorganize the groups based on the genetic results provided by Charlotte MacDonald (Royal Zoological Society of Scotland, Scotland), Species Committee member and Advisor for reintroductions.

Jeroen Stevens coordinates the Bonobo EEP. The population needs to grow and new groups will be established in the future. To improve genetics, some animal transfers have been agreed in exchange between the EEP and the SSP.

ACHIEVEMENTS DURING THE YEAR

The TAG met twice in 2017.

The mid-year meeting was kindly hosted by Allwetterzoo Münster (Germany) in March. During this meeting, the final text for the TAG Vision and Mission were approved.

Our Vision is that Apes are taxonomically our closest living relatives. They are of great interest from the social-educative, scientific, and conservation points of view. We are committed to ensuring the long-term survival of *ex situ* and *in situ* healthy and viable Bonobo, Chimpanzee, Gorilla, and Orangutan populations.

The mission of the TAG is to maintain self-sustaining and healthy populations of all the taxa of Great apes to sub specific levels where possible, and to encourage and promote their conservation in the wild.

The roles of Great ape zoo populations are primarily to be ambassadors for their wild counterparts for conservation / education, to support their global conservation and to be used for non-invasive research in line with the EAZA Research Standards. These zoo populations may also be necessary for future reinforcement of wild populations and should therefore be managed to preserve maximum genetic diversity and natural behaviour.

During the EAZA Annual Conference in Emmen, our second meeting took place. Updates regarding population management, results on research and *in situ* conservation were presented.

The TAG is working to improve the network for effective global conservation. This year, colleagues from IUCN, Pan African Sanctuary Alliance (PASA) and Great Apes Survival Partnership (GRASP) were invited to attend the meeting, in order to intensify communication and collaboration. Our counterparts in other regions were also included. It was agreed to consolidate research efforts into a single Great Ape Research Group during 2018 – a group which will include all the programme Research Advisors to allow for more effective research into biological knowledge and husbandry.

The LTMP for the Chimpanzee EEP was initiated in 2016 and ended in 2017. LTMPs are planned for next year for the other species. The results will help us to establish the RCP with our goals and populations management to ensure self-sustaining populations for future generations.

PUBLICATIONS

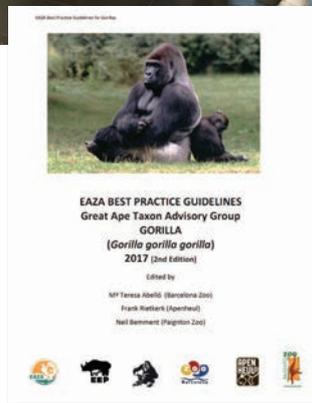
o De Manuel, M. *et al.* (2016). *Chimpanzee genomic diversity reveals ancient admixture with bonobos*. *Science* 354 (6311): 477-481

Great Ape TAG meeting J. Stevens, N. Bemment, L. MacFie, F. Rietkerk, G. Tully, K. Hermann, T. de Jongh, C. Becker, S. Schecka, M.T. Abello, F. Carlsen © EAZA



The Best Practice Guidelines for Gorillas were published in 2017

- o Garriga, R. et al. (2017). *Perceptions of challenges to subsistence agriculture, and crop foraging by wildlife and chimpanzees Pan troglodytes verus in unprotected areas in Sierra Leone*. Oryx 4:1-14.
- o Kumar S. et al. (2017). *Natural pathology of the captive chimpanzee (Pan troglodytes): A 35-year review*. Journal of Medical Primatology 46 (5): 271–290.
- o Račevska, E. and Hill, C. (2017). *Personality and social dynamics of zoo-housed western lowland gorillas (Gorilla gorilla gorilla)*. Journal of Zoo and Aquarium Research 5 (3): 116-122.
- o Strong, V. J. (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.
- o Wich, S.A. (2016). *Land-cover changes predict steep declines for the Sumatran orangutan (Pongo abelii)*. Science Advances 2 (3).



COLLABORATIONS

All the coordinators are asked to identify and advise *in situ* projects, recommended to be supported by the EEP participant institutions.

Collaboration and communication with representatives from IUCN Section of Great Apes, GRASP and PASA, has been quite active last year but is being reinforced to improve results in our common goals of conservation, education and research.

CONSERVATION AND RESEARCH

The TAG has been involved in several research activities.

A good analysis on mortality causes has been done last year but it needs to be continued. A template for a standardized necropsy report is being developed by the Veterinarian Advisors Sharon Redrobe (Twycross Zoo, UK) and Hanspeter Steinmetz (Walter Zoo, Switzerland).

Together with the EAZA Group on Zoo Animal Contraception, we continued compiling information about contraception experiences. This information is requested from holders via an annual questionnaire. The Chimpanzee genotyping project continued. Next year some funding could be available to begin the analysis of the Gorilla population. A new protocol for the use of artificial insemination techniques and germplasm banking is being developed for all Great Ape species.

Other research results presented during this year were: Using touchscreen technology to facilitate comparative cognition and enhance animal welfare (Vanessa Schmitt, Heidelberg Zoo, Germany), Neopterin in urine to monitor health in Chimpanzees and Bonobos (Jeroen Stevens; Verena Behringer, Max Planck Institute Leipzig), Tinder for Orangutans (Mariska Kret, Apenheul Primate Park, The Netherlands).

More information can be found on the EAZA Member Area website.

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)

INTRODUCTION

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

The TAG objectives are:

- o Promote high standards of animal welfare by providing a forum for discussing husbandry, veterinary, ethical

and other issues ensuring the development of improved animal management techniques and producing BPGs for the managed species

- o Actively encourage more EAZA institutions to keep and breed small mammal species to represent greater mammal biodiversity
- o Promote collaboration and cooperation between holders of small mammal species
- o Connect *ex situ* programmes with *in situ* conservation efforts and encourage fundraising to support *in situ* conservation
- o Encourage high quality research in and *ex situ*
- o Promote education programmes within Europe and in range states
- o Establish and regularly review the Small Mammal RCP, to reflect the large number of species within our remit.

BREEDING PROGRAMME DEVELOPMENTS

The discussion regarding our RCP was very important within the mid-year meetings in 2015 (Biotropica, France), 2016 (Jihlava Zoo, Czech Republic) and 2017 (Shaldon Wildlife Trust, UK). Our TAG is responsible for around 4,500 species, so taxonomic subgroups each with a responsible person were founded for the development of the new RCP. This is seen as the best solution given the large numbers of rodent, bat and small mammal species within the TAG. New RCPs will be developed in the future, under the new EAZA RCP structure with every subgroup eventually having their own RCP.

The ESB population of the Northern Luzon cloud rat (*Phloeomys pallidus*) in Europe is increasing. Under the coordination of Pavel Brandl (Prague Zoo, Czech Republic),



Northern Luzon cloud rat (*Phloeomys pallidus*) © Pavel Brandl

the population is well managed and now for the first time more animals are available than wanted by zoos. This is a very good example a species being saved by a Studbook.

ACHIEVEMENTS DURING THE YEAR

The 2017 mid-year meeting took place in Shaldon Wildlife Trust (UK). Many thanks to Shaldon zoo for hosting this event. The TAG members presented very interesting presentations about different small mammals alongside reports from the breeding programmes and from *in situ* conservation projects. These presentations can be found on the TAG page of the EAZA website.

The main discussion was about the future TAG structure. Under support from Neil Bemment (Barcelona Zoo, Spain), EAZA EEP Committee, it was decided to introduce six subgroups with responsible Vice Chairs and a Chair for the whole TAG.

Guided tours of Shaldon WildlifeTrust, Living Coasts, Exmoor Zoological Park, Newquay Zoo and Paignton Zoo Environmental Park were offered and organized by the TAG members over the weekend.

During the EAZA Annual Conference in Emmen, the TAG had two meetings. One for the presentations of the breeding programmes and one closed meeting discussing the future TAG structure.

PUBLICATIONS

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

You can also visit our closed group on Facebook by searching EAZA Small Mammal TAG.

COLLABORATIONS

The TAG is focused on cooperation and collaboration with the relevant IUCN SSC and TAGs of the AZA.

During the mid-year meeting, personal contacts with the Pangolin-Aardvark-Xenarthra (PAX) group, the Bat group, the IUCN Sloths, Anteater and Armadillos SSC and with a lot of professional colleagues worldwide became deeper, paving the way towards future collaborations.

CONSERVATION AND RESEARCH

The TAG also supported many *in situ* projects: the Pakarana project in Bogota, Colombia; the Pangolin project in Asia particularly in Vietnam; and other projects for the Giant anteater (*Myrmecophaga tridactyla*), the Silky anteater (*Cyclopes didactylus*), the Pygmy sloth (*Bradypus pygmaeus*),

Big fun with small mammals in Wildlands Adventure, Emmen © Jutta Heuer



the Northern three-banded armadillo (*Tolypeutes tricinctus*), the Giant armadillo (*Priodontes maximus*), Balkan snow vole (*Dinaromys bogdanovi*), the European souslik (*Spermophilus citellus*), the Laotian rock rat (*Laonastes aenigmamus*) and more.

CANID AND HYAENID

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

TAG Vice Chair: Simon Marsh (Yorkshire Wildlife Park, Doncaster, United Kingdom)

INTRODUCTION

The EAZA Canid and Hyaenid TAG is responsible for 39 Canid and four Hyaenid species. Of those 43 species, the TAG manages and monitors 24 species across EAZA Members and programme participants. Of these 24 species, seven are threatened with extinction. The TAG covers five EEPs and four ESBs.

In 2017 the TAG has played a significant role in the development of the new EAZA population management structure. Our TAG was chosen to work on the first pilot with the “new style” RCP structure during a two-day workshop.

BREEDING PROGRAMME DEVELOPMENTS

In 2017 the Maned wolf (*Chrysocyon brachyurus*) EEP was evaluated. Although the EEP Committee rated the programme as sufficient, they expressed their concerns towards a lack of communication in addition to a decreasing population and lack of interest in the species. It was recommended to improve communication with holders about updates on the programme and actively involve the Species Committee members with the management of the programme. The TAG will work on an action plan with the coordinator to tackle all of the issues which came out of the evaluation.

The Dhole (*Cuon alpinus*) EEP was also evaluated and rated as sufficient, but more communication with

Dhole (*Cuon alpinus*) © Nicola Williscroft


the holders and improved promotion of the species are needed. Unfortunately, due to a lack of time, the coordinator Dr. Heike Maisch (ZooPark Erfurt, Germany) decided to step down so the TAG will be looking to recruit a new coordinator. The vacancy was announced during the Annual TAG meeting in Emmen and we have had several enthusiastic applications. A new Dhole EEP coordinator will be appointed early 2018.

The coordination of the Iberian wolf (*Canis lupus signatus*) EEP was handed over by Conrad Ensenat to his colleague Josep Xarles from Barcelona Zoo (Spain).

Marc Enderby from Highland Wildlife Park (Scotland) started to Monitor by Person the European Grey wolf (*Canis lupus lupus*) population across EAZA Members.

ACHIEVEMENTS DURING THE YEAR

The TAG held its RCP workshop at the EAZA office in Amsterdam in June. The workshop was organized in accordance with the new EAZA population management structure which was approved by Council in spring 2017. During the two days, the attendants went through all 43 species individually and discussed the roles, goals and characteristics for each species. The group looked at the feasibility, risks and benefits of fulfilling each of the defined roles. Finally, it was decided if intensive management of the species was needed across EAZA to deliver those roles- in which case an EEP was recommended. The TAG took this process one step further and completed trail EEP application forms. This tested the new EEP application document for EAZA and was very helpful to the TAG in being able to justify the decisions made during RCP. The report of the workshop is in progress. A presentation about

Brown hyena (*Hyaena brunnea*) © Ingrid Wiesel


the workshop was already given during the EAZA Annual Conference in Emmen.

This workshop was follow up to the Integrated Collection Assessment and Planning (ICAP) workshop that was done in 2016 during the Joint TAG Chairs meeting in Omaha (USA). All documents will be published in 2018.

The Annual TAG meeting took place in Emmen during the EAZA Annual Conference. Updates were given on the programmes and additionally there were some interesting presentations regarding conservation, research and contraception. All presentations can be found on the EAZA website in the Canid and Hyaenid TAG area.

PUBLICATIONS

The BPG for Dhole were finished and published on the EAZA website.

A TAG newsletter was produced and prepared for publication by Teague Stubbington from ZSL (UK). Articles included are updates on TAG activities, conservation, research and a species spotlight. The first newsletter will be sent to all participants in Canid or Hyaenid managed programmes, TAG members and other interested parties by February 2018.

COLLABORATIONS

The TAG Vice Chair, Simon Marsh, was invited to join the IUCN Canid SG in 2017. This will allow the TAG to build on existing links with the IUCN and increase *in situ* and *ex situ* conservation and research activities.

CONSERVATION AND RESEARCH

The TAG actively encourages all EAZA Members to

participate in *in situ* conservation projects for Canid and Hyaenid species. To help zoos find good projects, the TAG has produced an overview of *in situ* conservation projects and organisations that are looking for practical and/or financial support. During the EAZA Annual Conference in Emmen a presentation was given by Ingrid Wiesel from the Brown Hyena Research Project (Namibia). By regularly communicating about *in situ* projects the TAG hopes to increase contributions towards conservation.

As a follow-up from the RCP workshop in June the TAG Research Advisor, Kerry Hunt (Sparsholt College, UK), made an overview of research priorities, which were sent to all TAG members for review. TAG members are encouraged to work on these priorities and contact the Research Advisor if they want to discuss the best approach.

BEAR

TAG Chair: José Kok (Ouwehands Zoo, Rhenen, The Netherlands)

TAG Vice Chair: Lydia Kolter (Cologne Zoo, Cologne, Germany)

INTRODUCTION

2017 was a year of major changes in the EAZA Bear TAG membership, where we welcomed five new members.

Rémy Galliot from Parc Animalier d'Auvergne (France) agreed to become the conservation facilitator.

Zsuzsa Reveszne Petro from Sóstó Zoo (Hungary) kindly offered to become a Bear TAG educator.

Anna Jakucinska from Warsaw Zoo (Poland) took over the Asiatic black bear (*Ursus thibetanus*) ESB from Maria Krakowiak, who managed this for 16 years! Thanks Maria.

Clive Barwick from Colchester Zoo (UK) took over the Malayan sun bear (*Helarctos malayanus*) ESB and Florian Sicks from Berlin Tierpark (Germany) took over the Andean bear (*Tremarctos ornatus*) EEP, both from Lydia Kolter who had coordinated them since 1994 and 1993, respectively. Thank you very much, Lydia! We are sad to say goodbye to these 'old faces', but happy to see so many new ones joining. Lydia was Bear TAG Chair and co-Chair for many years. She will still be involved in the TAG as a Research Advisor. In 2018 we hope to find a new Bear TAG co-Chair.

BREEDING PROGRAMME DEVELOPMENTS

In 2017 the TAG continued working on BPG, which we hope to finish in 2018. In December 2017, a LTMP meeting was held for the Brown bear (*Ursus arctos*). It was a nice

First International Symposium on Sun Bear Conservation and Management © Lydia Kolter



exercise, since this species is relatively abundant in the wild in Europe, to discuss the roles and goals of the species in zoos, knowing that wild individuals are regularly coming into human care due mainly to human-bear conflict. The meeting was held at the EEO and was attended by both *ex* and *in situ* colleagues. It resulted in a well-thought over plan that will be published in 2018.

ACHIEVEMENTS DURING THE YEAR

The EAZA Bear TAG has been collaborating with Polar Bears International (PBI) for quite some years now. More recently, collaborations linking the *ex* and *in situ* communities have been created. These collaborations encourage zoos to participate in non-invasive research projects on their Polar bears to help the field scientists answer questions on how these animals will adapt or be affected by a warming Arctic.

After the 2016 Research Symposium (at the mid-year meeting in Mulhouse Zoo, France), PBI offered to sponsor a European Polar Bear Husbandry and Conservation Research Training Workshop. This workshop, hosted in October by the Yorkshire Wildlife Park (UK) focused on bear training for welfare and research purposes. Prior to the workshop, a keeper from Mulhouse Zoo travelled and trained at Como Zoo, Minnesota and San Diego Zoo, California (USA).

The next workshop on Polar bears and Conservation Science will be held in April 2018 in Vienna Zoo (Austria).

PUBLICATIONS

The first issue of the Bear TAG Newsletter was circulated in Spring 2017. More issues will follow in 2018.

Zsuzsa Reveszne Petro published "*The Bear Book*", a book

for children up to 12 years. The illustrated story introduces all the bear species and explains the threats, conservation needs and the role of bears within EAZA zoos. It is currently being translated into different languages.

COLLABORATIONS

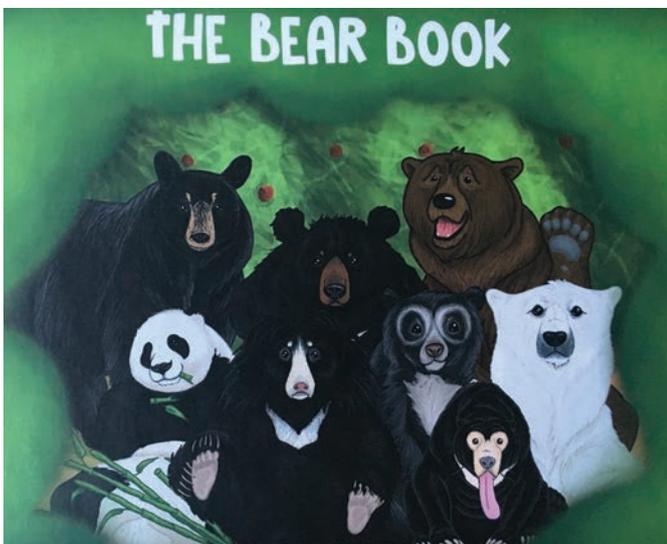
The 2017 Bear TAG mid-year meeting was held in Cologne Zoo, consisting of three parts. On day 1, general TAG issues were addressed. Day 2 was devoted to Sun bears; new facilities, husbandry issues and conservation. There was a close cooperation with the NGO Free the Bears. Day 3 focused on the Andean bear with again presentations about new and existing facilities, husbandry, veterinary issues and conservation. The Andean Bear Conservation Alliance was represented by Isaac Goldstein of Wildlife Conservation Society, Colombia.

In September 2017, two TAG members contributed to the first International Symposium on Sun Bear Conservation and Management in Kuala Lumpur. They were invited to the subsequent Sun bear Conservation Planning workshop. The roles played by captive Sun bears should in *in situ* conservation as well as tasks for the *ex situ* community - as developed by the *ex situ* Working Group - these will be included in the Sun bear global action plan which is currently in preparation.

Three TAG members also attended the International Bear Association Conference in Quito, Ecuador and actively participated in both the IUCN Bear SG meeting and the *ex situ* session.

CONSERVATION AND RESEARCH

The EAZA Bear TAG is involved in the one-year pilot of



The Bear Book © Zsuzsa Petro

Linking Conservation and Zoos (LINCZ), an online dating site for conservation. It gives NGO's the possibility to showcase their conservation projects and helps zoos find projects dedicated to the species they wish to support. LINCZ is run by reliable conservation organizations that guarantee regular feedback (www.LINCZ.org).

SMALL CARNIVORE

TAG Chair: Aude Haelewyn-Desmoulin (Parc ZOO du Reynou, Le Vigen, France)

TAG Vice Chair: Allan Galway (Belfast Zoological Gardens, Belfast, Northern Ireland)

INTRODUCTION

During the year 2017, the EAZA Small Carnivore TAG (SC TAG) has continued to improve its structure and organisation. It now has 36 members, managing eight EEPs and four ESBs. Thirty species are monitored, either to help determine the status of EAZA populations and the roles they could play for conservation or to free space for more important species. The team is helped by ten advisors / consultants (on research, nutrition, conservation, communication and marketing).

2017 has allowed the TAG to plant some seeds for conservation and education activities. The TAG is looking for the first leaves to appear in 2018!

BREEDING PROGRAMME DEVELOPMENTS

Two EEPs were evaluated in 2016 / 2017 - Red panda (*Ailurus fulgens*) and Wolverine (*Gulo gulo*) - and both were rated as good.

LTMP meetings have successfully been held between November 2016 and October 2017 for Wolverine, European mink (*Mustela lutreola*) and European otter (*Lutra lutra*). All three reports are available.

A new TAG evaluation has been done and the encouraging results were published in December. This will guide the actions for improvements in 2018.

ACHIEVEMENTS DURING THE YEAR

The SC TAG established its priority species and areas for conservation: Europe, with European minks and Marbled polecats (*Vormela peregusna*); Madagascar and South-East Asia, with Owston's civets (*Chrotogale owstoni*), different species of otter, Red pandas and Binturongs (*Arctictis binturong*).

Pu Mat National Park, location for Owston's civet (*Chrotogale owstoni*) survey (Save Vietnam's Wildlife) © Le Van Dung



Thus, essential meetings were organised during the year:

- o A two-day European mink LTMP meeting was held in Ploiesti, Romania. The largest verified population of European mink is living in the Danube Delta. Involving *ex* and *in situ* colleagues from Romania is vital to the conservation of this Critically Endangered species.
- o The first "Small carnivore conservation meeting" was held the following day and was organised together with the Romanian Zoo Federation (FGZAR). It offered an incredible opportunity for sharing *ex situ* conservation tools, successful *in situ* stories and for fruitful encounters and discussions.

The main outcomes were the creation of a European mink Working Group in Romania and the first step for the involvement of the Romanian government.

The TAG mid-year meeting and a tour to Danube Delta to discover European mink natural habitat followed.

Taking advantage of the experts' and advisors' presence, an additional meeting dedicated to Owston's civets was held to discuss the first steps for an action plan to save this Endangered species that may follow the same trend as the sympatric Saola.

PUBLICATIONS

The EAZA Group on Zoo Animal Contraception (EGZAC) has completed their guidelines for Small carnivores, based on the contraception use data in their database, as well as the results of their Red panda contraception survey. Both documents are available from the EAZA website TAG workspace or EGZAC.

The SC TAG Nutrition Advisor, Francis Cabana (Wildlife Reserves Singapore, Singapore), started research on urolithiasis prevention in Asian small-clawed otters (*Aonyx cinereus*). A first report was written leading to diet recommendations.

LTMPs have been published for Wolverine, European mink and European otter.

A Facebook group has been launched, allowing for a wide communication of the SC TAG activities and Small carnivore species in general.

A TAG newsletter is in preparation, and the TAG is now looking for a volunteer to collect articles, format them and distribute the newsletter.

COLLABORATIONS

Over the recent years, the link between the IUCN SSC

Otter and Small Carnivore Specialist Groups (OSG and SCSG) and the TAG has strengthened. The TAG now has three Conservation Advisors involved in these groups, including Nicole Duplaix, the OSG Chair herself, who is actively helping the TAG. Two of them, Will Duckworth and Daniel Willcox, have played essential roles in important meetings organised by the SC TAG in 2017 for Owston's civet, European mink, Madagascan carnivores and Otters in South-East Asia.

One of the actions carried out in 2017 for the conservation of the European mink led to a new collaboration with the Smithsonian Conservation Biology Institute and the AZA. European mink conservation will benefit from experience and expertise gained through the successful Black-footed ferret (*Mustela nigripes*) recovery programme.

CONSERVATION AND RESEARCH

Based on its current conservation priorities, the SC TAG focused on some Asiatic species. The Red panda is a good example considering the link between the EEP and the Red Panda Network, through the forest guardians programme. A mammal diversity survey has been launched in Panchthar-Illam-Taplejung corridor, Eastern Nepal. Data on population occupancy, distribution and abundance will be collected using direct sightings, indirect signs and camera trapping techniques. Threats to these mammal species will also be identified and assessed. The results will support the development of effective conservation strategies.

In October 2017, the Red panda EEP coordinator travelled to Gorkhe (East Nepal) to give a three-day training, focusing on handling camera traps and GPS equipment, to 15 Forest Guardians together with Peema Sherpa from Red



Workshop on handling camera traps and GPS equipment for mammal diversity survey in Eastern Nepal © Red Panda Network

Panda Network.

EGZAC has conducted a contraception survey in Red panda in cooperation with the EEP coordinator. Most collections don't remove implants or find it difficult to remove them. However, it is recommended to remove implants from animals that receive breeding recommendations. Implants placed between the shoulders - where the skin is quite thick and can form a fibrous layer meaning removal can be challenging. We would advise areas with thinner skin e.g. in the axilla, inner thigh, around the navel, base of the ear etc.

Going on with the Asiatic species TAG priority, the long-term viability of the captive population of Owston's civets is a concern for the TAG and the Conservation Advisors. A Working Group has been established to develop a first action plan for Owston's civet conservation, based on the IUCN SSC Conservation Planning SG One Plan approach. The first task of this group will be the organisation of a meeting in Vietnam.

In parallel, research on nutrition in zoos is planned for 2018 / 2019.

Regarding Europe, the TAG is involved in the creation of a European mink Romanian Working Group, who will be in charge of research on wild population status, impact of American mink and breeding farms, as well as the setting up of a captive population in Romania.

Among the Madagascan carnivores, the Bokiboky (*Mungotictis decemlineata*) has been defined as the main priority. The number of EAZA zoos gaining experience with breeding is increasing. These zoos are willing to share it to help develop the *ex situ* population, so spread the word among the zoo community, as well as be involved with an *in situ* programme. The TAG aims to create a Working Group to lead this important new conservation project.

The TAG is planning a Small carnivore workshop in Gaia Zoo in spring 2019. The aim is to share expertise on husbandry for the priority species, define the needs in terms of research and conservation for all small carnivore species and plan educational activities to spread the word within the zoo community as well as to zoo visitors.

FELID

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

TAG Vice Chairs: Andre Stadler (Alpen Zoo, Innsbruck, Austria), David Barclay (Royal Zoological Society of Scotland Highland Wildlife Park, Kingussie, Scotland)

INTRODUCTION

The role of the EAZA Felid TAG is to support education and 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. In 2017 there were twenty EEPs, two ESBs and three MON-P (sub) species.

BREEDING PROGRAMME DEVELOPMENTS

- o Grégory Breton (formerly Parc Des Félines, France) stepped down as TAG Vice Chair to take a post at NGO Panthera.
- o David Barclay (RZSS Highland Wildlife Park, Scotland) has been appointed new TAG Vice Chair.
- o Jan Vasak (Jihlava Zoo, Czech Republic) has taken over the Geoffroy's cat (*Leopardus geoffroyi*) EEP from Raymond van der Meer (Amersfoort Zoo, The Netherlands).
- o Pavel Brandl (Prague Zoo, Czech Republic) has taken up the monitoring of the Asiatic leopard cats (*Prionailurus bengalensis* ssp).
- o The Rusty-spotted cat (*Prionailurus rubiginosus*) ESB has been proposed as an upgrade to EEP.

The most recent version of the Felid TAG RCP summary table (2017) can be accessed on the EAZA Felid TAG member area which clearly identifies each taxa's (species and subspecies) position, population goals and areas of focus, be it husbandry, research, veterinary or population management.

During 2017 five Quick Population Assessments were completed for: Margay (*Leopardus wiedii*), Snow leopard (*Panthera uncia*), Fishing cat (*Prionailurus viverrinus*), Amur leopard (*Panthera pardus orientalis*) and Sri Lankan leopard (*P. pardus kotiya*).

BPGs have been completed for an additional four species: Southern cheetah (*Acinonyx jubatus jubatus*), Margay, Asian golden cat (*Catopuma temminckii*), Jaguar (*Panthera onca*), and are all currently under review.

Pallas's cat (*Otocolobus manul*), Port Lymgne Wildlife Animal Park, UK
© Alexander Sliwa



ACHIEVEMENTS DURING THE YEAR

In 2017, the TAG held their annual mid-year meeting at RZSS Highland Wildlife Park (Scotland) between the 24-26 of March 2017. Two TAG sessions were also held during the EAZA Annual Conference in Emmen.

The mid-year meeting recorded one of the largest attendances with 33 individuals representing 22 EAZA Members and five external organisations from across 12 European countries. In addition to programme updates a number of presentations - focusing on Big cat *in situ* conservation and research; Felid reintroduction, husbandry and cub development; management of aging zoo Felids; BPGs; gamete recovery project and new Felid TAG animal demonstration guidelines - were given. The TAG welcomed the attendance of the IUCN SSC Cat SG Chairs who gave an update on the new IUCN revised Felid taxonomy highlighting some of the potential implications for a number of species / subspecies.

The two Felid TAG sessions in Emmen were also both well attended. During session 1, short updates were given by Programme coordinators, Studbook keepers and Monitoring-Persons along with presentations covering a wide range of topics focusing on management of geriatric Big cats; population management of white / generic tigers; a review of toxoplasmosis in Small cat species and Margay *in situ* conservation and research. During session 2, further presentations were given with a review of the Snow Leopard Trust research to date in the Tost region of Mongolia; an update of recent Sand cat (*Felis margarita*) field work in the Sahara Desert, Morocco; Wildcat (*Felis*

silvestris) reintroduction planning in Scotland and a presentation focusing on the work of *Panthera*.

PUBLICATIONS

Versteeg, L. *et al.* (2017). *A bright future for the Eurasian lynx*. *Zooquaria* 97, p. 21.

COLLABORATIONS

Following the 2017 IUCN Cats News Special Issue “A revised taxonomy of the felidae”, the TAG has been collaborating closely with the IUCN SSC Cat SG Chairs to discuss the impact and implications of the revised taxonomy and how this may impact the EAZA programmes. The publication reviewed evidence specifically relating to morphology, genetics and biogeography and used a simple traffic light system to indicate the likely reliability of species and / or subspecies. Overall the review proposed an increase in recognised species from 38 to 41 and a decrease in recognised subspecies from 200+ down to 77.

CONSERVATION AND RESEARCH

The TAG Chair, Alex Sliwa, continued to be actively involved in long-term *in situ* work on Black-footed cats (*Felis nigripes*) in South Africa and on Sand cat in Southern Morocco, together with Grégory Breton in partnership with Rabat Zoo and sponsored by several EAZA Members and NGOs specializing in Felids.

TAG Vice Chair David Barclay continued research on Pallas's cat (*Otocolobus manul*) and conservation efforts through the Pallas's cat International Conservation Alliance (PICA): a partnership project between EAZA Members RZSS, Nordens Ark and NGO Snow Leopard Trust supported by a number of EAZA, AZA and Japanese Association of Zoos and Aquariums (JAZA) Members.

A reintroduction planning meeting was held between the Felid TAG Chairs, IUCN SSC Cat SG Chairs and EAZA



Mid-year meeting group, Highland Wildlife Park 2017 © Jose Ferreira

Member RZSS Highland Wildlife Park to discuss the Wildcat conservation and reintroduction to Scotland as part of the national action plan.

José Ferreira, Alex Sliwa and Marianne Hartmann, as members of the Caucasian Leopard Reintroduction Advisory Group continued to collaborate with the Persian leopard (*Panthera pardus saxicolor*) reintroduction project. As part of this, the Memorandum of Understanding between EAZA, IUCN SSC and the Ministry of Natural Resources and Environment of the Russian Federation on the restoration (reintroduction) of the Persian leopard in the Western Caucasus was renewed for another five years.

Jo Cook continued working closely with international partners for the Amur leopard reintroduction project and the Amur leopard and Tiger Alliance.

Through their expertise, support, capacity building, population management and education, it is clear that the Felid TAG and its members play a key role in connecting *ex* and *in situ* conservation efforts for multiple Felid species across the globe.

MARINE MAMMAL

TAG Chairs: Gerard Meijer (Ouwehands Dierenpark, Rhenen, The Netherlands); from September, Claudia Gili (Acquario di Genova, Genova, Italy)

TAG Vice Chairs: Claudia Gili (Acquario di Genova, Genova, Italy); from September, Agustin Lopez Goya (Parques Reunidos, Madrid, Spain)

INTRODUCTION

The EAZA Marine Mammal TAG oversees the running of two EEPs - Bottle-nosed dolphin (*Tursiops truncatus*) and Caribbean manatee (*Trichechus manatus*) - and four ESBs - Patagonian (*Otaria flavescens*) and Californian (*Zalophus californianus*) sea lions, South American fur seals (*Arctocephalus australis*) and Grey seals (*Halichoerus grypus*).

During the EAZA Annual Conference in Emmen, the TAG structure was modified. Since September, Claudia Gili (Acquario di Genova, Italy) and Agustin Lopez Goya (Parques Reunidos Madrid, Spain) have been appointed TAG Chair and Vice Chair, respectively. We have asked Gerard Meijer (Ouwehands Dierenpark, The Netherlands) to remain a formal member of the TAG.

Many new coordinators and members joined the TAG and new species are being managed.

Veterinary Advisors are currently being reevaluated. For now, only Kathrin Baumgartner (Tiergarten Nürnberg, Germany) is confirmed as Manatee Veterinary Advisor. The other positions will be filled officially soon.

Within the Memorandum of Understanding with the European Association for Aquatic Mammals (EAAM), its board has a position in the TAG.

We have also asked Tania Monreal from the International Zoo Veterinary Group (IZVG, UK) to be part of the Marine Mammal TAG as independent Veterinarian responsible for the Accreditation Committee of EAAM.

BREEDING PROGRAMME DEVELOPMENTS

In 2017, we completed the RCP and delivered it to the TAG members.

Here are the new coordinators and programmes within the TAG:

- o Bottle-nosed dolphin: we thank Niels van Elk (Harderwijk Dolfinarium, The Netherlands) and Manuel Garcia Hartmann (Marineland Antibes, France) for the excellent work done with the EEP and Studbook.

New coordinator and vice coordinator positions for this EEP were formally advertised. Robert Gojceta (Attica Zoological Park, Greece) and Lindsay Rubincam (Oceanogràfic Valencia, Spain) were elected for these positions, respectively, during the summer 2017.

The completed LTMP is now being distributed to the old Species Committee – a new Species Committee is due to be elected.

- o Californian sea lion ESB: Sonia Matias (Lisbon Zoo, Portugal) is the new Studbook keeper of the programme. We thank Gerard Meijer for the excellent management of the species until now.
- o Harbour seal (*Phoca vitulina*) Mon-T (*i.e.* Monitored by TAG): Sabine Ketelers (Parc Zoologique Fort-Mardyck, France) will monitor the population on behalf of the TAG.
- o Walrus (*Odobenus rosmarus*) ESB: Stephan Hering-Hagenbeck (Tierpark Hagenbeck, Germany) is the new Studbook keeper.
- o Grey seal ESB: Anna Jakucinska replaces Maria Krakowiak as new Studbook keeper (both from Warsaw Zoological Garden, Poland). We thank Maria for the excellent work done in managing this species so far.
- o Patagonian sea lion (*Otaria byronia*) ESB: Olivia Walton (IZVG, UK) has resigned from the position. We thank her for the excellent work carried out together with Beata Kuzniar (Gdansk Zoo, Poland), who is currently running

South American fur seal (*Arctocephalus australis*) © Yummifruitbat



the programme.

- o South American fur seal ESB: managed by Stephanie Zech (Dortmund Zoo, Germany).

ACHIEVEMENTS DURING THE YEAR

In addition to the many changes in the TAG in 2017, a lot of attention has been given to the new law in France to ban Cetaceans in human care and to the issues regarding the transfer of Barcelona dolphins held in Barcelona Zoo to another suitable EEP facility.

PUBLICATIONS

Caribbean manatee Husbandry Guidelines were written by Lorenzo Von Fersen and Robin Walb (Tiergarten Nürnberg, Germany).

Pinniped Husbandry Guidelines were nearly completed (aiming to be finalised in March 2018) by Claudia Gili, Gerard Meijer and Geraldine Lacave (an independent consulting Veterinarian).

Standards for dimensions were delivered by Claudia Gili, Gerard Meijer and Geraldine Lacave, to EAAM for approval and to be utilized in EAAM accreditation processes.

Good progress was made on finalising the Bottle-nosed dolphin LTMP, which is expected to be approved by all EEP participants in early 2018.

COLLABORATIONS

Collaboration with EAAM continues with the goal to share husbandry protocols and procedures, as well as to implement the strategy for Marine mammal facility accreditation.

A group on Walrus management and the new Studbook keeper will start addressing the issues related to Walrus

breeding and management in Europe.

CONSERVATION AND RESEARCH

Some EAZA Members are involved in supporting, with direct participation, the conservation projects on Mediterranean monk seals carried out by MOM - the Hellenic Society for the Study and Protection of the Monk seal- in Greece (Acquario di Genova, Attica Zoological Park).

Acquario di Genova has also started a new conservation project, called Tursiomed, on wild Mediterranean Bottlenosed dolphin engaging more than 20 research facilities on the European coasts to share data related to the abundance of the species, its census and to Marine Strategy.

EQUID

TAG Chair: Ulrike Rademacher (Zoologisch-Botanischer Garten Wilhelma, Stuttgart, Germany)

TAG Vice Chairs: Jaroslav Simek (Zoo Prague, Prague, Czech Republic); Tanya Langenhorst (Marwell Wildlife, Winchester, United Kingdom)

INTRODUCTION

A total of six species fall under the remit of the EAZA Equid TAG: African wild ass (*Equus africanus*), Grevy's zebra (*Equus grevyi*), Hartmann's mountain zebra (*Equus zebra hartmannae*), Turkmenian Kulan (*Equus hemionus kulan*), Onager (*E. hemionus onager*) and Przewalski's horse (*Equus przewalski*).

BREEDING PROGRAMME DEVELOPMENTS

In 2017, two EEPs have been evaluated: the Przewalski's horse and the Hartmann's mountain zebra, which were both rated as good. The TAG continued the review of the EAZA BPG for Equids.

ACHIEVEMENTS DURING THE YEAR

The TAG dealt with these major topics:

- o IUCN survey on diseases affecting equids in Europe, which will be completed and summarised shortly for hand over to the IUCN Equid SG
- o Incorporating the results of the survey on experience of Equids in mixed exhibits into the EAZA BPG.

PUBLICATIONS

- o D'Souza-Anjo, M. *et al.* Bruce (2017). *A Comparison of Fecal Steroid Metabolite Concentrations Between Harem and Bachelor Stallions in a Free-Ranging Population of Przewalski's Horses (Equus ferus przewalskii)*. *Zoo Biology* 36: 127–131
- o Hemami, M.-R. *et al.* (2017). *Determining habitat needs and movement corridors of Persian wild ass (Equus hemionus onager) in Bahram-e Goor Protected Area, Iran*
- o Ito, H. *et al.* (2017). *Contrasting results from molecular and pedigree-based population diversity measures in captive zebra highlight challenges facing genetic management of zoo populations*. *Zoo Biology*, 36 (1): 87–94
- o Kaczensky, P. *et al.* (2017). *Feasibility study for Kulan (Equus hemionus kulan) reintroduction into the central steppe of Kazakhstan*. NINA Report 1366. 68 pp
- o Kaczensky, P. *et al.* (2017). *Stable isotopes reveal diet shift from pre-extinction to reintroduced Przewalski's horses*. *Scientific Reports* 7: 5950
- o Langenhorst, T. and Davidson, Z. (2017). *Grevy's zebra conservation in Kenya 2017 – report and funding proposal prepared for supporters and members of the Grevy's zebra EEP conservation projects*. Winchester, Marwell Wildlife, UK
- o Matthews, B. and Whitbread, S. (2017). *Considerations in Managing a Bachelor Herd of Grevy's Zebra (Equus grevyi Equus grevyi Oustalet, 1882)*. Poster for the EAZA Conference 2017. Chessington World of Adventures, UK
- o Ojwang' *et al.* (2017). *Kenya National Wildlife Corridor Management Plan*
- o Parker, G.E., *et al.* (2017) *Can pastoral communities offer solutions for conserving the Endangered Grevy's zebra Equus grevyi at the periphery of its range?* *Oryx* 51(3): 517-526
- o UNEP/CMS (2017). *Conservation Road Map for the African Wild Ass Equus africanus 2017-2027*. CMS Technical Series No. 34. Bonn, Germany. ISBN 978-3-937429-22-9, <http://www.cms.int/en/publication/road-map-conservation-african-wild-ass-equus-africanus-2017-2027>
- o Zharkikh, T.L. and Linerova, L.G. (2016). *Evaluation of the fodder stocks for the Przewalski's Horse Equus ferus przewalskii on the "pre-Ural" steppe plot of the Orenburg state nature reserve*. *Nature Conservation Research* 1 (3): 90–94

CONSERVATION AND RESEARCH

Alex Greenwood (IZW Leibniz Institute for Zoo and Wildlife Research, Germany) is investigating the prevalence of EHV

Grevy's zebras (*Equus grevyi*) in Stuttgart Zoo © Ulrike Rademacher



(Equine Herpes Virus) in wild equid species both in zoos and in free living populations, the TAG is providing samples whenever possible for this project.

Members of the African equid EEPs are also encouraged to submit samples of sarcoids to Christian Wenker (Basel Zoo, Switzerland) for further research in that area.

The Grevy's zebra EEP/Marwell Wildlife continued working with the wildlife authorities and NGOs in Kenya in their ongoing conservation efforts for Grevy's zebra.

The long standing Grevy collaring initiative provided movement data that has contributed to the publication of the National Wildlife Corridor Management Plan in Kenya. This document has been in development since 2012 and the Grevy's zebra collar data formed a major component-contributing to the mapping and gazettement of Kenya's wildlife corridors.

The Northern Kenya Grevy's zebra Project combines conservation and peace initiatives. The key focus for this community focused project is on sharing landscapes and resources with wildlife. The project currently employs

a total of 17 field scouts, five of whom are women. The scout team plays a vital role in spearheading regional conservation activities, acting as local ambassadors as well as collecting data.

The KULANSTAP Project - Kulan reintroduction to the Steppe of Central Kazakhstan is supported by EEP members.

In December 2016 / January 2017, GPS tracking collars were attached for the first time to nine animals in Qatrouiyeh NP and Bahram-e Goor Protected Area in Fars Province, Iran. Data collected will help to determine the habitat requirements of Persian wild ass. The project is a cooperation between the provincial office of the Department of the Environment (DOE), Iran, Vienna University, the University of Wyoming, Isfahan University of Technology and DOE's Wildlife Office.

Semen collection of EEP-Onagers was undertaken to help support an AZA artificial insemination programme. Approximately 30 animals are remaining within AZA institutions and this population is at risk of becoming

Releasing four Przewalski's horses (*Equus przewalski*) to Gobi B, Mongolia © Ulrike Rademacher



regionally inbred since important founder animals have dropped out of the population.

In December 2016, the Ethiopian Wildlife Conservation Authority (EWCA) and the IUCN SSC Equid SG convened a workshop in Addis Ababa to develop an Ethiopian National Action Plan for Somali wild ass in addition to Grevy's zebra and Plains zebra (*Equus quagga*) conservation from 2017 – 2026.

In March 2017, Convention on Migratory Species (CMS) hosted a workshop in Bonn, Germany, for experts and representatives from all African wild ass range states. More than 20 participants from governments, NGOs, universities and technical aid agencies attended. For the first time, colleagues from Ethiopia and Eritrea were able to meet and discuss mutual concerns about conservation action plans for the African wild ass. The outcome of the workshop was the development of A Conservation Road Map for the species.

In June 2017, Prague Zoo in cooperation with Przewalski's Horse EEP, International Takhi Group and other subjects organized another transport of four horses from Europe to the Strictly Protected Area Great Gobi B in Western Mongolia. So far, 27 horses from EEP were moved to Mongolia within the frame of "Return of the Wild Horses" project.

RHINOCEROS

TAG Chair: Friederike von Houwald (Basel Zoo, Basel, Switzerland)
TAG Vice Chair: Lars Versteeg (Safaripark Beekse Bergen, Hilvarenbeek, The Netherlands)

INTRODUCTION

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 captive populations are healthy, self-sustaining, genetically viable and are capable of being an effective tool in support of rhino conservation in the wild.

BREEDING PROGRAMME DEVELOPMENTS

- o The Black rhinoceros (*Diceros bicornis michaeli*) EEP experienced breeding success in Tallinn Zoo (Estonia) and Rotterdam Zoo (The Netherlands) – where offspring were welcomed for the first time. The EEP assigned Linda Bruins-van Sonsbeek (Rotterdam Zoo) as an additional Veterinary Advisor.
- o The Greater one-horned rhinoceros EEP (*Rhinoceros unicornis*) is working on collaboration with the North American region and selected a new Species Committee.
- o The White rhino EEP (*Ceratotherium simum*) showed an increase in cooperation by realising several important transfers.

ACHIEVEMENTS DURING THE YEAR

In 2017, the TAG met at the EAZA Annual Conference in Emmen. A major aim was to continue to strengthen forces with the *in situ* partners to tackle the huge poaching problems. Josephine Gibson, the International Partnership Development Manager of Save the Rhino International (SRI) gave a talk about zoos' collaboration for rhino conservation projects. Michael Eliko, Education Officer of the North Luangwa Conservation Programme (Zambia) was invited to talk about the Black rhino reintroduction into North Luangwa National Park and how zoos can get involved in "Education against Extinction". Further subjects covered during the TAG meeting were improved husbandry aspects with special emphasis on indoor substrate use. Focus was given to animal health and welfare of the three rhino species in human care.

A Greater one-horned rhinoceros (*Rhinoceros unicornis*) new born, January 2017 © Basel Zoo



According to the IUCN SSC African Rhino Specialist Group (AfRSG), the number of African rhinos killed by poachers in 2017 were 1028. While poaching is down in Kruger National Park, it is significantly up in other provinces, particularly in KwaZulu-Natal (both in South Africa).

There were 12 cases of poaching of Indian rhinos in Assam during 2017.

The third Black rhino husbandry meeting was held, with 27 people from 12 collections attending, in addition to the EAZA representative and Rhino TAG Vice Chair. The totality of participants reported the workshop to be useful / very useful. Particular topics included were nutrition, breeding and veterinary issues.

The White rhino EEP had their annual meeting during the EAZA Annual Conference as well, with focuses on veterinary issues, nutrition, conservation and building up a sustainable population. The initiatives of the White rhino EEP, regarding the historical lack of breeding in this species, are now really showing results and, with the number of births rising, the population has become sustainable.

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, increases for EAZA.

PUBLICATIONS

The veterinary chapter of the EAZA Black Rhino BPG is under review.

Pluhacek, J. *et al.* (2017). *Interbirth intervals are associated with age of the mother, but not with infant mortality in Indian rhinoceroses.* Current Zoology 63 (3): 229-235.

This paper concluded that in Indian rhino, interbirth

intervals in human care can be slightly extended to approach situation in the wild and when necessary for management reasons (space availability).

Heidegger, E.M. *et al.* (2016). *Body condition scoring (BCS) system for Greater one-horned Rhino: Development and Application.* Zoo Biology 35 (5): 432-443.

The article suggests the BCS was not correlated to foot problems and not correlated to parity. But it was correlated to the amount of food offered as estimated from the questionnaire. Adjusting the amounts and the nutritional quality of the diet components is an evident measure to consider.

COLLABORATIONS

The Black rhino EEP is in discussion with African Parks and the AfRSG about future reintroduction plans to Akagera National Park in Rwanda.

CONSERVATION AND RESEARCH

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. Additional efforts would make an even bigger difference.

Several research studies were conducted with support of the TAG. The role of oxidative stress in the pathogenesis of iron overload disorder in captive Black rhinos is studied on the European population by Hanae Pouillevet (the Nantes Veterinary Environmental Platform, France). The gut microbiome and diet in this species is investigated by the EEP Vet Advisor Linda Bruins-van Sonsbeek and conservation genomics research is being conducted by Franziska Elsner-Gearing (Chester Zoo, UK).

Thirty-five EAZA Members are reported to participate in White rhino conservation projects in the EAZA Conservation Database. Outside of the database, it is known that additional EAZA Members donate to the large rhino conservation organisations, such as SRI and International Rhino Foundation.

TAPIR AND SUIFORM

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

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

INTRODUCTION

The EAZA Tapir and Suiform TAG is responsible for the Tapirs (Tapiridae), the Hippos (Hippopotamidae), the Pigs (Suidae) and the Peccaries (Tayassuidae). The TAG was created in 2014 when the former Tapir and Hippo TAG and the Pigs and Peccaries TAG were merged. The TAG has very close links with the IUCN SSC Tapir SG, the IUCN SSC Hippo SG and the IUCN SSC Wild Pig SG.

BREEDING PROGRAMME DEVELOPMENTS

During 2017 the evaluation of the Pygmy hippopotamus (*Choeropsis liberiensis*) EEP and the Visayan warty pig (*Sus cebifrons*) EEP were completed, and the evaluation of the Babirusa (*Babirusa babirusa*) EEP was launched. Results from the two completed EEPs – both received positive reports - were circulated to the participants, and necessary actions for improvement were initiated.

ACHIEVEMENTS DURING THE YEAR

During the EAZA Annual Conference in Emmen the TAG met twice, the first session focused on Tapirs and Hippos, and the second on Pigs and Peccaries. Updates about the various EAZA programmes and the Babirusa GSMP were given. During the Pigs and Peccaries session, two focus groups were established, one for Philippines *ex situ* fauna (including pig) conservation and one for the Javan warty pig (*Sus verrucosus*). The purpose of the two groups is to coordinate conservation efforts for the taxa involved and to initiate necessary research as well as *ex* and *in situ* conservation activities.

A list of seven main conservation projects identified by the Hippo SG was presented to EAZA zoos for possible support and/or non-financial partnership.

PUBLICATIONS

o Burton, J. *et al.* (2017). *Action Indonesia – Global Species Management Plans for Banteng, Anoa and Babirusa*. Annual Report. (https://www.asianwildcattle.org/system/files/2018-01/GSMP_Annual_report%202017_FINAL_0.pdf)

- o Flacke, G. L. *et al.* (2017). *Demographics of polycystic kidney disease and captive population viability in pygmy hippopotamus (Choeropsis liberiensis)*. *Zoo Biology* 36 (2): 136-151.
- o Ito, M. *et al.* (2017). *Food preparation behaviour of babirusa (Babyrousa celebensis)*. *Journal of Zoo and Aquarium Research* 5 (2): 97-103.
- o Leus, K., *et al.* (2017). *WAZA Babirusa Babyrousa spp. Global Species Management Plan*. World Association of Zoos and Aquariums, Gland, Switzerland.
- o Macdonald, A.A. and Pattikawa, M.J. (2017). *Babirusas and other pigs on Buru Island, Maluku, Indonesia – new findings*. *Suiform Soundings* 16 (1): 5-18.
- o Macdonald, A.A. (2017). *Early Chinese awareness of the 'horned' pig (genus Babyrousa)*. *Suiform Soundings* 15 (2): 5-14.
- o Macdonald, A.A. and Johansson, F. (2017). *Walter Kaudern's geographical distribution of Babirusa, 1920*. *Suiform Soundings* 15 (2): 15-22.
- o Pluháček, J. and Gloneková, M. (2017). *Conference on antelope, giraffe, hippo in the 21st century: The first meeting of the IUCN/SSC Hippo Specialist Group*. *Suiform Soundings*, 16 (1), 52-55.
- o Robinson, P. T., Flacke, G. L. and Hentschel, K. M. (2017). *The Pygmy Hippo Story. West Africa's Enigma of the Rainforest*. New York, NY: Oxford University Press.
- o Rode-Margono, J., Treanor, A., and Rowlands, T. (2017). *Teaching pigs to fly: integrative conservation breeding of babirusa – an example by Chester Zoo*. *Suiform Soundings* 16 (1): 19-28.
- o Schmidt, C.R. (2017). *Zur zucht des flusspferd, Hippopotamus amphibius*. *Buletten Berlin* 5: 46-60.

COLLABORATIONS

Action Indonesia (GSMPs for Banteng, Anoa and Babirusa) has more than 45 partners in Europe, North America and Asia – including five zoo associations, three IUCN SSC SGs, Indonesian government authorities, zoos and universities.

CONSERVATION AND RESEARCH

In November 2017, the TAG Chair represented the TAG during the seventh International Tapir Symposium, conducted by the IUCN SSC Tapir SG and hosted by Houston Zoo, USA. A new three-year strategic plan for the conservation work of the Tapir SG was developed, and existing research projects were presented and updated.

A three-year research project for all four species of

Javan warty pig (*Sus verrucosus*) in Cikananga © Florian Richter



Tapirs, financed by the by Fondation Segré, finished its second year and was reported at the Tapir Symposium.

A three-year conservation project on the Javan warty pig in Baluran National Park, Indonesia, was launched in January 2017. The project is managed by Copenhagen Zoo (Denmark) and is financed by by Fondation Segré.

In February 2017 the TAG member and co-Chair of Hippo SG, Jan Pluháček (Ostrava Zoo, Czech Republic), co-organized the conference on Antelope, Giraffe, and Hippo conservation in the 21st century, conducted by three IUCN SSC SGs and hosted by Czech University of Life Science in Prague. Two other TAG members took part in this conference. During the conference the first meeting ever of Hippo SG took place. A new strategy including priorities of the Hippo SG was compiled there. Based on this strategy, seven conservation projects for both hippo species were identified. An overview of these projects was presented at the EAZA Annual Conference in Emmen.

Chester Zoo, UK, achieved substantial media coverage worldwide with camera trap videos/photos of Javan warty pigs. <https://www.actforwildlife.org.uk/conservation-news/first-ever-wild-footage-elusive-warty-pig/>

A full report on the many *ex situ* and *in situ* activities in the context of the GSMPs for Banteng, Anoa and Babirusa can be found in the Action Indonesia Newsletter. https://www.asianwildcattle.org/system/files/2018-01/GSMPNewsletter_Issue2_Dec2017.pdf.

Members of the Chacoan peccary (*Catagonus wagneri*) EEP support *ex situ* and *in situ* conservation of this taxon in Paraguay. Members of the Visayan warty pig EEP are supporting *ex situ* conservation of this taxon in the Philippines.

CATTLE AND CAMELID

TAG Chair: Terry Hornsey (Africa Alive!, Suffolk, United Kingdom)

TAG Vice Chair: James Burton (IUCN SSC, Chester, United Kingdom)

INTRODUCTION

The EAZA Cattle and Camelid TAG made huge progress in 2017, not only with regards to the GSMPs, EEPs and Studbook programmes that fall under its remit, but also with both the conservation and research projects that it is involved in. The TAG continued to work with and forge new links with our counterparts in AZA and Indonesia. Our relationship and ties with the IUCN SSC Asian Wild Cattle Specialist Group (AWCSG) and IUCN SSC Saola Working Group (SWG) continued to be symbiotic, hugely productive and actively encouraged.

BREEDING PROGRAMME DEVELOPMENTS

The TAG has been scheduled to be one of the first to go through the new Regional Collection Planning process in 2018 as part of the implementation of the new population management structure within EAZA. This process will review and determine the roles that species under the remit of the TAG play within EAZA collections as well as outside of EAZA collections.

The TAG was evaluated and achieved very good feedback from the EEP Committee TAG evaluation subgroup. The functioning of the TAG was rated as good.

Both the Gaur (*Bos gaurus*) and Vicuna (*Vicugna vicugna*) EEPs have been evaluated and the results are pending. The European bison (*Bison bonasus*) LTMP meeting was held in December 2017 and brought together different stakeholders in European bison conservation, such as the IUCN SSC Bison SG, Rewilding Europe, True Nature Foundation, Warsaw University, Flaxfield Nature Consultancy, European Bison Conservation Center of Spain and holders within the EAZA community.

Dorothee Ordonneau (Parc Zoologique Cerza, France) stepped down as EEP coordinator for the Banteng (*Bos javanicus*) and the position was filled by Tim Rowlands (Chester Zoo, UK). Douglas Richardson (RZSS Highland Wildlife Park, UK) is stepping down as EEP coordinator for the European bison, but will stay in post until a successor can be found. Merel Zimmermann officially took over as ESB keeper for the African buffalo (*Syncerus caffer caffer* and *Syncerus caffer nanus*) from Danny De Man, both from the

Anoa (*Bubalus depressicornis*) calf born at Manado Rescue Centre, Sulawesi © Manado Rescue Centre



EEO (The Netherlands).

ACHIEVEMENTS DURING THE YEAR

Members of the TAG were involved in the selection of Bach Ma National Park in Vietnam to be the site for the new Annamites Endangered Ungulate Conservation Centre which will facilitate population management efforts for the Saola (*Pseudoryx nghetinhensis*).

PUBLICATIONS

The African buffalo and Vicuna Studbooks were produced. The Anoa (*Bubalus depressicornis*) GSMP Masterplan was published as well as for the Banteng. Rode-Margono, J. (2017). *EEP Report: Saving the Banteng*. Zooquaria 97: 19.

COLLABORATIONS

The TAG continued to work with the IUCN SSC SWG and the Government of Vietnam with the setting up of an Annamites Endangered Ungulate Conservation Centre in Bach Ma National Park, Vietnam.

The collaborative work continued with IUCN SSC AWCSG, AZA, Perhimpunan Kebun Binatang Se-Indonesia (PKBSI – the Indonesian Zoo and Aquarium Association) and Indonesian Ministry of Forestry with managing the Anoa and Banteng GSMPs.

CONSERVATION AND RESEARCH

Research into the efficacy of Improvac® in male Bactrian camels (*Camelus bactrianus*) was initiated.

Anoa and Banteng genetic research continued.

TAG members attended the IUCN SSC SWG meeting in Hue, Vietnam to discuss Saola conservation.

Anoa and Banteng GSMP meetings were held during the

Saola Working Group site visit team to Bach Ma NP, Vietnam © Bill Robichaud.



EAZA Annual Conference in Emmen to discuss *in* and *ex situ* conservation and research.

ANTELOPE AND GIRAFFID

TAG Chair: Sander Hofman (Royal Zoological Society of Antwerp, Antwerp, Belgium)

TAG Vice Chair: Kim Skalborg Simonsen (Givskud Zoo, Givskud, Denmark)

INTRODUCTION

The EAZA Antelope and Giraffid TAG is a large and complex TAG, representing approximately 50 species (and about 90 taxa) held in European zoos. Currently the TAG holds 11 EEPs and 11 ESBs – of which an impressive nine species are part of International Studbooks. The remaining species within the EAZA Region are all monitored by the TAG.

Our mission: To maintain healthy, genetically viable, self-sustaining populations of antelope, okapi and giraffe, representative of a cross-section of these taxa in human care. These populations will be: ambassadors, drawing attention to the plight of these taxa in the wild; a focus for conservation fund-raising; a source of individuals for re-stocking and reintroduction purposes and a research resource to improve husbandry, welfare and *in situ* conservation.

BREEDING PROGRAMME DEVELOPMENTS

2017 was the year Jens-Ove Heckel from Landau Zoo (Germany) stepped down following five years as TAG Chair. We would like to thank him for his huge efforts for the TAG. Under his leadership, the conservation role of the TAG gained significant momentum. Vice Chair Sander Hofman (Royal Zoological Society of Antwerp, Belgium) took over the

Addax (*Addax nasomaculatus*) © Planckendael/ Jonas Verhulst



Chair position with the ongoing support of Vice Chair Kim Skalborg Simonsen (Givskud Zoo, Denmark). The change was announced and effectuated at the EAZA Annual Conference in Emmen. Conservation will be a priority for the TAG in the years to come.

We are also happy to announce the establishment of an Education subgroup, run by Jens-Ove Heckel, Karolína Brandlová and Markéta Grůňová of Safari Park Dvur Kralove (Czech Republic). Alongside conservation, education is at the top of our priorities. Karolína Brandlová also took over as research coordinator from Eulalia Moreno Mañas from Estacion Experimental de Zonas Aridas (Spain). We would like to thank "Lali" for many years of dedicated work. When Sander Hofman stepped up as Chair, the position of Okapi and Giraffe subgroup leader was taken over by Florian Sicks of Berlin Tierpark (Germany).

There have also been a few changes in programme coordinators. Barbora Dobiášová from Prague Zoo (Czech Republic) has taken on the newly established Beisa oryx

(*Oryx beisa*) ESB and Sam Whitbread (Chessington World of Adventures, UK) has taken over the Blesbok (*Damaliscus pygargus phillipsi*) ESB from Sonia Freeman (Colchester Zoo, UK).

ACHIEVEMENTS DURING THE YEAR

The TAG held two meetings during 2017. In February, the TAG had a working mid-year meeting, kindly hosted by the Faculty of Tropical AgriSciences of the Czech University of Life Sciences, Prague. This meeting was primarily aimed at further development of an up-to-date RCP. It was held in advance of the AnGiHip2017 conference on the same grounds, which focused on the Conservation and Research of Antelope, Giraffid and Hippo and proved to be an excellent venue for TAG members to gain knowledge on current in situ developments and to be able to network with global Conservation and Research partners. TAG Chair Jens-Ove Heckel also gave a presentation at the conference, explaining the work of the TAG and the possibilities for cooperation with the zoo community.

The second meeting was during the EAZA Annual Conference in Emmen, where we learned that there will be some major changes in the RCP process associated with the new population management structure. The TAG decided to go for a light version of the RCP in 2018 creating a guidance document for EAZA Members to be able to make sound decisions regarding their collections. The final "new style" RCP will be developed in accordance with the schedule put forward by the EEP Committee.

Additionally, the status of the Saiga (*Saiga tatarica*) was discussed and the role of the *ex situ* community from a conservation perspective. It was decided to engage with the colleagues in Askania Nova zoo (Ukraine) and see how we could support the backup population in Ukraine, as veterinary legislation, climate and space availability for large groups limit the potential for a EEP.

With the continued professionalisation and structuring of the TAG, we welcomed our new logo in Emmen.

During the open session of the EAZA Annual Conference David Mallon, co-Chair of the IUCN SSC Antelope SG gave an excellent presentation to a large audience about the status of Antelopes in the wild and the challenges the conservation community faces in this respect.

2017 was also the year we lost Heiner Engel, someone who was close to many of us. Heiner was zoological director at Hannover Zoo (Germany), and among many other tasks in the zoo world, Addax (*Addax nasomaculatus*) EEP

Heiner Engel © Christian Behrens



Peninsula. The number is growing throughout the years. We hope to be able to continue to stimulate zoos' involvement in conservation and research.

coordinator and Import and Quarantine Advisor to the TAG. Heiner had a severe disease but his death nevertheless came very suddenly, on 5 December. He was only 58 years old. He will be missed.

COLLABORATIONS

The TAG keeps close connections to the IUCN SSC SGs. Several members of the TAG also sit in either the Antelope SG or Giraffe and Okapi SG. During the 2017 meetings, co-Chairs of both SGs attended our meetings. Antelope SG co-Chair David Mallon and Giraffe and Okapi SG co-Chair Julian Fennessy both presented their work.

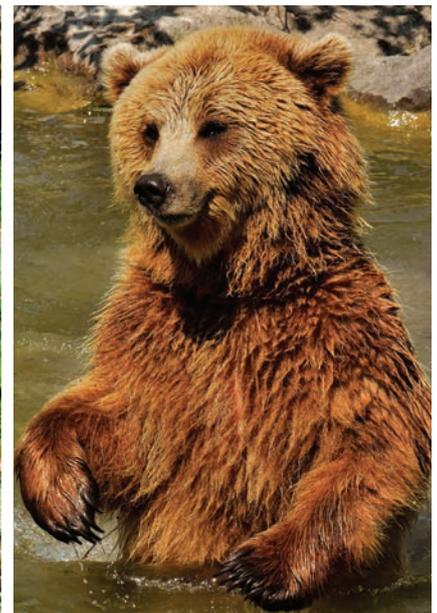
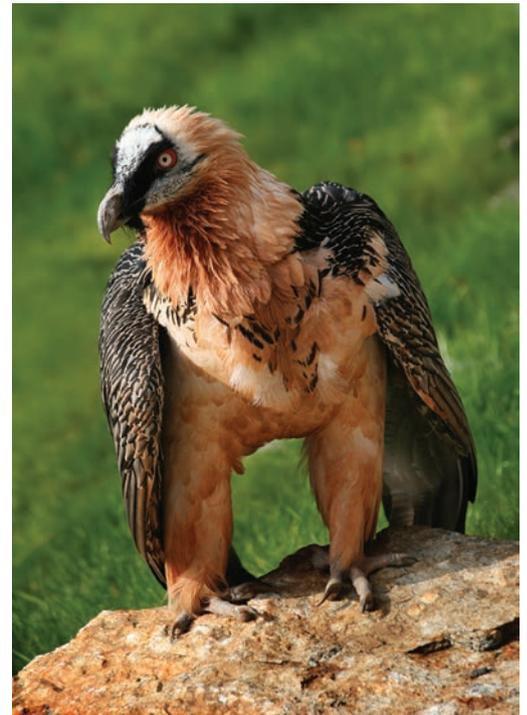
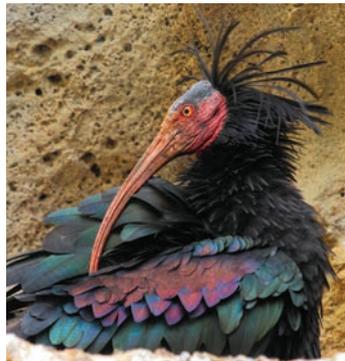
We are happy that, with the exception of the TAG Husbandry Advisor role, all positions have been filled.

CONSERVATION AND RESEARCH

The TAG has both a research and a conservation coordinator. They keep us up-to-date on relevant research and conservation issues. Currently, EAZA Members are involved in about 50 conservation projects carried out in at least 26 range countries in Africa and the Arabian

Long-Term Management Plans, enabled in part by funding from an EU LIFE NGO operating grant, took place for nine species in 2017

Clockwise from top right: European black vulture (*Aegypius monachus*) © Francesco Veronesi; Bearded vulture (*Gypaetus barbatus*) © Richard Bartz; Brown bear (*Ursus arctos*) © Alexas_Fotos; Barbary macaque (*Macaca sylvanus*) © GaiaZOO; European otter (*Lutra lutra*) © Oldiefan; Eurasian griffon vulture (*Gyps fulvus*) © zoosnow; European bison (*Bison bonasus*) © Giorgio Ottolini; Waldrapp ibis (*Geronticus eremita*) © Agustin Povedano; European mink (*Mustela lutreola*) © Tiit Maran



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