



THE EUROPEAN ASSOCIATION OF ZOOS AND AQUARIA

TAG Reports 2019



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Cover image: Desertas wolf spider (*Hogna ingens*) © Emanuele Biggi

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INTRODUCTION

This Annual Report provides an overview of the many and diverse activities that EAZA's 42 Taxon Advisory Groups (TAG) were involved in over the course of 2019.

After its successful launch in 2018, the implementation of the new EAZA population management structure continued with Regional Collection Planning (RCP) meetings held for Freshwater Teleost, Reptiles (Chelonians), Waterfowl and Pelecaniformes, Hornbill, Callitrichids, Old World Monkeys, Equids and Deer. Upon completion RCP publications are made available on the Member Area of the EAZA website.

The RCP process informs which species EAZA will actively manage across its Member zoos and aquariums as part of an EAZA Ex situ Programme (EEP). Each EEP will then develop its own tailor-made Long-Term Management Plan (LTMP), which outlines the strategy towards achieving the species-specific goals set as part of the RCP process. In 2019, LTMPs were published for nine species: Eurasian griffon vulture (*Gyps fulvus*), European black vulture (*Aegypius monachus*), bearded vulture (*Gypaetus barbatus*), ring-tailed lemur (*Lemur catta*), gelada baboon (*Theropithecus gelada*), spotted hyena (*Crocuta crocuta*), striped hyena (*Hyaena hyaena*), Amur leopard (*Panthera pardus orientalis*) and European bison (*Bison bonasus*).

The process of developing the RCPs and LTMPs is facilitated by the team at the EAZA Executive Office, including the EAZA Population Management Centre set up in 2018. The content and approval fall under the responsibility of the TAG Chair and TAG members - for RCPs - and the EEP coordinator and (elected representatives) of the EEP participants - for LTMPs.

This report clearly demonstrates the many and varied species conservation work that the TAGs and EEPs are involved in. Cooperation with field conservation partners and experts including, but not limited to, IUCN Specialist Groups has been strong and this, amongst others, contributed significantly to the ability to assess the *ex situ* conservation roles for our EEPs as part of the new RCP process.

The five subgroups under the Fish and Aquatic

Invertebrate TAG split to become separate TAGs on their own merit in 2019. The Fresh Water Teleost TAG was the first of these to go through the new RCP process which, due to the vast amount of species and their specific reproductive biology, was as challenging as it was successful. The process contributed to finding the right EEP structures to manage the many highly threatened species in this TAG. At the EAZA Annual Conference in Valencia, Spain, the new conservation campaign 'Which Fish?' was launched, following the epic closure of the Silent Forest campaign. One of the three priority areas of this campaign is focussed on sustainable use and management of fish and other marine species in EAZA collections which has us look forward to the Elasmobranch, Marine Teleost, Jelly Fish and Coral RCP meetings in the years to come.

In addition to the 57 'new style' EEPs that were approved by the end of 2019, the TAGs will continue to oversee the 'old style' EEPs (186) and European Studbooks (150) until all have completed their new style EEP process by 2023.

Another core task of the TAGs is (to coordinate) developing EAZA Best Practice Guidelines that reflect the best practice management in human care of the respective taxa. With ten guidelines completed, covering 12 species, approved and made freely available on the EAZA website (www.eaza.net), 2019 was a productive year in this regard.

In addition to the above-mentioned topics EAZA TAGs worked on a number of other tasks including providing expertise input for EAZA's lobby work at the European Union and representation with other organisations. Most notably in 2019 was the input of the TAG provided to the species-listing and policy proposals that were discussed during the 18th CITES Conference of the Parties in Geneva, Switzerland.

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, programme coordinators, TAG and Committee members for their enthusiasm and hard work in 2019.

GLOSSARY

- AZA: Association of Zoos and Aquariums
BPG: Best Practice Guidelines
CITES: Convention on International Trade in Endangered Species
EEO: EAZA Executive Office
EEP: EAZA Ex situ Programme
ESB: European Studbook
EUAC: European Union of Aquarium Curators
GSMP: Global Species Management Plan
ICAP: Integrated Collection and Assessment Planning
IUCN: International Union for the Conservation of Nature
LTMP: Long-Term Management Plan
MON-P: Monitored-by-designated-person Programme
MoU: Memorandum of Understanding
RCP: Regional Collection Plan
SG: Specialist Group
SSC: Species Survival Commission
SSP: Species Survival Plan
TAG: Taxon Advisory Group
ZAA: Zoo and Aquarium Association
ZIMS: Zoological Information Management Software
ZSL: Zoological Society of London

TERRESTRIAL INVERTEBRATE

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

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

INTRODUCTION

2019 was another busy year for the EAZA Terrestrial Invertebrate Taxon Advisory Group (TITAG). Instead of focusing on the production of the 1st volume of the Regional Collection Plan (RCP), the main efforts have been put towards the development and creation of the EAZA Ex situ Programmes (EEPs) that were identified during the RCP Workshop at Chester Zoo (UK).

The TITAG had a single meeting this year at the EAZA Annual Conference held in Valencia, Spain. Presentations included breeding successes with dragon-headed katydids (*Eumegalodon blanchardi*) by Singapore Zoo (Singapore) and the conservation programme for the noble chafer (*Gnorimus nobilis*) by Copenhagen Zoo (Denmark).

POPULATION MANAGEMENT PROGRAMME DEVELOPMENTS

All of the current breeding programmes under the remit of the TITAG are in the process of being “upgraded” to the new style EEPs, with the Gooty ornamental spider (*Poecilotheria metallica*) and Desertas wolf spider (*Hogna ingens*) being the first through. One new EEP has been created for Seychelles millipedes (*Sechelleptus sechellarum*) which is being coordinated by Zak Showell (Shaldon Wildlife Trust, UK). We are still developing new EEPs for several species and will be putting out a call for Coordinators in 2020, as well as making plans for phase two of the RCP for the TITAG.

In August, a workshop meeting was held in Tahiti to discuss the continued development of an action plan for island species of snail, at which several colleagues from the *Partula* EEP were present. An update to the current *Partula* action plan was proposed and it also coincided with the release of snails from several EEP collaborating institutions. In total, almost 16,000 snails have been repatriated to French Polynesia! Further surveying and monitoring are underway to ensure the efficacy of the *in situ* aspect of the programme, and further releases are planned in 2020.

A meeting was held in Madeira, Portugal in April to “catch-up” with the government and local environmental agency

Noble chafer (*Gnorimus nobilis*) breeding facilities at Copenhagen Zoo
© Copenhagen Zoo



regarding the conservation strategy for the Desertas wolf spider. Currently habitat restoration work is underway and nearing completion, with a good success rate so far. Monitoring of the wild population is ongoing and although there has been no current decline in numbers, the *ex situ* population is viewed to still be important to the survival of the species, showing the importance of EEPs.

Revised Best Practice Guidelines (BPG) have been published for the Polynesian tree snail EEP, and a review of the Frigate beetle (*Polposipus herculeanus*) guidelines is entering the final draft stage, as are the ones for the dragon-headed katydid.

CONSERVATION AND RESEARCH

A collaborative project between Chester Zoo and the Zoological Society of London (ZSL) on the Bermudan land snail (*Poecilozonites bermudensis*) saw the release of over four thousand animals back into the wild after three years of intensive breeding and planning in captivity for the return of this wonderful endemic species. Initial populations were released to Nonsuch Island, off the coast of Bermuda, where strict quarantine conditions are in place to prevent invasive species gaining a foothold. Populations are being monitored by the novel use of fluorescent markers - something not trialed before with snails - with

Thousands of rare greater Bermuda snails (*Poecilozonites bermudensis*) returned to the wild © Chester Zoo



excellent success. Further releases are planned for 2020, also potentially for the lesser Bermudan snail (*Poecilozonites circumfirmatus*).

Copenhagen Zoo has been working with a fantastic European beetle species – the noble chafer. This species was thought to be extinct in Denmark, but was discovered in 2012 at two localities. A team began breeding the species in human care but the majority of the effort needed was to provide suitable habitat for the species to sustain itself, so nest boxes and specially prepared trees were created. It is hoped that the work on this will also be able to be extended to other endangered saproxylic species of invertebrates in the future.

ADDITIONAL COMMENTS

The following articles were published in 2019:
 Outerbridge, M. E., Ovaska K. and Garcia, G. (2019). *Back from the brink - recovery efforts for endemic land snails of Bermuda*. Tentacle 27: 16-18
 Coote, T. *et al.* (2019). *Fourth year of Partula species reintroductions into natural habitat on Tahiti and Moorea*. Tentacle 27: 35-38

FRESHWATER TELEOST

TAG Chair: Anton Weissenbacher (Vienna Zoo, Vienna, Austria)

INTRODUCTION

In 2019, the former EAZA Fish and Aquatic Invertebrate TAG (FAITAG) was split into five separate TAGs, one of them being the EAZA Freshwater Teleosts TAG (FT TAG). The main task of the year thus was developing a strategy for the new TAG and guidelines for day-to-day working routines.

POPULATION MANAGEMENT PROGRAMME DEVELOPMENTS

In the course of a RCP meeting in Amsterdam, we agreed on a list of 41 fish families that should be managed in the future in the form of an EEP.

ACHIEVEMENTS DURING THE YEAR

In November, a RCP-meeting was held in Artis Zoo, Amsterdam, with 15 participants (three participants from the EAZA Executive Office (EEO), 11 participants from 10 different EAZA institutions and one participant from

Lover's Lake killifish (*Fundulus relictus*) © Anton Weissenbacher



The Smithsonian National Zoo and Conservation Biology Institute, USA). During this meeting, we focused on fish families, rather than on species. Since there are more than 200 freshwater fish families (comprising around 16,000 species) the first step was to identify those with highest conservation value. Our criteria was based on threats of extinction but also on practical reasons, e.g. is it possible to keep and breed specific species of the family in question in zoo facilities? Together we decided to exclude fish families endemic to highly developed countries, e.g. Japan or Canada, from our high priority list. In the course of the 3-day workshop, long and fruitful group discussions with important contributions from EAZA population biologists and fish experts resulted in a list of 41 fish families, that in our opinion, should be managed in the future.

COLLABORATIONS

The members of the new FT TAG have always been collaborating with a large number of academic, governmental and non-governmental organisations to realise the objectives of numerous conservation and research projects for many years. For instance, Vienna

Zoo (Austria) has been collaborating for many years with the Department of Environment and Natural Resources of the Government of Bermuda to work on the only two freshwater fish species endemic to the Bermudas (*Fundulus bermudae* and *Fundulus relictus*).

CONSERVATION AND RESEARCH

Cologne Zoo (Germany) has obtained several highly endangered Madagascan freshwater fish species from Toronto Zoo and several US zoos, and has already managed to breed them, with some of the offspring being placed in other EAZA zoos. Hopefully, we will manage to build a self-sustaining population within the EAZA community.

MARINE TELEOST

TAG Chair: Attila Varga (Sóstó Zoo, Sóstófürdő, Hungary)

INTRODUCTION

In 2019, the EAZA Marine Teleost TAG was formed as a result of the split of the Fish and Aquatic Invertebrate TAG. In October, at the yearly European Union of Aquarium Curators (EUAC) meeting held at Nausicaá, France, Daniel Abed Navandi (Vienna Aquarium, Austria) announced his stand-down from the Marine Teleost TAG Chair position. In November, Attila Varga (Sóstó Zoo, Hungary) indicated his interest in taking the role, and he was approved as the new Chair by the EEP Committee in February 2020. All the collected data was transferred from the former Chair to the new one and the refreshed TAG information was sent to all the participants of the last meeting held at Vienna Aquarium (June 2018). At the same time, they were invited to continue the future shaping work of the TAG.

FUTURE DEVELOPMENTS

The TAG is aiming to work on the following topics during the planned 2020 meetings:

- Regular monitoring of the Marine Teleost species kept under human care via questionnaires, ZIMS, etc.
- Regular evaluation of the gained data in order to modify the RCP and meet the requirements of the changing world
- Setting up population management programmes for the most popular species. The Marine Teleost TAG contains several thousand species, so it is extremely difficult to keep genetically healthy populations from each species in only a few hundred aquariums. Due to this, the popular species programmes should be focused on decreasing the pressure on and supporting the sustainable use of the wild populations
- Setting up population management programmes for the species under risk. The first Teleost TAG meeting held at Vienna last year focused on the evaluation of fish families according to the directives of the RCP
- Setting up a shared public education programme about



Cinnamon clownfish (*Amphiprion melanopus*) © Sóstó Zoo

Hi fin red banded goby (*Stonogobiops nematodes*) © Sóstó Zoo


Marine Teleost species. The TAG should encourage the environmental education with ambassadors like the popular 'Nemo' species (*Amphiprion ocellaris*) and with fascinating species like seahorses (*Syngnathidae*), humphead wrasse (*Cheilinus undulatus*) and the cleaner wrasse (*Labroides dimidiatus*). The shared public education programme can also support standardising the message from the aquarium world concerning our efforts on raising public awareness surrounding the exploitation, pollution and diminishing coral reefs as well as our scientific work (with the help of our ambassadors) under human care. As this programme and topic aligns with the goals of the new EAZA Conservation Campaign called "Which Fish?" focusing on the sustainable use of fish in human consumption, animal feed and the acquisition of species for collection plans, the cooperation and participation of the TAG in this campaign is essential. Educational specialists who can manage this field are welcomed in the TAG

FUTURE COLLABORATIONS

The Marine Teleost TAG is planning to set up research groups focused on the breeding of chosen species or taxonomical groups. Furthermore, the TAG plan includes discussing the possibilities of collaborative cooperation with other regional Marine Teleost TAGs, *ex situ* and *in situ* researchers and ornamental fish farms.

ELASMOBRANCH

TAG Chair: Max Janse (Royal Burgers' Zoo, Arnhem, the Netherlands)

INTRODUCTION

In 2019, the EEP Committee officially agreed to split the Fish and Aquatic Invertebrate TAG into five separate TAGs, the EAZA Elasmobranch TAG being one of them. So, this is our first official annual report as a TAG. Our work started in

2013 after a first RCP meeting in London Zoo (UK). In 2019 the TAG managed nine European Studbooks (ESBs) and 30 programmes monitored by a designated person (MON-P). We have established a Steering Committee consisting of a Chair, three ESB and three MON-P Coordinators. In 2017, a Veterinary advisory group was formed with four elasmobranch specialists.

POPULATION MANAGEMENT PROGRAMME DEVELOPMENTS

In total 36 Coordinators work on the different programmes. In 2019, a new ESB keeper was found for the two sawfish species (*Pristis microdon* and *P. zijsron*). Also new MON-P Coordinators started for the American stingray (*Hypanus americanus*), the Pelagic stingray (*Pteroplatytrygon violacea*), the White-blotched river stingray (*Potamotrygon leopoldi*), the Bullray (*Aetomylaeus bovinus*) and the Nurse shark (*Ginglymostoma cirratum*).

In 2020, a RCP meeting will be organised within the TAG. The first preliminary work has been done in 2019.

Within MON-P for Spotted ratfish (*Hydrolagus collieri*), significant results were obtained in late 2018-2019 at Planet Ocean Montpellier (France), with a larger number of eggs laid and more hatchlings compared to previous years. Another special breeding result this year was within the MON-P for Cownose rays (*Rhinoptera marginata*) from two young Lusitanian cownose rays at Aquazoo, Dusseldorf (Germany).

ACHIEVEMENTS DURING THE YEAR

In the end of 2019, an extensive veterinary questionnaire was sent to all programme participants. This questionnaire concentrated only on the programme species. An Elasmobranch Husbandry and Health Management Workshop was organised by Attila Varga and Endre Papp at Sóstó Zoo, Hungary on 15-17 April. This was done in collaboration with the Elasmobranch TAG. In total 50 participants from 16 countries had three days of lectures and workshops.

COLLABORATIONS

The Association of Zoos and Aquariums (AZA) is organising a worldwide network under the SAFE programme called International Census of Chondrichthyans under Human Care (ICCHC). Three European representatives from the Elasmobranch TAG cover the European region ensuring close collaboration between AZA and EAZA: Ana Ferreira

Young spotted ratfish (*Hydrolagus colliei*) at Planet Ocean Montpellier, France © Nicolas Hirel



(Lisbon Oceanarium, Portugal) for Northern Europe, Carlos Taurá (Valencia Aquarium, Spain) for Southern Europe and Max Janse (Royal Burgers' Zoo, the Netherlands) for Middle Europe. In 2019, the number of European participants within the web based world census (<https://sharksandraysproject.com>) has increased.

CONSERVATION AND RESEARCH

At the 2019 EUAC conference in Nausicaá, France a meeting was arranged between the Elasmobranch TAG and the WWF Netherlands. This meeting was a first introduction to a possible future collaboration between an *in situ* reintroduction programme of some endangered European species and the Elasmobranch TAG. In 2020 this possible collaboration will be further elaborated. Another

close cooperation has been set up between the MON-P for Angel shark (*Squatina squatina*) and an *in situ* Angel Shark Programme in the Canary Islands (Spain).

Since 2016 a special fund has been started to conduct genetic research within the Fish and Aquatic Invertebrate Taxon Advisory Group and could be setup thanks to a kind financial offer from Lisbon Oceanarium (Portugal). In 2019, the fund was used for different genetic elasmobranch studies, e.g. paternity testing of young spotted eagle rays (*Aetobatus ocellatus*) in Wrocław Zoo (Poland) and Royal Burgers' Zoo. Extensive taxonomic research has been done within the ESB for the Bluespotted maskray (*Neotrygon kuhlii*). Latest research studies have shown the species *N. kuhlii* is actually 11 different species.

Furthermore, Lisbon Oceanarium is funding several conservation projects focused on elasmobranch species (see www.oceanario.pt): Manta Catçlog Azores, Fly with Bull Rays, Angel Shark Project, Islandshark, Findrayshark and Shark Attract.

CORAL

TAG Chair: Guido Westhoff (Hamburg Zoo, Hamburg, Germany)

INTRODUCTION

The EAZA Coral TAG is the fourth TAG resulting from the split of the former Fish and Aquatic Invertebrate TAG. The



Participants of the Elasmobranch Workshop at Sóstó Zoo © Sóstó Zoo

objectives of the Coral TAG are mostly identification and husbandry based, and at this time, less on breeding. Based on the initial survey from 2018 on institutional collections within EAZA, the absence of data on provenance and often identification beyond genus level is the main issue for corals, a plan of action is needed to address this problem.

POPULATION MANAGEMENT PROGRAMME DEVELOPMENTS

In 2019, we had 16 institutions holding 226 species of corals. No population management programmes have been created so far, as the priority action is set on identification.

ACHIEVEMENTS DURING THE YEAR

During the EUAC 2019 conference, a working group discussed the options that are available at hand. Because of the lack of data on provenance, there are only two options to proceed:

A) Identify the corals by means of morphological and genetic traits, build a database and catalogue, try to follow up different lineages, and maximise the spread of species across institutions.

This option is the only option for all aquariums with large and long-term grown coral tanks, that cannot start from zero.

Royal Burgers' Zoo aquarium (the Netherlands) has taken a lead for this option with Max Janse and Paul Pearce-Kelly (London Zoo, UK), and the databank will be supported by several institutions.

B) Start over again with clearly identified corals from known locations. Build a coral arch for 2000 species with known provenance.



Working Group at the EUAC meeting 2019 at Nausicaá © Björn Källström

This option will be followed by the Oceanographic Museum of Monaco (Monaco), led by Nadia Ounaïs together with a board of world known experts.

COLLABORATIONS

The following institutions are collaborating for genetic analyses: Maritime Museum and Aquarium Gothenburg (Germany, Björn Källström), London Zoo (Paul Pearce-Kelly), Royal Burgers' Zoo (Max Janse), Hamburg Zoo (Germany, Guido Westhoff) and the Natural History Museum of London (UK, Jamie Craggs).

JELLYFISH

TAG Chair: Hugo Batista (Lisbon Oceanarium, Lisbon, Portugal)

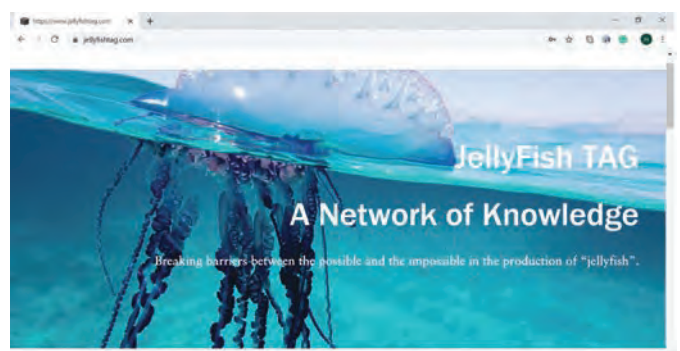
INTRODUCTION

The EAZA Jellyfish TAG is quite different from other TAGs. Its main goal is the sharing of information about who has or breeds which species of jellyfish and of knowledge about these animals. In order to meet these targets, in 2019, the TAG created a website that can be used to access information about jellyfish production. It was presented at the 2019 EUAC conference in Nausicaá (France).

ACHIEVEMENTS DURING THE YEAR

The biggest achievement was the creation, thanks to the contribution of several institutions, of a website hosting a database: www.jellyfishtag.com gathers and shares information about jellyfish production.

This website can be accessed by all EUAC and EAZA members (email the TAG Chair for the password). Anyone interested is invited to take part in the project. A request was made for this website to be linked to the EAZA and EUAC websites in order to acquire more participants. The aim now is that every year at least five new species and specialists are added to this project.



JellyFish TAG website © Hugo Batista

For now, it's possible to access the database and have information about the production of the following jellyfish species: *Aurelia aurita*; *Chrysaora quinquecirrha*; *Chrysaora pacifica*; *Lychnorhiza lucerna*; *Pelagia noctiluca*; *Phyllorhiza punctata* and *Rhopilema esculentum*.

COLLABORATIONS

Several people from different institutions have contributed to the creation of the database and were nominated as specialists for a given species. Find below the list of species, the associated specialist and the institution to which they belong:

Aurelia aurita: Tom Rowe, The Deep (UK); *Chrysaora pacifica*: Tom Rowe, The Deep; *Chrysaora quinquecirrha*: Raul Gouveia, Lisbon Oceanarium (Portugal); *Phyllorhiza punctata*: Hugo Batista, Lisbon Oceanarium; *Lychnorhiza lucerna*: Luke Hirst, Sea Life London Aquarium (UK); *Rhopilema esculentum*: Luke Hirst, Sea Life London Aquarium; *Pelagia noctiluca*: Ester Alonso, Loro Park (Spain).

AMPHIBIAN

TAG Chair: Gerardo Garcia (Chester Zoo, Chester, United Kingdom)

TAG Vice Chairs: Olivier Marquis (Paris Zoo, Paris, France) and Benjamin Tapley (London Zoo, London, United Kingdom)

INTRODUCTION

There have been no changes to the core membership of the EAZA Amphibian TAG (ATAG) in 2019.

Two ATAG meetings were held, the first at Nordens Ark

(Sweden), the second during the EAZA Annual Conference in Valencia (Spain).

POPULATION MANAGEMENT PROGRAMME DEVELOPMENTS

A new EEP has been approved for the Montseny brook newt (*Calotriton arnoldi*) with Francesc Carbonell Buiras as Coordinator (Forestal Catalana SA. Generalitat de Catalunya, Spain).

ACHIEVEMENTS DURING THE YEAR

EAZA BPG were completed for the mountain chicken frog (*Leptodactylus fallax*) via a collaboration between Chester Zoo, Jersey Zoo, London Zoo and Paignton Zoo (UK) and typhlonectid caecilians (includes *Typhlonectes compressicauda*, *T. natans* and *Potomotyphlus kaupii*) thanks to the collaboration between London Zoo, Jersey Zoo, Chester Zoo, the Natural History Museum of London (UK) and Sedgwick County Zoo (USA).

The ATAG is working with the EEO to prepare a RCP for salamanders of the Western Palearctic in light of the threat posed by the pathogen *Batrachochytrium salamandrivorans*. Gerardo Garcia (Chester Zoo) oversaw the import of the Lake Titicaca water frogs (*Telmatobius culeus*) from Denver Zoo (USA) to several EAZA collections and they are already breeding.

COLLABORATIONS

The ATAG collaborated with different academic, governmental and non-governmental organisations to realise the objectives of different conservation and



A recently metamorphosed Malayan horned frog (*Megophrys nasuta*) © Wildlife Reserves Singapore / David Tan

research projects. These include the governments of Montserrat and Dominica for the mountain chicken frog; the Australian Museum and Hoang Lien National Park, in Vietnam, for work on amphibians; Cologne Zoo (Germany) is collaborating with Citizen Conservation (CC) programme initiated by Frogs and Friends; several groups of bony-headed toads (*Ingerophrynus galeatus*) and the Vietnamese crocodile newt (*Tylototriton vietnamensis*) were transferred to CC members.

CONSERVATION AND RESEARCH

The collaboration between Chester Zoo, Paris Zoo, Paris VI University, National Museum of Natural History (France) and University of Salford (UK) is studying calls of wild and captive golden mantella (*Mantella aurantiaca*) to establish whether any differences could compromise future translocation programmes.

Paris Zoo is collaborating with the Herpetological Association of Bosnia and Herzegovina, Sarajevo University and the French Urodela Group in the establishment of a conservation programme for the possibly extinct in the wild Bosnian alpine newt (*Ichthyosaura alpestris reiseri*). Molecular analysis comparing wild and captive animals indicate there may still be wild *I. a. reiseri*. Paris Zoo is providing technical support to the NGO L'homme et l'environnement for amphibian inventories in the Vohimana reserve (Madagascar).

Jersey Zoo collaborated with the States of Jersey and released 5,800 tadpoles into local ponds during the annual agile frog (*Rana dalmatina*) head-starting project. They also developed a project with Cardiff University looking at population genetics of Critically Endangered frog species in the Ambohitantely reserve (Madagascar).

Chester Zoo continued efforts to conserve the Lake Patzcuaro salamander (*Ambystoma dumerilii*); *in situ* work has yielded baseline information on the status of the remaining population and has allowed for key areas to be determined and for sustainable fishing inside the lake.

Düsseldorf Zoo (Germany) supported efforts to conserve the Lake Titicaca water frog (*Telmatobius culeus*); a breeding container will be purchased and equipped for the species (Centro K'ayra of the Museo de Historia Natural Alcide d'Orbigny); Düsseldorf Zoo and the IVÖR Institute carried out chytrid surveillance on the amphibians in Düsseldorf; a Bachelor's student from Heinrich Heine University (Germany) undertook a research project on individual recognition of the Marañón poison frogs (*Excidobates*

mysteriosus) at the zoo using photos and computer programmes.

Barcelona Zoo (Spain) continues to collaborate with the Balearic Government on the Mallorcan midwife toad (*Alytes muletensis*): two releases of of toads bred in human care were undertaken at a location where the species was not previously found. They also incorporated 26 Montseny brook newts from the western population into their conservation breeding programme, and a translocation is planned for spring 2020. With Chester Zoo, they also released 139 Montseny brook newts. Habitat suitability models have been developed to identify new release sites and population models to secure the long-term programme both *in* and *ex situ*.

The mountain chicken frog recovery programme (involving Jersey Zoo, Chester Zoo, Nordens Ark, Bristol Zoo Gardens and London Zoo) translocated 27 frogs bred in human care to enclosures on Montserrat. The habitat is being manipulated so that it is suitable for the frogs but not for the chytrid fungus that has mediated their decline. Keepers from partner institutions travelled to Montserrat to assist in monitoring the frogs.

Bristol Zoo Gardens focused on the lemur leaf frog (*Agalychnis lemur*) and research is ongoing into the incidence of corneal lipidosis. They secured a partnership with Shaldon Wildlife Trust (UK) and a grant from the Amphibian Survival Alliance for *in situ* research efforts that include documenting behavioural observations and cataloguing individual back patterns.

Cologne Zoo's international research team described a new frog species (*Amolops ottorum*) and new records of megophryids in Vietnam were published. They documented range extensions and larval stages for *Gracixalus quang*. Four bachelor theses resulted in Cologne Zoo publishing a report on the illegal wildlife trade in central Lao PDR with a focus on amphibians. This report supports the application of Hin Nam No National Biodiversity Conservation Area becoming a UNESCO heritage site. Cologne Zoo's German-Vietnamese cooperation submitted a successful proposal to include newts (*Tylototriton* and *Paramesotriton*) on CITES Appendix II. The zoo also repatriated Vietnamese crocodile newts (*Tylototriton vietnamensis*) bred in human care to Vietnam. They opened an exhibition and rearing station for the regionally threatened green toad (*Bufo viridis*). Population genetic analyses and epidemiological studies were conducted to contribute to a better-informed conservation. Larvae reared at Cologne Zoo were also

Vietnamese crocodile newts (*Tylotriton vietnamensis*) at Cologne Zoo prior to repatriation to Vietnam © Thomas Ziegler



repatriated into the wild.

Copenhagen Zoo (Denmark) continued long-standing efforts to conserve regionally threatened amphibians by releasing 256 European fire-bellied toad (*Bombina orientalis*) tadpoles; 17,301 tadpoles and 128 adult natterjack toads (*Epidalea calamita*) and 36,500 tadpoles and 40 adult green toads (*Bufo viridis*).

Singapore Zoo (Singapore) achieved an institutional first in breeding the Malayan horned frog (*Megophrys nasuta*). The zoo is undertaking a study on feeding regimes for captive nocturnal frogs by making behavioural observations of these frogs when they are fed at different times of day.

London Zoo published research papers on the first case of pseudohermaphroditism in a salamander and the effects of UVB provision on Mallorcan midwife toad larvae. They published research resurrecting the synonymised South China giant salamander (*Andrias sligoi*); the team visited Fujian Province to look at the feasibility of establishing a programme to locate, describe and conserve an undescribed species of giant salamander. They also supported EDGE Fellows working on four highly threatened amphibians in Asia.

Zürich Zoo (Switzerland) together with Wildlife Conservation Society (WCS) Colombia, and the National Park Service of Colombia signed conservation agreements

with landowners in protected areas to mitigate species-specific threats as part of their wider amphibian monitoring programme. Zoo staff trained WCS veterinarians in Colombia in chytrid and ranavirus molecular diagnostics. This workshop led to setting up an in-country service centre to monitor pathogen presence in protected areas. A Conservation Needs Assessment workshop organised by the three partners identified Lehmann's poison frogs (*Oophaga lehmanni*) as a priority species requiring *ex situ* breeding efforts to combat the pressures of the illegal wildlife trade. A breeding programme of these chytrid-free frogs was established in Cali Zoo (Colombia). The partnership organised a frog festival to raise awareness and initiate discussions in the local community. Cali and Zürich Zoo also launched a study to estimate population parameters for the Endangered golden poison frog (*Phylllobates terribilis*).

ADDITIONAL COMMENTS

Many papers were co-authored by members of the Amphibian TAG in 2019. Please see the publication list in the Annex document of this EAZA Annual Report.

REPTILE

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

Vice Chairs: Ivan Cizelj (Zagreb Zoo, Zagreb, Croatia), Matt Goetz (Jersey Zoo, Jersey, United Kingdom), Fabian Schmidt (Basel Zoo, Basel, Switzerland) and Guido Westhoff (Hamburg Zoo, Hamburg, Germany)

INTRODUCTION

The EAZA Reptile TAG (RTAG) is an expert group under the EAZA structure focussed on reptiles. Its scope is extremely wide, considering the taxonomic richness of reptiles (approximately 10,500 species) and their enormous variation (from some tiny species of squamate reptiles to giant species of crocodiles, chelonians or snakes). In 2019, the RTAG consisted of 29 members and four internal advisors. It maintained seven EEPs and 29 ESBs, with a wide geographical representation of involved zoos. This is all done whilst respecting conservation requests, research issues, space availability, ethics, safety and other associated aspects. Simultaneously, the RTAG is a platform where EAZA reptile specialists, as well other professional colleagues, can meet, discuss and disseminate information and work to improve expertise in reptile husbandry, develop relevant guidelines, protocols and recommendations.

POPULATION MANAGEMENT PROGRAMME DEVELOPMENTS

The Chelonia subgroup of the RTAG carried out its first new style RCP workshop in May and the RCP was formally approved by end of the year. All nine previous EEPs and ESBs were rolled over into new EEPs and another 11 EEPs were created, seven of which had new Coordinators confirmed by the end of the year. This first RCP focused mainly on *Geoemydidae* as the most threatened group within Chelonia plus *Testudinidae* and the existing ESBs; a second RCP workshop will cover the remaining species to be assessed. We like to thank our esteemed colleagues who joined the workshop as external advisors, the EAZA office facilitation team and most of all our fabulous hosts, Nordens Ark, Sweden, for making this first Reptile TAG RCP a veritable success!

EAZA Best Practise Guidelines were produced by Mark de Boer (Rotterdam Zoo, the Netherlands) for the Egyptian tortoise (*Testudo kleinmanni*) and by Matt Goetz (Jersey Zoo,

UK) for the Ploughshare tortoise (*Astrochelys yniphora*).

The RTAG's Sea Turtle Working Group in collaboration with EUAC, chaired by Mark de Boer, organised a workshop with the focus on writing BPG for sea turtles in European aquariums.

Linn Lagerstrom (Parken Zoo, Sweden) published a studbook for the Radiated tortoise ESB, Ivan Reháč (Prague Zoo, Czech Republic) for the Gharial (*Gavialis gangeticus*) and Thomas Ziegler (Cologne Zoo, Germany) for the Philippine crocodile (*Crocodylus mindorensis*).

Markus Wilder (Wingham Wildlife Park, UK) was approved as the new ESB keeper for Savu Island python (*Liasis savuensis*), and Ivan Reháč (Prague Zoo, Czech Republic) as the new ESB keeper for Cuban crocodile (*Crocodylus rhombifer*).

ACHIEVEMENTS DURING THE YEAR

Two RTAG meetings were held in 2019. The first meeting - a joint meeting with the Amphibian TAG - in May 2019 was hosted by Nordens Ark. Attention was focused on chelonians as significant external chelonian specialists and overseas guests (from AZA and South East Asian Zoos Association - SEAZA) were present due to the RCP workshop held just before. Other topics discussed involved reptile research, veterinary issues, programme updates and proposals, herpetology in Sweden, and crocodile training with Iri Gill (Chester Zoo, UK).

The second meeting was held during the EAZA Annual Conference in September. Amongst others, Fabian Schmidt (Basel Zoo, Switzerland) presented his long-term field study on Pancake tortoises (*Malacochersus tornieri*), and Claudia Tay (Singapore Zoo, Singapore) summarised her comparative study on chelonian diet. Examples were provided by Thomas Kölpin (Wilhelma Zoo, Germany) and Michel Ansermet (Aquatris Lausanne, Switzerland) on how to realise logistically difficult transfers of big and/or old crocodiles.

Remarkable breeding successes were achieved - e.g. the first second generation captive breeding of the crocodile monitor lizard among EAZA institutions was achieved by Singapore Zoo.

The first, widely applicable technique of molecular sexing in varanids, Gila monsters, and beaded lizards, where reliable determination of sex based on external morphology is dubious, was introduced by Michail Rovatsos, Lukáš Kratochvíl, Ivan Reháč and Petr Velenský (Charles University and Prague Zoo, Czech Republic).

Participants at the Chelonian Regional Collection Plan workshop at Nordens Ark, Sweden © Matt Goetz



COLLABORATIONS

The RTAG cooperated closely with internal EAZA partners – e.g. EAZA Amphibian TAG, EEP Committee, Research Committee, Population Management Advisory Group – and a number of external partners, especially from the field of reptile conservation and research. They furthered their cooperation with partners from other regional associations (e.g. AZA and the Zoo and Aquarium Association ZAA) and continued to develop a close cooperation with the International Union for Conservation of Nature (IUCN) Specialist Groups (SG), Task Forces and other IUCN umbrella organisations – in particular the Crocodile SG, Iguana SG, Monitor Lizard SG, Skink SG, Tortoise and Fresh-water Turtle SG, CSG Tomistoma Task Force, 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).

Examples of collaborations include:

- Münster Zoo (Germany) and their Angkor Centre for Conservation of Biodiversity in Cambodia, partnering with local authorities through the need to take on more confiscated species
- Hamburg Zoo (Germany) hosted a reptile focused meeting for the German Zookeeper Association (Bund Deutscher Zootierpfleger) with ~100 participants
- Chester Zoo was involved in a Reptile and Amphibian Management Workshop for Indonesian rescue centres in collaboration with the Indonesia Herpetofauna Foundation, Cikananga Wildlife Centre and the Indonesian Forestry Department
- Singapore Zoo hosted a training workshop to develop techniques for artificial insemination of large softshell turtles in collaboration with Turtle Survival Alliance (USA),

The 1st edition of the European Studbook for the Gharial (*Gavialis gangeticus*) was issued in 2019 © Petr Hamernik



Wildlife Conservation Society (USA) and Leibniz Institute for Zoo and Wildlife Research (Germany)

CONSERVATION AND RESEARCH

RTAG's representatives were active in research, publication, scientific journals editorial boards, teaching and supervising university students. Some RTAG members directly participate in EAZA structures related to research, conservation and population management.

Many cooperations, focusing on important research issues for species management as well as conservation efforts, were conducted to implement the EAZA Research Committee recommendations.

Please contact the TAG for the full list of projects. Here are only a few examples:

- The Ploughshare tortoise EEP coordinated by Matt Goetz continued the collaboration with University of Cardiff (UK) on the genetic relationship analysis of all founder and potential founder animals, especially for the breeding station in Madagascar
- Paris Zoo collaborated with a PhD student researching sexual selection on panther chameleons (*Furcifer pardalis*) in human care
- Continuing their collaboration with the Vietnamese Academy of Science and Technology in Hanoi, Cologne Zoo was instrumental in preparing an application to the CITES Conference of Parties listing tiger geckos (*Goniurosaurus spp*) in Appendix II based on threat analysis from ecological research

ADDITIONAL COMMENTS

Many papers were co-authored by members of the Amphibian TAG in 2019. Please see the publication list in the Annex document of this EAZA Annual Report.

RATITE

No report has been submitted by the EAZA Ratite TAG for 2019.

PENGUIN

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

TAG Vice Chair: Jo Elliott (Edinburgh Zoo, Edinburgh, United Kingdom)

INTRODUCTION

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

POPULATION MANAGEMENT PROGRAMME

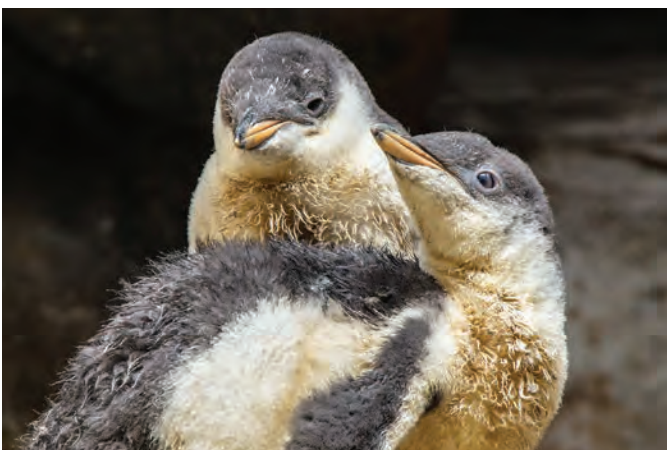
DEVELOPMENTS

A TAG meeting was held at the EAZA Annual Conference in September, in which the status of the different species was discussed.

The EEP for King penguin (*Aptenodytes patagonicus*) decreased a little to 314 birds, although the hatch rate remains good.

The EEP of the Humboldt penguin (*Spheniscus humboldti*) contains by far the highest number of birds: 2,500 divided over 94 participants. At the same time, the demand for birds within and outside of EAZA remains high. The EEP is under the direction of a new Coordinator, a new Species Committee was established, a “wants and needs” survey was carried out and the SPARKS dataset was migrated into ZIMS.

With 721 birds, the population of gentoo penguin (*Pygoscelis papua*) is still at carrying capacity and the general



Gentoo penguin (*Pygoscelis papua*) chicks at Hamburg Zoo © Lutz Schnier

Humboldt penguins (*Spheniscus humboldti*) at La Flèche Zoo
© La Flèche Zoo



recommendation is still to not breed unless institutions can hold offspring, or unless specifically recommended by the Studbook keeper.

The EEP for the African penguin (*Spheniscus demersus*) comprises 2,079 birds, in a total of 63 participants. The populations of Southern and Northern rockhoppers (*Eudyptes moseleyi* and *E. chrysocome*) (EEP) saw a slight increase in numbers, but breeding is still problematic. As long as a proper taxonomy of the (sub) species of rockhoppers is not in place, a tiny population of Eastern rockhoppers (*E. chrysocome filholi*) in one facility will still be kept separate from the others.

The population of magellanic penguins (*Spheniscus magellanicus*) (after a slow decrease after 2008) is back to previous levels with nearly 130 birds, even though the species faces a mortality problem with chicks in particular. Moreover, colonies are in general very small.

The number of macaroni penguins (*Eudyptes chrysolophus*) remains more or less stable but is too small to be viable in the long run.

The populations of Adélie penguins (*Pygoscelis adeliae*) and chinstrap penguins (*Pygoscelis antarctica*) in EAZA are even smaller and therefore neither sustainable, nor recommended.

With Singapore Zoo, Jurong Bird Park and Taipei Zoo becoming EAZA Members, the penguin population management has extended into Asia as well.

ACHIEVEMENTS DURING THE YEAR

At the closed TAG meeting in Valencia (Spain), it was decided to organise a RCP workshop in late 2020 for the total review of species according to the new EAZA population management structure.

The TAG got a second Veterinary advisor, Daniela Denk of the International Zoo Veterinary Group. Clare Rugg, in her capacity as MON-P for Macaroni penguin stepped back and is succeeded by Jason Keller of Living Coasts (UK).

Late in 2019, the establishment of BPG for all species of penguins held in Europe has been initiated, in cooperation with the Van Hall Larenstein University of Applied Sciences (the Netherlands). First results of the survey carried out amongst key holders within EAZA are expected in March 2020.

COLLABORATIONS

In 2018, a group of 20 little penguins (*Eudyptula minor*) was imported to Weymouth Aquarium (UK) from Australia in close cooperation with the EAZA TAG and ZAA. This is a new species for the TAG, and as soon as a second EAZA colony is created, an EEP will be established to manage this species.

For macaroni penguins, contact with the North American programme has been renewed in order to improve the international management of the species.

CONSERVATION AND RESEARCH

The TAG does not directly support conservation work but highlights the work of its members. As before, the Southern African Foundation for the Conservation of Coastal Birds (SANCCOB) and Sphenisco, for African and Humboldt penguins respectively, are supported by penguin holders in Europe.

The research project to ascertain whether current African penguins in the EEP are of a hybrid ancestry with either Humboldt or magellanic penguins is still ongoing. Of 31 samples so far, one appeared to be a hybrid. Further research will focus upon the sampling of more penguins, the analysis of paternal lineages as well as morphological characteristics.

CICONIIFORMES AND PHOENICOPTERIFORMES

No report has been submitted by the EAZA Ciconiiformes and Phoenicopteriformes TAG for 2019.

WATERFOWL AND PELECANIFORMES

TAG Chair: Bernd Marcordes (Cologne Zoo, Cologne, Germany)

Vice Chairs: Johnpaul Houston (pending) and Peter Smallbones (Paignton Zoo, Paignton, United Kingdom)

INTRODUCTION

The EAZA Waterfowl and Pelecaniformes TAG's vision is to focus on threatened species, prioritising Asian species (given the high threat status) and reflecting the importance of conservation education.

The species under the TAG remit are of the *Anseriformes*, *Podicipediformes*, *Phaethontiformes*, *Gaviiformes*, *Procellariiformes*, *Suliformes* and *Pelecanidae* families.

The TAG met twice during the year: first, for the RCP meeting – the main focus of the TAG this year - held at Paignton Zoo (UK) on 6-7 March 2019, and then at the EAZA Bird mid-year meeting, held by Berlin Zoo (Germany).

POPULATION MANAGEMENT PROGRAMME DEVELOPMENTS

The big achievement of 2019 was updating the TAG RCP. Its primary focus was threatened waterfowl species. As the TAG covers over 240 species from magpie goose (*Anseranas semipalmata*) to red-billed tropicbird (*Phaethon aethereus*), species were pre-selected before the meeting based on a number of criteria such as the IUCN status, the population size in EAZA collections, and the specific roles they could have, such as education. Prior to the meeting, guidance was sought from the relevant IUCN Specialist Groups, and the TAG was lucky to have a member of the Threatened Waterfowl SG attending.

We were also fortunate to have Keith Lovett from Buttonwood Park (USA), the AZA Waterfowl TAG Chair in attendance and representatives of the Wildfowl and Wetland Trust (UK). This close and valuable collaboration allowed to recommend several species for EEPs based on information shared and agreements on which zoo and aquarium association should take responsibility for certain species.

Over the two days of the meeting, 54 species were covered in detail with a further 111 species quickly assessed. The meeting went surprisingly smoothly and on time, thanks to the EEO staff, all of the groundwork they put in before the meeting and their facilitation throughout the

King eider (*Somateria spectabilis*) at Living Coasts © Eleanor Stobbart



course of the meeting.

The final outcome of the meeting means there are 15 species recommended for new style EEPs, including ones for grebes and sea ducks to stimulate (husbandry) research and work more pro-actively on best practice.

Georgina Barnes (Longleat Safari Park, UK) stepped down as the Pink-backed pelican ESB keeper. Thankfully the zoo quickly filled the role. The TAG is now just waiting on EEP Committee approval for Ryan Berry to take over the role.

COLLABORATIONS

Collaboration continued between East-Asian Australasian Flyways Partnership and both programmes for the Baer's pochard (*Aythya baeri*) and scaly-sided merganser (*Mergus squamatus*).

Members of the TAG are also members of various IUCN SG Committees.

CONSERVATION AND RESEARCH

Excellent news was reported from Madagascar, where 12 Madagascar pochard (*Aythya innotata*) ducklings have been spotted in the wild. This success is due to the hard work put in by Jersey Zoo (UK) and the Wildfowl and Wetlands Trust, amongst others, in restoring the species in the wild. Zlín Zoo (Czech Republic) continued to support the conservation project for white winged duck (*Asarcornis scutulata*) in Way Kambas National Park, Cambodia. Augsburg Zoo (Germany) continued to support the scaly-sided merganser conservation work carried out in Russia.

Towards the end of 2019 the TAG was fortunate to be able to appoint Paul Rose (Exeter University, UK) as Research advisor to the TAG.

RAPTOR

TAG Chair: Kirsi Pynnönen-Oudman (Helsinki Zoo, Helsinki, Finland), subgroup Owls
TAG Vice Chairs: Jan Hanel (Liberec Zoo, Liberec, Czech Republic) subgr. Eagles and Hawks; Marleen Huyghe (Planckendaal Zoo, Antwerp, Belgium) and Joost Lammers (Avifauna, Alphen aan den Rhijn, the Netherlands) subgr. Vultures; and Graeme Dick (Longleat Safari Park, Warminster, United Kingdom) subgr. Falcons

INTRODUCTION

At the mid-year meeting in the beginning of 2019, we approved the name change from EAZA Falconiformes and Strigiformes TAG to EAZA Raptor TAG. The new name avoids taxonomical inconsistencies, as not all the families were covered by the previous name. In addition, the new

name is in line with the AZA Raptor TAG. The change was accepted by the EEP Committee in August 2019.

POPULATION MANAGEMENT PROGRAMME DEVELOPMENTS

Maarten Vis (Rotterdam Zoo, the Netherlands) was appointed as the new EEP Coordinator for Rueppels vulture (*Gyps ruepellii*) and Karolina Ratajczak (Poznań Zoo, Poland) as the new EEP Coordinator for the White-tailed sea eagle (*Haliaeetus albicilla*).

The evaluations for three EEPs - Egyptian vulture (*Neophron percnopterus*), Andean condor (*Vultur gryphus*), Lesser kestrel (*Falco naumanni*) - were finalised in 2019. The results were discussed by the EEP Committee and follow-up actions are required for the three EEPs. The TAG and EEO have been working on the preparations for the Strigiformes (owl) RCP workshop, which is scheduled for March 2020. Relevant *in situ* and *ex situ* experts were approached and/



European black vultures (*Aegypius monachus*), Ultron and Barnabie in the hack in Bulgaria release site © Emilian Stoynov, LIFE14NAT/BG/649

or invited, species pre-selection was discussed, and a workshop manual was produced.

The Long-Term Management Plan (LTMP) report for three managed vulture species (Griffon vulture ESB, European black vulture EEP and Bearded vulture EEP) was produced in 2019. A two-fold goal for the European black vulture EEP was defined: establish a sustainable *ex situ* population and provide chicks for *in situ* release. Increasing breeding success is one key to achieve this goal and to tackle this challenge.

Thus, several vulture experts on *ex situ* breeding and *in situ* field experts were invited to Antwerp Zoo (Belgium) who organised a two-day workshop on *ex situ* breeding of this species. On the first day, a brainstorming session was held on the type of structure required for the EEP network to achieve this goal. In accordance with the successful model for other endangered species such as the bearded vulture (*Gypaetus barbatus*) and Californian condor (*Gymnogyps californianus*), it was agreed that a structure including specialised breeding centres and individual zoos with a close collaboration between both is the most promising way forward. On the second day, husbandry topics related to breeding success were reviewed and new BPG will be produced.

ACHIEVEMENTS DURING THE YEAR

The mid-year TAG meeting was held in Berlin (Germany) in May. During the meeting, a workshop was organised on the Usutu and West Nile viruses. Veterinary advisor Dominik Fischer (Giessen University, Germany) presented the problem with owls and hawks and talked about the plans to test the vaccines in the future for the owls. Usutu and West Nile virus Management Guidelines, prepared by the TAG, the EAZA Veterinary Committee and several other experts on this field, were produced and distributed in September. The guidelines are available on the Raptor TAG page on the Member Area.

COLLABORATIONS

In October the first European Vulture Conference was organised by the Vulture Conservation Foundation in Algarve (Portugal), where an overview of all ongoing release projects and research on vultures was presented.

CONSERVATION AND RESEARCH

In autumn, four European black vulture chicks born in Riga Zoo (Latvia), Ostrava Zoo (Czech Republic), Planckendael

LTMP meeting in Antwerp Zoo © Raptor TAG



Zoo (Belgium) and Villars-les-Dombes Park (France) were released in Kotel and Sliven in Bulgaria, in close cooperation with the Vulture Conservation Foundation. This project is part of the “Vultures back to Life” programme, which is coordinated by Green Balkans and Fund Wild Flora and Fauna. All chicks were equipped with satellite transmitters.

Bearded vultures had an excellent breeding season. A new record could be achieved: 30 surviving chicks. A minimum of 18 nestlings will be released in the wild. At the specialised breeding centres, 18 breeding pairs (plus two foster pairs) produced 19 chicks. At zoos/private collections/recovery centres, 21 breeding pairs produced 11 chicks, the second highest number of produced chicks ever achieved by these institutions (1,999 produced 13 fledglings).

GALLIFORMES

TAG Chair: Jan Dams (Antwerp Zoo, Antwerp, Belgium)

Vice Chairs: Ludo Pinceel (World Pheasant Association, Hexham, United Kingdom) and Geer Scheres (Cracid and Crane Breeding and Conservation Centre, Zutendaal, Belgium)

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*), guineafowl (*Numididae*), and chachalacas, guans, and curassows (*Cracidae*).

The EAZA Cracid TAG has, as of March 2019, merged with the Galliformes TAG. The former Cracid TAG Chair, Geer

Vietnam pheasant (*Lophura edwardsi*) chick © Klaudiusz Muchowski


Scheres (Cracid and Crane Breeding and Conservation Centre, Belgium), has been appointed as additional Vice Chair of the Galliformes TAG next to Ludo Pinceel (World Pheasant Association, UK). Jan Dams (Antwerp Zoo, Belgium) will remain Chair.

POPULATION MANAGEMENT PROGRAMME DEVELOPMENTS

Unfortunately, 2019 marks the year in which we lost Alain Hennache (Clères Zoo, France), who functioned as Galliformes TAG Chair up until his retirement. His work on the studbook for Edwards's pheasant (*Lophura edwardsi*) was crucial in the forming of a safeguard population within EAZA. The hope that the species will have another chance at survival in the wild is, and shall remain, Alain's legacy. For this, we are extremely grateful and will always carry him in our hearts.

At the end of 2018 a LTMP meeting was held to discuss the future for the Edwards's pheasant. A draft LTMP report was published, to be finalised early 2020. One of the action points was the creation of BPG for this species. At the end of the year, a draft version of this document was spread among the Edwards's pheasant's Committee. To aid in the creation of veterinary part of these BPG, a vacancy for a Veterinary advisor for the TAG was shared in the EAZA Veterinary Committee. Three veterinarians replied and will thus help the TAG with this task: Hermann Kempf runs a private practice in Germany and specialises in birds and reptiles; Rosa Martínez Valverde works as both vet and director for *in situ* conservation projects in Bioparc Fuengirola (Spain); and Shangzhe Xie is a vet at Wildlife Reserves Singapore (Singapore).

During this same meeting it was decided that the Edwards's pheasant and Vietnamese pheasant (*Lophura hatinensis*)

Vietnam pheasant (*Lophura edwardsi*) male © Hubert Fryca


should henceforth be combined under the name Vietnam pheasant (*Lophura edwardsi*).

Due to inactivity, the EEP for Red-billed curassow (*Crax blumenbachii*) was discontinued. A population of this endangered species will be maintained in specialised institutions.

ACHIEVEMENTS DURING THE YEAR

A TAG meeting was held during the mid-year Bird TAG meeting kindly hosted by Berlin Zoo (Germany). Thanks to the contribution of some great speakers the meeting was filled with interesting talks about *e.g.* Edwards's pheasant, Congo peafowl (*Afropavo congensis*) and bare-faced curassow (*Crax fasciolata*).

COLLABORATIONS

Jan Dams attended the World Pheasant Association's Benelux meeting where he gave a presentation about the disturbing state that the bare-faced curassow is currently

in. Also the collaboration with the AZA Galliformes TAG is strong, during the TAG meeting in Berlin an update was given on the activities of our American counterpart. To enhance the sharing of information it was agreed that a combined yearly newsletter would be published and spread among TAG members.

CONSERVATION AND RESEARCH

In the end of September 2019, the World Pheasant Association held their symposium in Vietnam, Peter Smallbones (Paignton Zoo, UK) attended the meeting representing his institution and the TAG. Important links were made and steps were taken to move the Edwards's pheasant project forward. Together with Jo Gregson (Paignton Zoo, UK), Peter has been extremely helpful functioning as the crucial link between the *in situ* community in Vietnam and the *ex situ* side of this project, providing training opportunities for Vietnam locals in Vietnam and on Paignton Zoo's grounds.

GRUIFORMES

TAG Chair: Tobias Rahde (Berlin Zoo, Berlin, Germany)

Vice Chair: Gary Ward (London Zoo, London, United Kingdom)

INTRODUCTION

During the last year, the former EAZA Gruiformes TAG Chair and Vice Chair stepped down from these positions and the TAG members and the EEP Committee elected their successors. Since March, we have started to revitalise the TAG and the population management programmes that fall under its remit.

POPULATION MANAGEMENT PROGRAMME

DEVELOPMENTS

The first step for a new start of the TAG was the evaluation of the existing programmes. In 2019 there was an evaluation of the EEPs for Kagu (*Rhynochetos jubatus*), Red-



Red-crowned cranes (*Grus japonensis*) foster-rearing a wattle crane (*Bucconas carunculatus*) chick at Whipsnade Zoo © Jamie Graham

crowned crane (*Grus japonensis*) and White-naped crane (*Grus vipio*). The Kagu EEP, established in 2010, was rated as unacceptable. The TAG is currently looking for a new Studbook keeper. The evaluation process for the Red-crowned crane EEP and White-naped crane EEP have been initiated and will be finalised in early 2020.

Severin Dressen (former Wuppertal Zoo, Germany) stepped down from his position as Studbook keeper for Sunbittern (*Eurypyga helias*) and the position is currently vacant.

Ryan Berry (Longleat Safari Park, UK) has taken over the monitoring programme of the grey-crowned cranes (*Balearica regulorum*) from Georgina Barnes, who has left Longleat Safari Park and no longer works in an EAZA institution.

Maximilian Birkendorf (Neuwied Zoo, Germany) has taken on the monitoring of the sarus cranes (*Antigone antigone*).

ACHIEVEMENTS DURING THE YEAR

The main goal for the TAG this year was to re-establish the TAG within EAZA. Therefore, it was necessary to build a new team of members and hold regular meetings. There were two Gruiformes TAG meetings in 2019.

The first one in Berlin (Germany) during the Bird TAG mid-year meeting which included a focus on the crane programmes and conservation activities. Presentations included an update from Bernd Marcordes (Cologne Zoo, Germany) on the ESB for Wattled crane (*Bugeranus carunculatus*) and from Günter Nowald (Kranichschutz Deutschland, Germany) who outlined their projects with black-necked cranes (*Grus nigricollis*) in China and grey-crowned cranes in Kenya.

The second meeting was held at the EAZA Annual Conference and focused on the smaller species of the TAG including trumpeters (*Psophia*), bustards (*Otididae*) and rails (*Rallidae*).

This year a draft BPG for trumpeters was also produced.

Andreas Pauly (Tierpark Berlin, Germany) has taken on the role of Veterinary advisor for the TAG and Paul Rose (University of Exeter, UK) has taken on the role as Research advisor. Paul has a PhD in animal behaviour and welfare and is an associate researcher at Wetlands and Wildfowl Trust (UK). He is also the Vice Chair of the British and Irish Association of Zoos and Aquariums (BIAZA) Research Committee and Research Officer for the BIAZA Bird Working Group. We welcome them and look forward to working with them on TAG matters moving forward.

COLLABORATIONS

Contact has been made with Mike Taylor, Programme Leader for the AZA Gruiformes TAG. We look forward to collaborating with him and other members of the AZA TAG.

CHARADRIIFORMES

TAG Chair: Simon Matthews (Bristol Zoo Gardens, Bristol, United Kingdom - employed at Wetlands and Wildfowl Trust, Slimbridge, United Kingdom)

Vice Chair: Jo Gregson (Paignton Zoo, Paignton, United Kingdom)

INTRODUCTION

The EAZA Charadriiformes TAG covers all 377 species of the order, which are split over 19 different families. This diverse group of birds can be loosely divided into three types: waders, gulls and auks. The TAG is working to raise awareness of the conservation needs of these species, develop BPG to improve welfare, and assist in maintaining sustainable captive populations.

POPULATION MANAGEMENT PROGRAMME DEVELOPMENTS

Our two ESB populations are on different paths. The Inca tern (*Larosterna inca*) is breeding very well with most of its holders meaning new holders are needed and breeding needs to be managed. Interest has been shown from collections further into Europe which should aid the stability of the population in the future. Current holders have done very well this past year at being more proactive with tagging and sexing their birds, which has made recommendations easier.

The Atlantic puffin (*Fratercula arctica*) had a good breeding year, improving on numbers hatched from the previous year thanks to Bern Zoo (Switzerland) and Rotterdam Zoo (the Netherlands). Eggs were also laid by populations at Copenhagen Zoo (Denmark) and Loro Park (Spain) but were unfortunately infertile.

The TAG held sessions at the Bird TAG mid-year meeting which was well attended, and presentations were shared by species investigators to help the TAG work towards the RCP review due in 2022. Species investigators volunteered at the previous mid-year meeting (Budapest, Hungary) to research species that had more than 10 individuals in European collections and could be viable populations for the future. The investigators then commented on how

Wattled jacana (*Jacana jacana*) © Miguel Sierra and Rosana Gallego / Barcelona Zoo



successful this species is currently kept under human care and whether they believe there is a future for the species population. This research and opinions will all factor in the RCP review. The species of key interest included Eurasian curlew (*Numenius arquata*), wattled jacana (*Jacana jacana*) and black-legged kittiwake (*Rissa tridactyla*). The TAG also discussed a mission statement which will be decided on shortly.

COLLABORATIONS

The TAG's Facebook page, Charadriiformes Conservation, has grown to over 200 members in a little under a year and is followed by several other groups and professionals. The page is sharing research, conservation and captive management news from around the world on charadriiformes.

CONSERVATION AND RESEARCH

Maybe some of the most exciting news is the number of



Eurasian curlew (*Numenius arquata*) © James Lees / WWT

projects that are starting up to head start the Eurasian curlew, with work being done and planned in the UK, the Netherlands and Germany. Please get in contact with the TAG if you would like to know more.

PIGEON AND DOVE

No report has been submitted by the EAZA Pigeon and Dove TAG for 2019.

PARROT

TAG Chair: Simon Bruslund (Marlow Bird Park, Marlow, Germany)

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

INTRODUCTION

The EAZA Parrot TAG is a very large TAG with over 16,000 parrots in around 230 institutions. There are 13 EEPs, 11 ESBs, 31 MON-P, 22 Recruitment Monitoring (REC MON) and 30 Conservation Monitoring (CONS MON) programmes. With parrots being one of the most threatened bird groups, the TAG is continually striving to increase the conservation impact of our *ex situ* populations.

POPULATION MANAGEMENT PROGRAMME DEVELOPMENTS

Two EEPs were evaluated in 2019 and the findings were as follows:

- The Hyacinth macaw EEP was rated as sufficient-insufficient. Communication with holders is good but an up-to-date studbook, an annual report and BPG need to be produced
- The Red-fronted macaw EEP was rated as sufficient. BPG are needed along with more frequent annual reports and studbooks. The difficulty in forming a Species Committee was highlighted

There has been ongoing work with several species with the aim of developing coordinated programmes. Several threatened species which would benefit from managed programmes are unfortunately underrepresented in zoos and need targeted acquisition to start programmes. Under the guidance of Yveta Svobodová (REC MON programme manager, Ostrava Zoo, Czech Republic) good progress was made with gaining new holders for the endangered green-thighed parrot (*Pionites leucogaster*).

In December 2019, the Parrot TAG welcomed Stephan Worm (Hodenhagen Safari Park, Germany) as our

Simeulue red-breasted parakeets (*Psittacula alexandri cala*) documented in illegal trade in November 2019 © Simon Bruslund/EAZA Parrot TAG



Education advisor. Stephan will be developing ideas to help EAZA Members celebrate World Parrot Day on 31 May.

In 2019, there were also some changes to the Veterinary advisors. Andrew Greenwood (International Zoo Veterinary Group, UK) stepped down after decades of support. The Parrot TAG is very grateful for his assistance and wishes him all the best for the future. In July, the Parrot TAG welcomed Katharina Reitl (Vienna Zoo, Austria) as a new Veterinary advisor who will be working with the other Veterinary advisors - Michael Lierz (Giessen University, Germany) and Helena Vaidlová (Prague Zoo, Czech Republic).

ACHIEVEMENTS DURING THE YEAR

In March 2019, the document, “Ethical considerations on Parrots in presentations and current recommendations by the EAZA Parrot Taxon Advisory Group” was approved by the EEP Committee. Produced with the assistance of the TAG Training and Behaviour advisor, Barbara Heidenreich (Barbara’s Force Free Animal Training, USA), this document is a supplement to the BPG on Birds in Demonstrations (2016).

In May 2019, the TAG set up a global email distribution list for Parrot TAG Chairs (or similar where no Parrot TAG exists) of other associations to improve communication between the regional zoo associations in relation to parrot conservation.

The TAG also held a Virus Management Workshop at the mid-year meeting in Berlin. Michael Lierz joined via Skype

and the workshop was attended in person by several vets including Mads Bertelsen (Copenhagen Zoo, Denmark) and Dominik Fischer (Giessen University, Germany), the Raptor TAG Veterinary advisor. The discussions from this workshop will help form the basis for a comprehensive document on virus management in parrots, which is being drawn up by the Parrot TAG.

The Parrot TAG page on the EAZA Member Area was revamped. Species-relevant folders were created and 100+ new publications have been added. Parrot publications will continue to be added making this a great resource for parrot information so please check it out!

COLLABORATIONS

The TAG meeting in Valencia (Spain) focused on parrot conservation with presentations from three in-region projects from Asia, Africa and South America, all very well received:

- Bennett Hennessey (Armonia, Bolivia) gave an overview via Skype of blue-throated macaw (*Ara glaucogularis*) conservation over the past 15 years
- Guillaume le Flohic (Limbe Wildlife Centre, Cameroon) presented “Enhancing the rehabilitation and release of confiscated endangered African grey parrots (*Psittacus erithacus*) in Cameroon: successes, challenges and opportunities”
- Indira Lacerna-Widmann (Katala Foundation, Philippines) provided an update on the *in situ* work with red-vented cockatoos (*Cacatua haematuropygia*)

We hope they will encourage increased support of *in situ* parrot conservation projects from EAZA Members.

The TAG Vice Chair, Sandra Molloy, presented an overview of the draft virus management strategy for parrots at the Veterinary Committee meeting at the EAZA Annual Conference. The cooperation of zoo vets with the strategy will be instrumental in ensuring the threats posed by the main disease-causing viruses are greatly reduced in EAZA institutions.

The TAG Chair, Simon Bruslund, gave a lecture about the EAZA Parrot TAG, EEPs and pairing strategies at the annual meeting of the German Foundation for threatened Parrots in Wuppertal Zoo (Germany).

A one-day swift parrot (*Lathamus discolor*) meeting was held at Schwerin Zoo (Germany) on developing BPG and a model for cooperation with a non-EAZA entity of dedicated private breeders (Gesellschaft für Arterhaltende Vogelzucht), the main breeder organisation for this species.

A collaboration with BirdLife Asia was started on collecting data and creating a shared database for discussions on red-listing evaluations for *Psittacula* species and subspecies.

Michael Lierz was in New Zealand as an advisor on assisted reproduction for the Kākāpō Recovery Programme of the New Zealand Department of Conservation.

CONSERVATION AND RESEARCH

The TAG encourages EAZA institutions holding parrots to support field conservation projects for threatened taxa of parrots, such as the ones promoted in Valencia.

The TAG supports research on whether flight is important to the welfare of zoo birds. This research is being carried out by the University of Bristol (UK), the University of Guelph (Canada) and the University of Utrecht (the Netherlands) using data from Species360.

The Parrot TAG continued to encourage institutions holding parrots to take samples for the EAZA Biobank and to also record parrot mutations and hybrids in ZIMS.

Chester Zoo (UK) is collaborating with the University of Sheffield (UK) and the Macaw Recovery Network (Costa Rica) on a PhD project regarding the conservation ecology of wild Buffon's macaw (*Ara ambigua*).

The Parrot TAG continued to support the following research projects:

- Collection of genetic samples from yellow-crested cockatoos (*Cacatua sulphurea*) for subspecies research
- Collection of samples from citron-crested cockatoos (C.

Bird demonstration with parrots in Marlow Bird Park

© Simon Bruslund



s. citrinocristata) to investigate relatedness of founders in the EEP

- Research into cockatoo nutrition which is being led by the Parrot TAG Nutrition advisor, Maja Damjanović (Zagreb Zoo, Croatia)

ADDITIONAL COMMENTS

Papers co-authored by members of the Parrot TAG and cooperators in 2019:

Braun, M. *et al.* (2018) *Effects of cold winters and roost site stability on population development of non-native Asian ring-necked parakeets (Alexandrinus manillensis) in temperate Central Europe – results of a 16-year census.* European Journal of Ecology 4(2):49-55

Bruslund, S. (2019) *Infertile Eggs in Swift Parrots, orig. Unbefruchtete Eier bei Schwalbensittichen – Fragen an Expertenrat.* Papageien 10(32): 348-349

TOUCAN AND TURACO

Due to the current lack of Chair and Vice Chair in the Toucan and Turaco TAG, no report has been submitted by the TAG for 2019.

HORNBILL

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

TAG Vice Chair: Joost Lammers (Avifauna, Alphen aan den Rijn, the Netherlands)

INTRODUCTION

2019 was a busy year for the EAZA Hornbill TAG. Progress was made on the RCP for hornbills and much attention was devoted to the production of BPG for the *Bucorvus*

Rhinoceros hornbill puppet used to feed the young (*Buceros rhinoceros*) © Prague Zoo



hornbills. The TAG and several of its members remain actively involved in the conservation of hornbills, through its relationship with (amongst others) the IUCN Species Survival Commission (SSC) Hornbill SG.

POPULATION MANAGEMENT PROGRAMME DEVELOPMENTS

Highlights of the year were the successful breeding of rhinoceros hornbills (*Buceros rhinoceros*) at Chester Zoo (UK) and Prague Zoo (Czech Republic). Chester's pair – including a 40-year-old female – reared two offspring, whereas in Prague four chicks were successfully puppet-reared, after the female abandoned her clutch.

The decision was made to manage three other species, namely rufous hornbill (*Buceros hydrocorax*), Southern rufous hornbill (*Buceros mindanensis*) and Palawan hornbill

(*Anthracoceros marchei*) in 2019. The Palawan hornbills are monitored by Krzysztof Kałużny (Wrocław Zoo, Poland). Prague Zoo is expected to monitor both the rufous hornbill species, especially if they are upgraded to an EEP in 2020, following the outcome of the recent RCP workshop.

The TAG is pleased to announce that the ESB for the Malayan black hornbill (*Anthracoceros malayanus*) will be managed by Wildlife Reserves Singapore (Singapore).

ACHIEVEMENTS DURING THE YEAR

The EAZA Hornbill RCP workshop was hosted by Avifauna (the Netherlands) on 28-29 October. Most TAG members and advisors as well as the AZA Hornbill TAG Chair participated in the workshop. A draft RCP for all hornbill species has been prepared and will be presented to the EEP Committee for official approval in 2020. Several new

style EEPs for both African and Asian hornbill species, e.g. for Silvery-cheeked hornbill (*Bycanistes brevis*) and Trumpeter hornbill (*B. bucinator*) will be announced later in 2020.

COLLABORATIONS

A very productive two-day ground hornbill (*Bucorvus* spp.) workshop was held at Berlin Zoo (Germany) in May 2019. Some 20 participants shared information and worked hard together on producing the first rough draft of the EAZA Ground Hornbill BPG. Additional editing was done over the year and it is hoped that the final document will be available in 2020.

CONSERVATION AND RESEARCH

Two major hornbill confiscations occurred in the EAZA region in 2019. Some 12 hornbills belonging to six Asian species, including a female rufous-necked hornbill (*Aceros nipalensis*), were confiscated in Israel and relocated by the governmental nature authorities to Jerusalem Zoo. A group of eight rhinoceros hornbills (*B. rhinoceros borneoensis*) and a single (unfortunately deceased) young adult male helmeted hornbill (*Rhinoplax vigil*) were confiscated in the United Arab Emirates and placed at Arabia's Wildlife Centre in Sharjah. All confiscated birds were made available to participate in the relevant EEPs.

It seems that an increasing number of hornbills are found in the international trade; one also sees many confiscations in recent years. The IUCN SSC Hornbill SG believes it is important that a protocol is developed on how to deal with these confiscated birds. Hornbills are not the easiest of birds and general knowledge is often lacking in many rescue centres. Basic veterinary and husbandry information should therefore be available for institutions that have to deal with this, so that good basic care can be provided to these hornbills.

Conservation action plan workshops were held in the Philippines for the Sulu hornbill (*Anthracoceros montani*) and the Visayan hornbills (*Penelopides panini* and *Rhabdotorrhinus waldeni*) in 2019. Members of the EAZA Hornbill TAG were involved in the organisation and participated in these meetings. Action plans are in preparation.

The TAG Chair participated as member in a meeting of the Steering Committee of the IUCN SSC Hornbill SG in Bangalore, India in May.

ADDITIONAL COMMENTS

Attica Zoological Park (Greece) continues to organise an annual Hornbill Day, dedicating attention to hornbill conservation, and is encouraging other zoos worldwide to participate. The institutions interested in hosting a hornbill day event can contact them as they have many educational materials and ideas to share.

PASSERIFORMES

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

Vice Chairs: Theo Pagel (Cologne Zoo, Cologne, Germany) and Simon Bruslund (Marlow Bird Park, Marlow, Germany)

INTRODUCTION

During the year Theo Pagel (Cologne Zoo, Germany) stood down as Vice Chair, a position he had held since the EAZA Passeriformes TAG's inception. In this role he has made a tremendous contribution over the years in helping steer us through the early discussions on whether or not a TAG was even required for this group of birds, to forming the TAG and progressing it so that today EEPs are recommended for 24 Asian species alone, many of which are Critically Endangered.

Simon Bruslund (Marlow Bird Park, Germany) was approved earlier in the year as a new Vice Chair.

POPULATION MANAGEMENT PROGRAMME DEVELOPMENTS

2019 saw the publication of the new style RCP for Asian songbirds. In this plan 24 EEPs were recommended, a number of which were of conservation value for highly threatened species. This is a reflection of the worsening state of the planet's wildlife and our need to respond to the challenge this presents. So far just one of these has been approved, the EEP for Chestnut-backed thrush (*Geokichla dohertyi*). However several more have their applications in process and it is envisaged that a good number will be approved during 2020.

BPG were published for Javan green magpie (*Cissa thalassina*) and rufous-fronted laughingthrush (*Garrulax rufifrons*). Others are nearing completion and will be published in 2020, the aim being to produce them for all the EEPs. Considerable work goes into the writing of these BPG and they are a most valuable resource not only for EAZA institutions but should prove most useful for

Chestnut-backed thrush (*Geokichla dohertyi*) © Torben Weber


the growing number of in-region conservation songbird breeding centres engaged in breeding programmes vital to the species' survival.

An LTMP workshop was conducted for the Emei Shan liocichla (*Liocichla omeiensis*).

The Blue-crowned laughingthrush (*Garrulax courtoisi*) Global Species Management Programme (GSMP) held its 7th Global Master Planning meeting in Prague (Czech Republic) in October and as an outcome produced its plan for 2020.

ACHIEVEMENTS DURING THE YEAR

Having successfully completed its second year, the Silent Forest Conservation Campaign came to an end. The name however will live on as the subgroup of the TAG concerned with promoting the conservation of Asian songbirds; formerly the Threatened Asian Songbird Alliance (TASA) has been renamed the Silent Forest Working Group (SFWG). The campaign has been an undoubted success with fantastic support from the EAZA Membership. All but one of its goals were not only reached but exceeded. The target of

producing 10 BPG was not reached but it is anticipated this can be achieved during the following year.

To help promote the campaign Simon Bruslund gave a number of presentations at various zoos.

The campaign successfully enabled all six of the pre-selected projects to be fully funded. These projects contribute to the conservation of many Critically Endangered songbirds (for details: <http://silentforest.eu>).

In addition, there are funds that can be awarded to other projects that are so urgently required to implement measures to help address the Asian songbird crisis.

With EAZA's engagement with songbird conservation, a motion – Action against songbird trafficking – was submitted to the upcoming IUCN World Conservation Congress (June 2020).

The TAG met during both the mid-year Bird TAG meeting in Berlin (Germany) and at the EAZA Annual Conference in Valencia (Spain). On both occasions TASA met as well.

The TAG gained Lucia Schröder (Cologne Zoo, Germany) as permanent Education advisor and liaison to the EAZA Education Committee. Lucia was also instrumental as Education coordinator for the Silent Forest Campaign from 2017-2019.

COLLABORATIONS

The partnership with TRAFFIC, BirdLife and the IUCN SSC Asian Songbird Trade Specialist Group (ASTSG) in the Silent Forest Campaign has strengthened collaboration with these organisations.

This is particularly strong with ASTSG, as a number of the TAG members also belong to this SG. The ASTSG held its first meeting during March in Singapore, at which there was a good attendance from the TAG members. This meeting presented progress so far in addressing this conservation crisis and went on to set future priority actions. These are very useful in assisting EAZA to access how best it can contribute to the actions required.


Signing the Memorandum of Understanding with EAZA for Save MAGIAO © Nicole Bruslund

CONSERVATION AND RESEARCH

A number of field visits were made connected with the conservation of songbirds.

In March, Andrew Owen (Chester Zoo, UK) travelled to Bali to meet with Bali Barat National Park staff and helped conduct some workshops aimed at assisting with aspects of the conservation of the Bali myna (*Leucopsar rothschildi*). It seems that, after many years of trying, more recent efforts are now having some effect in restoring this species in the wild.

Simon Bruslund and Andrew Owen were in Brazil in October taking part in an action plan meeting for the Alagoas antwren (*Myrmotherula snowi*), a Critically Endangered species thought to number less than 30.

Simon Bruslund also visited the Western Sumatran Islands in November in connection with conserving the hill mynas (*Gracula sp.*) and shamas (*Kittacincla sp.*) endemic to these Islands. While there, Simon was present at the signing of Memoranda of Understanding (MoU) between EAZA and two Silent Forest funded projects, Save MAGIAO (the local name for the Nias hill myna (*Gracula robusta*)) and Treasure Islands (a project run from the Island of Simeulue.)

MONOTREME AND MARSUPIAL

TAG Chair: Flemming Nielsen (Copenhagen Zoo, Copenhagen, Denmark)

TAG Vice Chairs: Achim Winkler (Copenhagen Zoo, Copenhagen, Denmark) and Matthias Papiés (Antwerp Zoo and Planckendael Zoo, Antwerp, Belgium)

INTRODUCTION

The year 2019 was a year of preparation for the future. The EAZA Monotreme and Marsupial TAG (M&M TAG) held two meetings – mid-year in Sóstó Zoo (Hungary) and at the EAZA Annual Conference in Valencia (Spain) - to help the TAG to set their path for the scheduled RCP workshop in Wrocław Zoo, Poland to run in May 2020.

POPULATION MANAGEMENT PROGRAMME

DEVELOPMENTS

Here were the developments and challenges for the M&M TAG species in 2019:

- EEP for Tasmanian devil (*Sarcophilus harrisii*): Prague Zoo, Czech Republic imported in 2019
- EEP for Koala (*Phascolarctos cinereus*): Focus on Koala retrovirus (KoRV)

Young immature Tasmanian wombats (*Vombatus ursinus tasmaniensis*)
© Copenhagen Zoo



- EEP for Brush-tailed bettong (*Bettongia penicillata*): Constant population increase. Need for new holders. Breed and cull as possible management strategy
- EEP for Goodfellow's tree kangaroo (*Dendrolagus goodfellowi*): Small population, limited breeding, few founders
- EEP for Yellow-footed rock wallaby (*Petrogale xanthopus xanthopus*): Need of new holders.
- ESB for Swamp wallaby (*Wallabia bicolor*): Only 31% of pedigree known
- ESB for Tammar wallaby (*Macropus eugenii*): Need for new animals
- ESB for Red kangaroo (*Macropus rufus*): Large population. Problem of placing surplus animals
- ESB for Eastern grey kangaroo (*Macropus giganteus*) and MON-P for Western grey kangaroo (*Macropus fuliginosus*): Surplus males
- MON-P for Short-beaked echidna (*Tachyglossus aculeatus*): Successful births at Budapest Zoo, Hungary and Pilsen

Eastern grey kangaroos (*Macropus giganteus*) browsing © Copenhagen Zoo



Zoo, Czech Republic

- MON-P for Eastern Quoll (*Dasyurus viverrinus*): Ariel Jacken (Leipzig Zoo, Germany) appointed as new Coordinator. New import of 3.3 in 2019
- MON-P for Ground cuscus (*Phalanger gymnotis*): Heavy population decline. Breeding successes urgently needed

ACHIEVEMENTS DURING THE YEAR

The successful M&M TAG mid-year meeting, held in May, was attended by nine core members of the TAG. Main topics were the preparation of the upcoming RCP workshop in 2020, a focus on walk-through exhibits and the preparation of BPG for Tasmanian devils, koalas, wombats (*Vombatus ursinus*) and eastern quolls.

Flemming Nielsen (Copenhagen Zoo, Denmark) welcomed 60 attendees to the open meeting of the TAG at the EAZA Annual Conference. A particular welcome was given to Udo Ganslosser (Greifswald University, Germany), the previous Chair of the TAG, to thank him for his 25 years of involvement in the TAG.

The Position Statement on the import of monotremes

and marsupials from other regions, prepared by the M&M TAG, was officially approved by the EEP Committee in June 2019. Its aim is to ensure that all EAZA Members adhere to EAZA's rules and regulations regarding the acquisition and imports of these species and prevent new occurrences of marsupial imports from Australia, where neither the respective EEP Coordinator nor the TAG are informed. While the TAG encourages individual zoos to use their personal contacts to import Australian marsupials to strengthen the European populations, it is imperative that the respective EEP Coordinator and/or the TAG are informed prior to any such activities in order to safeguard positive long-term effects on EAZA populations.

Short-beaked echidnas bred successfully in Budapest Zoo and Pilsen Zoo. Such successes among echidnas have been rare in the past, both in Europe and abroad. Husbandry guidelines for echidnas are available from Australia. A husbandry workshop took place in Budapest Zoo in November, gathering all EAZA holders of echidnas to exchange experience information and get an outline for the BPG for echidnas.

The TAG discussed veterinary issues regarding the koala retrovirus (KoRV), which is seen as a major threat to the koala population in human care. While all koalas in Europe carry KoRV type A, a few animals also carry the types B and/or C. While type A alone is not considered to be dangerous to the koalas, a combination with the types B and/or C could however result in deadly illnesses, which did already occur. Due to the risks and uncertainty of the effect of the various strains of KoRV, the current policy in the Koala EEP is to keep animals with type B and C separate from other koalas, entailing they do not take part in the breeding programme.

It is imperative to have all koalas tested for KoRV, ideally before their import to Europe.

Within Europe, arrangements have been made with three laboratories - Leibniz Institute for Zoo and Wildlife Research (IZW, Germany), Robert Koch Institute Hamburg (Germany), University of Nottingham (UK) - to use different tests for KoRV among koalas to determine their infection status. Baptiste Mulot (Beauval Zoo, France) is the Veterinary advisor for the Koala EEP and coordinates all the KoRV testing.

A future task of the EEP is to clarify both San Diego Zoo's and Australia's position on the KoRV. A KoRV meeting is planned to take place in Australia in 2020.

COLLABORATIONS

The TAG cooperated with the IUCN M&M SG in view of the EAZA M&M RCP workshop in 2020 to which they have been invited to attend. The TAG also aims to further improve the cooperation and the contacts with ZAA.

CONSERVATION AND RESEARCH

EAZA holders of koalas belonging to San Diego Zoo (USA) pay a contribution to support the koala projects coordinated by San Diego Zoo.

The Tree kangaroo GSMP supports the "Tenkile Conservation Alliance" which works for the conservation of the Tenkile tree kangaroo (*Dendrolagus scottae*) in Papua New Guinea.

The TAG is actively looking for conservation projects to support.

Kathryn Perrin (Copenhagen Zoo, Denmark) presented "Acute Phase reactants in Healthy, Sick and Devil Facial Tumour Disease-affected Tasmanian Devils" at the Zoo and Wildlife Health Conference in Sweden.

PROSIMIAN

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

Vice Chair: Delphine Roulet (Cotswold Wildlife Park, Burford, United Kingdom)

INTRODUCTION

After the completion and approval of the EAZA Prosimian TAG RCP in 2018, the EEPs were expected in 2019 to adapt their general management to roles and goals as defined in the RCP. Even more changes are to be expected with the development and implementation of LTMP for each EEP.

POPULATION MANAGEMENT PROGRAMME DEVELOPMENTS

A full-day workshop led to finalising the first LTMP under the remit of the TAG, namely for the ring-tailed lemur (*Lemur catta*). The result is a complex strategy which considers the behaviour, welfare aspects and the long-term securing of an insurance population for the most popular lemur species, listed as Endangered on the IUCN Red List. To engage the numerous holders of ring-tailed lemurs in the EEP strategy, there were a publication in Zooquaria 105 and a presentation at the EAZA Annual Conference which reached a wider audience.

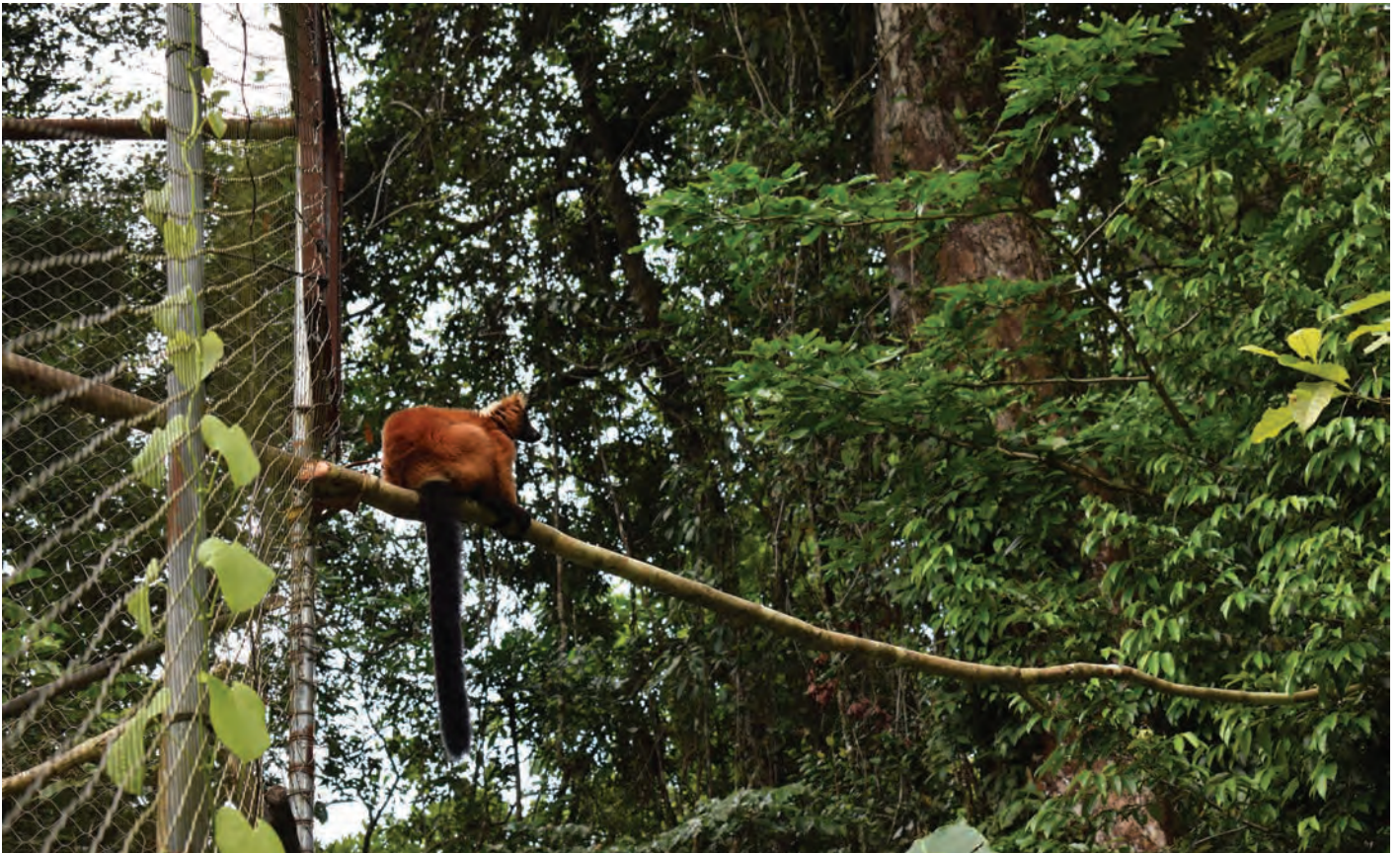
In combined efforts the EEPs for Pygmy slow loris (*Nycticebus pygmaeus*), Bengal slow loris (*Nycticebus bengalensis*) and Sunda slow loris (*Nycticebus coucang*) initiated the work on BPG for the genus *Nycticebus*. The process is now on the way and results are expected in the course of 2020.

The transfer of Coquerel's sifakas (*Propithecus coquereli*) from the AZA Species Survival Programme (SSP) to EAZA got stuck in bureaucratic obstacles. The TAG's facilitation and the commitment of all parties involved kept the process going and the transport of four pairs of sifakas from the USA to Europe is expected for 2020.

ACHIEVEMENTS DURING THE YEAR

The TAG is supportive of cooperations with and support of *ex situ* facilities in Madagascar. While the AZA counterpart and the Duke Lemur Centre (USA) are acting towards providing husbandry and basic breeding guidelines to the Ministry of Environment in Madagascar for further use directed to the facilities, the EAZA Prosimian TAG continues with a more practical and individual approach with a selected number of public zoos in Madagascar.

Release of translocated red ruffed lemurs (*Varecia rubra*) at Farankaraina © Doué la Fontaine Biopark



Improving facilities for belted ruffed lemurs (*Varecia subcincta*) at Parc Tsimbazaza © S. Meys



The goals for such cooperation are improving and ensuring the husbandry quality and animal welfare in those places, building up a level of trust and commitment between the parties involved and laying the foundation for combined conservation activities.

The transfer of belted ruffed lemurs (*Varecia subcincta*) from the EEP to Parc Tsimbazaza, Antananarivo – due in 2020 – must be seen in this way. It will also allow the inclusion of new founders of this taxon in the global *ex situ* population of this species as belted ruffed lemurs are kept there already.

This kind of one-way transfer “back home” should also give a political signal to Madagascar authorities that zoos and their population management programmes are aimed at helping to safeguard their natural heritage and unique treasures.

CONSERVATION AND RESEARCH

The *in situ* conservation and research projects in Madagascar and Southeast Asia, endorsed by the TAG “*in situ* Conservation Plan”, are mostly promoted and supported via the individual EEPs. The respective taxa are the links (flagship species) to these projects. The red ruffed lemurs (*Varecia rubra*) became more than “conservation ambassadors” when animals from the EEP were moved to Madagascar for a translocation and release project for this Critically Endangered species.

ADDITIONAL COMMENTS

Over the year, three “Prosimian TAG newsletters” were edited and circulated to a wide audience including conservation NGOs and key persons in Madagascar. The newsletter is regarded as a worthwhile tool for internal and external communication and is a proof of the activities and achievements both *ex situ* and *in situ* of individual zoos, conservationists and the TAG.

The “Prosimian TAG compendium” was updated and is the basic source of information about the individual EEPs, the people behind them as well as about the *in situ* conservation projects which are endorsed and supported by the TAG.

CALLITRICHID

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

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

INTRODUCTION

This year was rather a landmark for the EAZA Callitrichid TAG as the Global Integrated Collection Assessment and Planning (ICAP) and the EAZA RCP meetings were held in Amsterdam (the Netherlands) in April. This resulted in some changes to managed programmes. At the end of 2019 the TAG had 17 new style EEPs and five monitored species. The TAG membership remains at 22. A TAG vision was produced: *a world where all species of callitrichid primates survive and flourish and where the in and ex situ communities work as one to achieve this*. It sits nicely alongside the TAG logo.

In 2019 two TAG meetings were held, in April and at the EAZA Annual Conference in September. All minutes, along with TAG reports, programme updates, studbooks and annual reports, are on the TAG page of the EAZA Member Area.

POPULATION MANAGEMENT PROGRAMME DEVELOPMENTS

The main programme developments resulted from the Global ICAP and EAZA RCP meetings. Nicolas Lefrique from Beauval Zoo (France) took over from Arun Idoe as the EEP Coordinator for Emperor tamarin (*Saguinus imperator subgriseus*). At the end of the year, the TAG was looking for a new EEP Coordinator for Red-bellied tamarin (*Saguinus labiatus*) due to the resignation of Aude Haelewyn-Desmoulins. The TAG thanks Aude for her many valuable contributions over the years. During this time, she coordinated two ESB/EEP, was Vice Chair for a short time and organised many tasks including a space survey. Her dedication and passion are much appreciated.

ACHIEVEMENTS DURING THE YEAR

The major achievement was the publication of both the Global ICAP and EAZA RCP by the end of the year. A tremendous amount of planning preceded these workshops, enabling them to run smoothly and have the correct and up-to-date information and reference

Attendees at the Integrated Collection and Assessment Planning meeting in Amsterdam © Callitrichid TAG



material. Much of this was done by the EEO and we are particularly grateful to Katharina Herrmann, Kristin Leus and Nora Hausen for this assistance. We were thrilled to welcome representatives from Brazil and Colombia and two colleagues from AZA to the meeting, as well as others who attended by Skype and phone.

One of the newly formed EEPs is for the Common and Black-tufted-ear marmosets (*Callithrix jacchus* and *C. pencillata*). The programme aims to decrease their populations and use them as ambassador species for the Mountain Marmoset Conservation Programme which focuses on the buffy-tufted-ear marmoset (*Callithrix aurita*) and the buffy-headed marmoset (*Callithrix flaviceps*). The TAG therefore issued a statement on breeding common and black-tufted-ear marmosets, encouraging their phasing out in EAZA collections.

Three other new EEPs cover four species that are not presently kept within EAZA, but for which we actively contribute to conservation planning, including *ex situ* needs assessment, and implementation: the white-footed tamarin (*Saguinus leucopus*), the black-faced lion tamarin (*Leontopithecus caissara*) and the two mountain marmoset species.

The e-newsletter continued to be published about six times per year. More callitrichid training videos were produced as well as one on callitrichid conservation with footage from the field. All videos are on the EAZA Member Area. The Callitrichid Facebook group reached

800 members and included videos and discussion topics to encourage debate. A communications strategy for the TAG was developed and posters produced on conservation and education projects supported by the TAG.

COLLABORATIONS

The TAG was involved in workshops in Brazil and Colombia. In July, 30 professionals from 25 institutions involved in the conservation of the white-footed tamarin met at the Santa Fe Zoo (USA) to develop a national action plan for the conservation of the species. This was under the White-footed Tamarin International Conservation Programme, of



Golden-headed lion tamarin (*Leontopithecus chrysomelas*) resting with infants © Igor Inforzato

which the EAZA TAG is a partner.

A Mountain Marmoset workshop was held at the University of Viçosa, Brazil in March. This was led by Jersey Zoo (UK) and ICMBio (Brazil) and attended by some TAG members. Some attendees visited the new centre for the conservation of Mountain Marmosets in Viçosa, a project supported by EAZA Members.

CONSERVATION AND RESEARCH

Research publications and topics are on the TAG page on the Member Area, under 'research'. Work continues with research on thyroid disease in callitrichids and other primates.

A new edition of *Primates in Peril* was produced (2018-2020) which listed *Callithrix aurita* and *Saguinus bicolor* as two of the 25 most threatened primate species.

The TAG continued to support eight species in field projects in Brazil and Colombia. All these species now have EAZA EEPs.

The golden-headed lion tamarin (*Leontopithecus chrysomelas*) stakeholders held a Conservation Planning Workshop in Bahia, Brazil in October. This was part of the launch, by Antwerp Zoo, of the Bahian Lion Tamarin Conservation Initiative with the aim of advancing the conservation of the species.

The lion tamarin workshop in Poço das Antas, Brazil was also represented by TAG members. It coincided with the International golden lion tamarin (*Leontopithecus rosalia*) day and celebrated the new headquarters of the Golden Lion Tamarin Association at Poço das Antas reserve. A serious topic at this workshop was the effect of the yellow fever on the primate population. Vaccination tests are currently taking place at the Rio Primate Centre.

The TAG promoted the Mountain Marmosets project during the year and raised funds, through promotions and workshops.

ADDITIONAL COMMENTS

Publications resulting directly from the work of TAG members and or TAG approved projects are listed below:
 Douay, G. *et al.* (2019). *Assessment of the utility of a commercial calprotectin and lactoferrin rapid test in diagnosis of marmoset wasting syndrome.* *Journal of Zoo and Aquarium Research* 7(2): 67-73

McCoy, D. *et al.* (2019). *A comparative study of litter size and sex composition in a large dataset of callitrichine monkeys.* *American Journal of Primatology* 81(9): e23038

Price, E. *et al.* (2019). *Individual, social, and environmental factors affecting salivary and fecal cortisol levels in captive pied tamarins (Saguinus bicolor).* *American Journal of Primatology* 81(8): e23033

LARGER NEW WORLD MONKEY

TAG Chair: Jan Vermeer (Sainte Croix Zoological Park, Rhodes, France)

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

INTRODUCTION

New World monkeys are emblematic representatives of the Latin American rainforest and are popular among zoo visitors. As such, they can play an important educational role. Many species are Critically Endangered, and zoos can contribute to their survival through *ex situ* breeding and (financial) support to *in situ* conservation projects. The EAZA Larger New World Monkey (LNWM) TAG consists of 11 EEPs, representing species of all New World primate families.

POPULATION MANAGEMENT PROGRAMME DEVELOPMENTS

After the departure of Gea Karssemeijer (Wildlands Zoo



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

Red-faced spider monkey (*Ateles paniscus*) © Jan Vermeer



Emmen, the Netherlands), Nick Davis (Chester Zoo, UK) took over the role of EEP Coordinator for Colombian spider monkey (*Ateles fusciceps rufiventris*). The EEP for Common squirrel monkey (*Saimiri sciureus*) is still in need of a Coordinator. The TAG Chair is doing the coordination *ad interim* but the TAG is looking for a dedicated Coordinator to take it over. All the data in the studbook is up to date and successfully migrated to ZIMS.

In the last two years, almost all programmes migrated their studbook to ZIMS and therefore did not necessarily manage to publish studbooks. During 2019, the migrations were largely done and the Coordinators should be able to publish their studbook again.

In several of the EEPs we dealt with issues of missing action by the Coordinators. We would like to emphasise that the coordination of a programme needs the dedication of the Coordinator and the availability of time and resources to do it. The TAG is working towards correcting these issues but it has proved to be more difficult than expected.

The BPG for the capuchin monkeys (*Sapajus sp.* and

Cebus sp.) have been approved and published in 2019. The first draft of the white-faced saki monkey (*Pithecia pithecia*) BPG has been finished and will be published in 2020. For all species that do not yet have the BPG, a simple husbandry sheet is available on the TAG page on the Member Area.

ACHIEVEMENTS DURING THE YEAR

In 2019, we tried to organise a mid-year meeting, but not enough Coordinators were able to make themselves available and it was therefore decided to postpone the meeting to 2020. The LNWM TAG session at the EAZA Annual Conference was highly appreciated, a large number of attendants not only heard about the developments of the programmes, but also took part in an interesting discussion on the management of surplus animals and the ethics of culling.

COLLABORATIONS

The collaboration with colleagues from the AZA resulted in the import of two unrelated and highly needed male white-bellied spider monkeys (*Ateles hybridus*). Both males have bred by now, contributing their valuable genes to the European population.

CONSERVATION AND RESEARCH

The TAG and the Red titi monkey EEP collaborate with the local association Proyecto Mono Tocón in Peru, for the conservation of the Critically Endangered San Martin titi monkey (*Plecturocebus oenanthe*) and other Peruvian primates. Several holders of the white-bellied spider monkeys support the Spider Monkey Project in Venezuela.

A group of French zoos is investigating the possibility for a toxoplasmosis vaccine for black-capped squirrel monkeys (*Saimiri boliviensis*), as the disease can be devastating for infected groups of squirrel monkeys. They work in close collaboration with the EEP and its Veterinary advisor.

OLD WORLD MONKEY

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

Vice Chair: Andrea Dempsey (Heidelberg Zoo, Heidelberg, Germany)

INTRODUCTION

The EAZA Old World Monkey (OWM) TAG encourages EAZA Members to participate in integrated *ex situ* activities with key species. These key species have been highlighted by

the TAG, not exclusively due to their IUCN Red List status but also for other significant attributes. These activities should contribute to the *in* and *ex situ* conservation roles of the species. See the EAZA Old World Monkey RCP for more information.

Since July 2019, Andrea Dempsey (Heidelberg Zoo, Germany) is the TAG new Vice Chair. She adds a lot of experience with a variety of OWM species and their *in* and *ex situ* roles to the expertise of the TAG. She was Country Coordinator for West African Primate Conservation Action (WAPCA), located in Ghana and now acts as WAPCA Programme Manager based in the UK, visiting Ghana four times a year.

POPULATION MANAGEMENT PROGRAMME DEVELOPMENTS

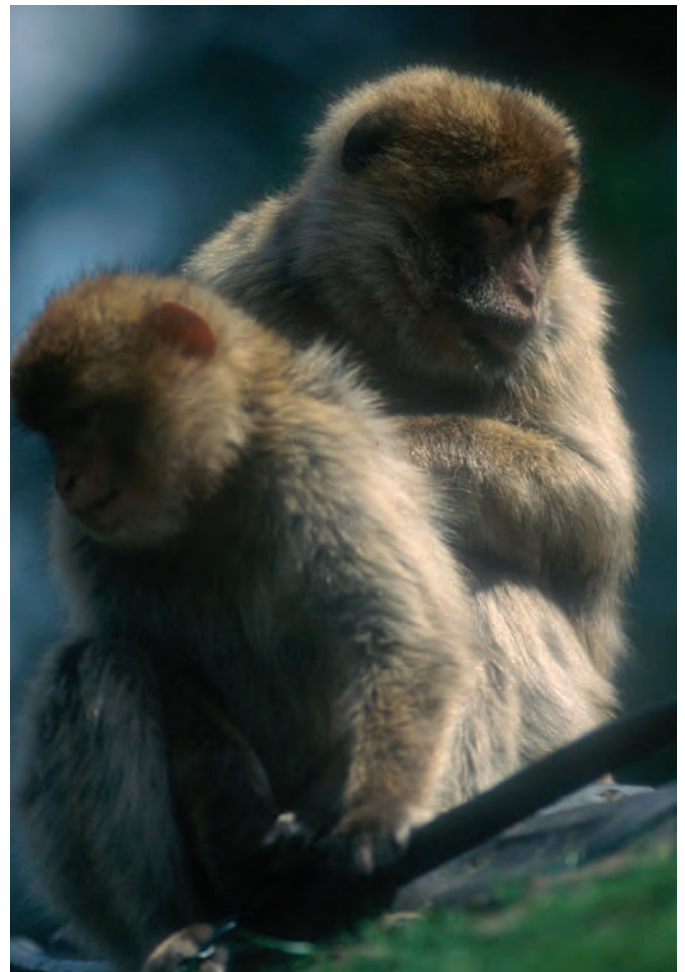
Many OWM species can be easily mixed with other species and as such improve the attractiveness of exhibits for visitors. If more institutions took advantage of this potential, this would immediately benefit the many EEPs that are in need of more institutional space.

The OWM TAG encourages all EAZA Members to, where possible, move towards holding threatened species managed as EEPs to help fulfil the conservation roles established for these species in the RCP, and in particular Barbary macaque (*Macaca sylvanus*), white-naped mangabey (*Cercocebus lunulatus*), Sulawesi black crested macaque (*Macaca nigra nigra*), drill (*Mandrillus leucophaeus*), colobus (*Colobus sp*) and Roloway monkey (*Cercopithecus roloway*). For institutions where such a move is not possible in the short term, OWM holders are expected to contribute through concrete conservation education activities and fundraising.

Not all EEPs have the goal to maintain the population at its current size. Instead, some have been established to actively manage a decrease in population size, for some a move towards a phase-out. This will be done for the following species:

- Crab-eating macaque (*Macaca fascicularis*), Japanese macaque (*Macaca fuscata*), rhesus macaque (*Macaca mulatta*) and southern pig-tailed macaque (*Macaca nemestrina*) will be actively managed for either keeping the *ex situ* population in control or for phase out in order to provide more space for Sulawesi crested macaque, lion-tailed macaque (*Macaca silenus*), Barbary macaque or other species with important conservation roles
- The population of Hamadryas baboon (*Papio hamadryas*)

Barbary macaques (*Macaca sylvanus*) © Alexander Sliwa



is very large, while no important conservation roles were identified. This population will be managed to maintain population size and avoid space competition with gelada baboon (*Theropithecus gelada*), Guinea baboon (*Papio papio*) and other species with important conservation roles. The olive baboon (*Papio anubis*) and the yellow baboon (*Papio cynocephalus*) will be actively phased out for the same reasons

- Some other species are chosen for other reasons than their contribution to species conservation *in situ*:
 - black crested mangabey (*Lophocebus aterrimus*)- Taxonomic diversity (exhibit)
 - patas monkey (*Erythrocebus patas*)- Taxonomic uniqueness
 - De Brazza's monkey (*Cercopithecus neglectus*)- Taxonomic uniqueness
 - northern talapoin monkey (*Miopithecus ogouensis*)- Smallest monkey, Housing of rescued animals
 - Hanuman langur (*Semnopithecus entellus*)- Taxonomic uniqueness

Guereza (*Colobus guereza*) © Ray Charter



ACHIEVEMENTS DURING THE YEAR

The TAG always has, as a major priority, supported threatened OWM populations in range states, both in the wild and under human care. To this end it closely follows the *IUCN Guidelines on the Use of Ex Situ Management for Species Conservation* and the philosophy of the One Plan Approach. This mind set was followed during the TAG RCP meeting which took place from 3-5 July 2019 in GaiaZOO, the Netherlands. The TAG organised an OWM husbandry workshop open to all people working with OWM species prior to the RCP meeting.

COLLABORATIONS

A close cooperation was re-established with the Pan-African Sanctuary Alliance (PASA, USA) in the form of its director (Gregg Tully) joining the TAG during the RCP meeting and providing input from an *in situ* perspective.

A MoU with Stichting AAP (the Netherlands) was established about the cooperation concerning the rescue and management of Barbary macaques within Europe.

CONSERVATION

One of the goals for this year was to link a conservation project to every managed species or managed group of species. For example, all mangabey (*Lophocebus* and *Cercocebus*) holders are advised to support WAPCA. For some species there was already a long-term cooperation in place such as with Selamatkan Yaki (Indonesia) for the Sulawesi crested macaques and with Rettet den Drill (Germany) for the drill.

GIBBON

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

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

INTRODUCTION

There are 20 species of gibbons distributed across 10 countries globally. Over 60 years of conservation action and scientific research from many countries have shown that each species of gibbon faces more or less the same threats: fragmented small populations, hunting, pet trade and the loss of habitat, that would all need better law enforcement and management in-range. All gibbon species are listed as Endangered on the IUCN Red List.

The EAZA Gibbon TAG manages six EEPs: the Siamang (*Symphalangus syndactylus*), two Crested gibbons (*Nomascus leucogenys* and *N. gabriellae*) and three Hylobates (*Hylobates moloch*, *H. pileatus* and *H. lar*).

POPULATION MANAGEMENT PROGRAMME

DEVELOPMENTS

It is a challenge to find sufficient space within EAZA Member institutions to facilitate the recommended population growth. All EAZA Members are asked to give priority to the RCP recommended species (managed EEPs) and to follow non-breeding recommendations when given. Linked to this, the TAG positively acknowledges the results of the selective and controlled breeding that has been implemented to Lar gibbon, siamang and crested gibbon populations - the efforts of the EEP Coordinators resulted in a reduced birth rate. This will help control the population of these larger programmes and provide space to grow for the gibbon EEPs of smaller size.

The TAG prepared for its RCP and LTMP meetings scheduled for 2020 by organising a preparatory workshop at the EAZA Annual Conference as part of the TAG meeting.

During 2018 and 2019, the EEP population of the Javan gibbon (*Hylobates moloch*) was impacted by the removal of very important animals that were sent back to Java by their owner. Further investigation during the LTMP meeting will allow the TAG to assess the level of impact this will have on the future of the species in Europe. After 30 years of effort in building a healthy population, sadness and disappointment are shared by all the TAG members in witnessing this situation.



Northern white-cheeked gibbon (*Nomascus leucogenys*) and son
© M. Foos / Mulhouse Zoo

ACHIEVEMENTS DURING THE YEAR

In 2019 the TAG concentrated on finalising the health, welfare and training chapters in the BPG. The document is expected to be completed in 2020.

The Association of Zoological Gardens (VdZ, Germany) and the Zoological Society for the Conservation of Species and Populations (ZGAP, Germany) conducted a fundraising and awareness campaign on gibbon species among their members (Zootier des Jahre 2019), emphasising the threats that gibbon species face *in situ*. The TAG is grateful for the rising public awareness.

CONSERVATION AND RESEARCH

The TAG encourages all EAZA gibbon holders to contribute through concrete conservation education activities and fundraising. The TAG's work is carried out through cooperation with several programmes and NGOs. This collaboration also involves working with the respective in-country partners and zoo associations. This strengthens

partnerships and, very importantly, helps implement the One Plan Approach for these wonderful species and their environments that we all work towards conserving.

While there are a number of gibbon projects out there, the EAZA Gibbon TAG recommends the support of projects focusing on reversing the threats gibbon populations face *in situ* (deforestation, hunting and pet trade).

Project Anoulak (www.conservationlaos.org) is the official Crested gibbon EEP conservation programme. The EEP asks all crested gibbon holders to consider supporting this programme.

Susan Cheyne, Vice Chair of the Small Ape Section of the IUCN Primate SG, Director of Outrop (www.outrop.com), asked the TAG members to assist her in the fight against illegal trade of gibbons to Russia and Ukraine.

GREAT APE

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

TAG Vice Chair: Sandra Reichler (Heidelberg Zoo, Heidelberg, Germany)

INTRODUCTION

The mission of the EAZA Great Ape TAG is to maintain self-sustaining and healthy populations of all the taxa of great apes to sub-specific level, where possible, and to encourage and promote their conservation in the wild. We consider that the primary roles of zoo populations of great apes are 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 can contribute, when necessary, to the reinforcement of wild populations and should therefore be managed to preserve maximum genetic diversity and natural behaviour.

In 2019 we had two Great Ape TAG meetings. The mid-year meeting in La Boissière, France, was filled with a lot of constructive work on the TAG structure, interregional collaboration, research and *in situ* conservation.

Population developments, transfer recommendations and husbandry topics were intensively discussed during the one-day EEP sessions for all four TAG focus species. Michael Krützen (University of Zurich, Switzerland) kindly attended the meeting to explain the genetic situation of orangutan species and specifically the situation with *Pongo tapanuliensis*.

Kutu and Visola, two bonobos (*Pan paniscus*) at Romagne Zoo © Jeroen Stevens



The second TAG meeting took place during the EAZA Annual Conference. We held two sessions that included reports about the TAG and EEP activities as well as interesting presentations on research and conservation topics.

POPULATION MANAGEMENT PROGRAMME DEVELOPMENTS

In 2019, the EEP for Bonobo (*Pan paniscus*) included 137 animals in 10 institutions. The population continued to further grow with eight bonobos being born. The EEP Coordinator and the Species Committee continued working on the BPG for the species.

The EEP for Chimpanzee (*Pan troglodytes*) included 774 animals in 92 institutions. It is managed according to subspecies as described in the LTMP. The BPG are in development and once published expected to provide further guidance on managing the species in EAZA. A new Species Committee has been elected and held its first meeting during the EAZA Annual Conference.

In 2019, the EEP for Western lowland gorilla (*Gorilla gorilla*

gorilla) managed 484 animals in 75 institutions.

The EEP Coordinator and the Species Committee met during the mid-year meeting and the EAZA Annual Conference. Preparations were started for the LTMP meeting scheduled in 2020.

The Orangutan EEP covered both species in 2019: 177 Bornean (*Pongo pygmaeus*) and 150 Sumatran (*Pongo abelii*) orangutans in 72 institutions. Following up the population management in line with the LTMP, the EEP Coordinator and the Species Committee met during the Great Ape TAG mid-year meeting. A new Species Committee was elected.

ACHIEVEMENTS DURING THE YEAR

The TAG structure has been reinforced with the appointment of a new working subgroup, which will intensify research and results in this area.

The 2014 version of the RCP has been updated to a transitional phase while waiting for the new RCP scheduled for 2021.

Many documents have been updated, such as the



Male Sumatran orangutan (*Pongo abelii*) © Heidelberg Zoo / Heidrun Knigge

Breeding Loan agreement (new template) and the Hand Rearing Guidelines, and new ones have been added. To facilitate a better knowledge of the individuals before a transfer between institutions a “Great Ape Behavioural report” template was developed and is now available on the TAG page. It is highly recommended to fill it with the characteristics of the individual to be moved and to send it to the receiving institution. Other important documents include “The Great Ape Gamete Recovery Initiative” promoting the storage of gametes in collaboration with the EAZA Biobank, and the “Great Ape Necropsy Protocol template” to unify the criteria and the information of the necropsy results. Last but not least, as contraception is being applied more often than in the past in our populations, the “Annual Contraception Questionnaire” was designed in collaboration with the EAZA Reproductive Management Group. It is also available on the TAG page on the Member Area and the EEP Coordinators will be required to fill it in.

An additional important document that has been available since 2019 is the Great Ape Veterinary Guidelines, compiling all the information provided for each species in the specific BPG.

All this information provide assistance for future successful management of our great ape populations.

The development of an Education and Communication strategy has been started to help promote the work done and how important activities of zoos in conservation of great apes are. This work will be complementary to the already established collaboration with the EAZA Communication department.

COLLABORATIONS

The first fundamental guidelines for transfers of great apes between different regions have been defined. To increase inter-regional collaboration and knowledge exchange on great ape husbandry, a workshop is being organised by the South East Asian Zoos Association and Taipei Zoo (Taiwan) for 2020. The TAG will provide all possible support including presentations from some of the TAG experts.

CONSERVATION AND RESEARCH

One of our priorities for actively contributing to the species protection in the wild is increased communication and collaboration with various NGOs working in *in situ* conservation of great apes. To encourage institutions’ support for *in situ* conservation, a list of well-known and recommended projects and organisations has been prepared and will be available in the Member Area. The reinforcement of global conservation needs should be made as soon as possible because working together is the only way to accomplish some real change.

According to the EAZA Conservation Database, the contributions for great ape *in situ* conservation has sadly diminished over the last year as compared to previous years. It is a main goal for us to improve that next year.

During the year the TAG’s research group has received several applications for studies asking for the TAG’s support. We have defined three different levels of support, facilitating and accelerating the application and decision procedure as well as increasing the effectiveness.

A Research leader for each great ape species was appointed.

Genetic research is going ahead thanks to the collaboration with the EAZA Biobank. We are continuing the chimpanzee population genetic determination, and have initiated the gorilla one. It was decided that the Great Ape Biobank will be merged into EAZA Biobank.

ADDITIONAL COMMENTS

The TAG members were involved in the following publications:

Strong, V. *et al.* (2019). *Idiopathic Myocardial Fibrosis in Captive Chimpanzees (Pan troglodytes)*. *Veterinary Pathology* 57(1):183-191

Fienieg, E. *et al.* (2019). *Population Paradox: in the wake of a Critically Endangered status update, the EEP is reviewing and revising its strategies*. *Zooquaria* 104

Abelló, M.T. and Reichler, S. (2019). *How is the EAZA Great Ape TAG linked to in situ Conservation?* *Gorilla Journal* 59

More than 40 colleagues attended the TAG mid-year meeting in Zagreb
© Zagreb Zoo archive



SMALL MAMMAL

TAG Chair: Richard Viduna (Jihlava Zoo, Jihlava, Czech Republic)

Vice Chairs: Dijana Beneta (Zagreb Zoo, Zagreb, Croatia) for Hedgehogs, Moles and Shrews subgroup; Dorota Gremlicová (Liberec Zoo, Liberec, Czech Republic) for Cavies and Porcupines subgroup; Jutta Heuer (Halle Zoo, Halle, Germany) for Sloths, Anteaters and Armadillos subgroup; Johannes Pfeleiderer (Duisburg Zoo, Duisburg, Germany) for Mice, Rats, Squirrels, Springhares and Gundis subgroup; and David White (Chester Zoo, Chester, United Kingdom) for Bats subgroup

INTRODUCTION

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

To more clearly advertise this TAG's diversity and

promote its six subgroups together with easier identification and familiarisation of the whole TAG, we presented a new TAG logo at our annual meeting. Many thanks to Dijana Beneta and colleagues (Zagreb Zoo, Croatia) for designing it.

In line with the new logo and identity of the TAG, the Bat subgroup has followed and designed its own logo.

POPULATION MANAGEMENT PROGRAMME DEVELOPMENTS

A database has been compiled of all bat species kept in the EAZA region along with the relevant contacts at each collection. If you keep bats within your organisation, please get in touch to ensure that David White (Chester Zoo, UK) has your details.

In 2019, taxonomy changes were revised. The reestablished order *Eulipotyphla* now includes the families *Erinaceidae* (Hedgehogs and Gymnures), *Soricidae* (Shrews), *Talpidae* (Moles, Desmans, Star-nosed Moles and Shrew Moles) and *Solenodontidae* (Solenodons). The list of species present in EAZA institutions was also updated.

Due to the expanding population, which had reached a record number of 155 by the time of the meeting and can now be considered safe, it was decided during the mid-

year meeting to downgrade the Northern Luzon cloud rat (*Phloeomys pallidus*) from ESB to MON-P level. Coordinator Pavel Brandl (Prague Zoo, Czech Republic) will now focus on the ESB for the Southern Luzon cloud rat (*Phloeomys cumingi*), which has been decreasing and is more challenging due to slow reproduction and high mortality.

In preparation for its upcoming RCP, the *Hystricomorpha* subgroup started discussing the future of existing programmes and monitoring. One of the conclusions made and approved by the TAG during the mid-year meeting was to change the former Azara's agouti ESB to a MON-P with John Meek (Newquay Zoo, UK) still in charge of it.

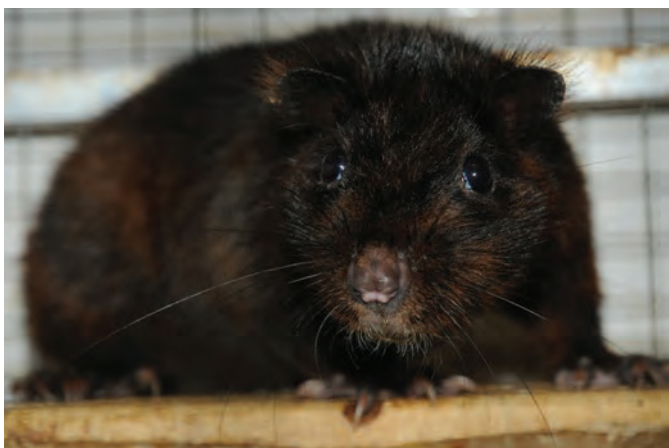
Demonstration Guidelines for Anteaters used in public demonstrations was prepared by the Giant Anteater EEP and Tamandua ESB and issued in June 2019. They are available on the EAZA website.

ACHIEVEMENTS DURING THE YEAR

In the beginning of February, the EEP Committee confirmed the nomination of Dijana Beneta as TAG Vice Chair responsible for subgroup *Soricomorpha*, *Erinaceomorpha* and *Scadentia*.

Within the remit of the subgroup Mice, Rats, Squirrels, Springhares and Gundis, two further species were proposed for the EU Invasive Alien Species (IAS) list and entered the process of risk assessment. Both species were discussed within the TAG regarding their potential as IAS and feedback to the European Commission was compiled.

The Canadian beaver (*Castor canadensis*) is meeting, at least to a certain extent, all determined criteria. They are capable of colonising all or almost all parts of EU territory, are already present in nature, are impossible to be eradicated in vast parts of the EU territory, are evidently posing a serious threat to native species or ecosystems and



Southern Luzon giant cloud rat (*Phloeomys cumingi*) at Jihlava Zoo
© Richard Viduna

are kept in sufficient numbers within the EU territory, which allows the potential establishment of an alien population from escapees. The TAG thus supports listing this species on the IAS list. All roles of this species in collection could also be fulfilled by the European beaver (*Castor fiber*), therefore the TAG does not see a necessity of a captive population in the EAZA region of Canadian beaver.

In contrast, the Finlayson's squirrel (*Callosciurus finlaysonii*) is only occurring in very restricted areas in Italy, is only kept in small numbers, and is certainly not capable of colonising vast parts of EU territory. There is no clear evidence of negative effects on native species and therefore the TAG does not support adding this species to the IAS list.

COLLABORATIONS

Arnaud Desbiez (Instituto de Conservação de Animais Silvestres, Brazil) from the Anteater, Sloth, and Armadillo subgroup attended the TAG annual meeting in Valencia (Spain) to present proceedings of the "Projeto Tatu-Canastra" focused on the giant armadillo (*Priodontes maximus*), which has been followed and supported by the TAG.

CONSERVATION AND RESEARCH

During the mid-year meeting in Zagreb Zoo, a fundraising auction took place and together we were able to collect € 850 to support Projeto Tamanduá, dedicated to giant anteaters (*Myrmecophaga tridactyla*), silky anteaters (*Cyclopes didactylus*) and lesser anteaters (*Tamandua tetradactyla*).

Counts were completed on the Livingstone fruit bat (*Pteropus livingstonii*) roosts on Anjouan and Mohéli islands (Comoros) following the devastating cyclones at the end of 2019. Results were not as bad as initially feared although less individuals were found than expected on the small island of Mohéli. However, a new, possibly temporary, roost on Anjouan was discovered which held over 600 individuals! That means we are up to around 1,200 bats on Anjouan.

ADDITIONAL COMMENTS

The 9th volume of the Handbook of the Mammals of the World project, BATS, was published during 2019 by Lynx Edicions.

A bat e-newsletter, THE ROOST, is being launched to help raise the profile of bats. The newsletter will contain all kinds of articles relating to bats, from research and exhibit design to conservation work and native species. The e-newsletter

will be circulated to anyone interested in bats, so please get in touch with David White to receive a copy or contribute. The 1st Edition is coming soon.

CANID AND HYAENID

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

Vice Chairs: Mike Woolham (Banham Zoo, Banham, United Kingdom) and Sarah Forsyth (Colchester Zoo, Colchester, United Kingdom)

INTRODUCTION

Following the publication of the Canid and Hyaenid ICAP and RCP and the initiation of the 10 new style EEPs last year, 2019 was a year of consolidation and implementation of the roles and goals for each. The EAZA Canid and Hyaenid TAG now has a strategic framework and can focus on areas which need development. We have identified the need for Education advisors, to more effectively utilise the expertise within the Species Committees, and the need to increase the *in situ* collaboration with other regions. These collaborations could be with regional and national associations, governments, universities and NGOs, which we are working towards.

We also welcomed two new Vice Chairs to the TAG in 2019, Mike Woolham (Banham Zoo, UK) and Sarah Forsyth (Colchester Zoo, UK). Mike has been a TAG member for many years, managing the Bat-eared fox EEP. Sarah was monitoring the grey wolf (*Canis lupus*) and has many years of experience managing canid and hyaenid species. These appointments give the TAG the additional knowledge and experience to help us achieve our goals. We had to say goodbye to Raymond van der Meer (EEO, the Netherlands) as Vice Chair. We would like to thank Raymond for his many years of hard work that brought the TAG to where it is today but luckily, we have not lost him completely as he stays on as an advisor to the Spotted hyena EEP.

POPULATION MANAGEMENT PROGRAMME DEVELOPMENTS

The Grey wolf EEP was established last year and Marc Enderby, Highland Wildlife Park (HWP, UK), made great headway in identifying generic and subspecies of the grey wolf (*Canis lupus*) to create a separate European wolf (*Canis lupus lupus*) population within the EEP dataset. At the end of 2019 Keith Gilchrist, Animal Collections Manager at HWP, took over the Grey wolf EEP.

Bat-eared fox (*Otocyon megalotis*) and pup © Erfurt Zoo



At the end of 2019 the Painted dog EEP moved 5.2 painted dogs (*Lycan pictus*) to Lekedi Park in Gabon, Africa. This move was approved by the EEP Committee and Lekedi Park was approved as a non-EAZA EEP participant. As well as freeing up space within the European population, this move also allows the TAG and the EEP to monitor the dog's behaviour and adaptation to life in an environment they were once found in. This will also help to build relationships with African colleagues interested in participating in painted dog *ex situ* and *in situ* conservation projects. At the time of writing this, the dogs had settled in well and were enjoying their new 14.8-acre reserve.

ACHIEVEMENTS DURING THE YEAR

At the end of 2018, the EEPs for Striped hyena (*Hyaena hyaena*) and Spotted hyena (*Crocuta crocuta*) and TAG members held a LTMP workshop in Amsterdam. In 2019 we were pleased to be able to publish it for both species. This sets out how we will achieve the roles, set out in the RCP, and gives a 5-year plan for the *ex situ* management for the two hyena species.

COLLABORATIONS

We held a meeting with the IUCN Hyena SG on how the TAG and the SG can work together, particularly relating to education and changing attitudes towards hyenas. Education is the main role for the hyena species held by EAZA Members and the focus is behaviour change for people living with hyenas (*in situ*) and for public visiting zoos (*ex situ*).

We are building strong links with the IUCN Canid SG and the Dhole SG. Patrick Roux (La Haute-Touche Zoo, France), the Dhole EEP Coordinator, participated in the dhole

Lekedi Park, Gabon, welcomed seven painted dogs (*Lycaon pictus*) from the EEP in 2019 © Port Lympne Safari Park



Population and Habitat Viability Assessment workshop held in Thailand. This workshop attracted participants from dhole range states and looked at current spatial data to create an updated range map across all range countries, information on population size, trends, and threats for a species status review and modelling. They also identified training needs, knowledge gaps and research priorities for *in situ* (as well as *ex situ*, insurance) populations.

CONSERVATION AND RESEARCH

The Iberian wolf EEP and the TAG have developed a link with Rewilding Portugal and the LIFE Wolflux project. The aims of this project are to ensure the viability of the wolf subpopulations, increase the numbers of wild prey for Iberian wolves (*Canis lupus signatus*), promote coexistence and reduce conflicts with livestock owners. There is also a demand to develop a strategy to promote local products (agricultural products, tourism, etc.) for local people. EAZA Members can participate in this project through internships and research opportunities, education and funding. Sara Aliácar from Rewilding Portugal gave a presentation at the TAG's annual meeting in Valencia (Spain).

Udo Ganslosser (Greifswald University, Germany), one of our Research advisors, published a paper on the effects of castration on canid behaviour. There were also papers on feeding enrichment for wolves and pair bonding in maned wolves. Links to these papers can be found on the TAG page and in our newsletter.

ADDITIONAL COMMENTS

We are now in our second year of producing the TAG newsletter. This contains conservation, education, research and species information relating to canid and hyaenid species. To assist the TAG in promoting our work and sharing news stories, research and conservation activities, we created an EAZA Canid and Hyaenid TAG Facebook

page.

In 2019 we had two articles in Zooquaria magazine. In the issue 103, Marc Enderby wrote a piece about the new Grey wolf EEP, the challenges of coordinating a new EEP and how we should be managing pack structure and behaviour. In the issue 106, Raymond van der Meer and Frédéric Houssaye (CERZA, France), Striped hyena EEP Coordinator, wrote an article about public perception and how, through education, we can improve the reputation of hyenas.

BEAR

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

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

INTRODUCTION

2019 was the year of the first "Happy Bears' Day", an event to highlight the eight bear species of the world, the threats they face and the possibilities to support their conservation.

ACHIEVEMENTS DURING THE YEAR

A major topic was the welfare assessment of Ursids in general and geriatric bears specifically. Scoring systems already in use in several zoos were discussed during the mid-year meeting held in Lisieux Zoo, France, on 27-29 March 2019. A scoring sheet was drafted and revised by the TAG members. It is now being tested in some zoos, before it is offered to all EAZA bear-keeping facilities.

On 5 May, the first Happy Bears' Day was celebrated in 18 zoos. The one-day event had a dual purpose: firstly, to raise awareness about the eight bears species in the world and the threats they face, and secondly fundraising for the *in situ* projects that were promoted in the event's programme. The educational consultant of the prominent event was Zsuzsa Petró from Sóstó Zoo (Hungary) while Rémy Gaillot from Auvergne Zoological Park (France) was responsible for

“Bear species of the world” map and cover developed for Happy Bears’ Day © Sóstó Zoo



the fundraising and for maintaining contact with the *in situ* programmes.

The EAZA facilities holding bears were informed about the event by email and social media. The event logo, programme, numerous bear education panels (such as the “Bears of the World” map in eight different languages, the bear cube or the bear family tree) and fundraising tips were downloadable from the website of Sóstó Zoo.

The following *in situ* programmes were chosen by the members of the TAG and participating institutions were free to choose the one(s) they wanted to support and promote:

- The Chaparrí Ecological Reserve in Peru is dedicated to the protection of Andean bears (*Tremarctos ornatus*) from habitat destruction and hunting
- Free the Bears aims at improving knowledge about the biology and ecology of Asian black bears (*Ursus thibetanus*) to create relevant conservation management plans in Cambodia
- Api’ours, a project developed by Ferus, increases local involvement in brown bears (*Ursus arctos*) by increasing



biodiversity - with fruit trees and beehives - in their habitat in France

- The Agra rehabilitation centre, through Wildlife SOS, rescues sloth bears (*Melursus ursinus*) in India, provides jobs to former bear owners and raises awareness of these animals
- The Sun bear Conservation Education Centre shares knowledge about Malayan sun bears (*Helarctos malayanus*) to the local communities, NGOs, universities, government agencies and legislative assemblies in Indonesia
- Polar Bears International (US) works to conserve polar bears (*Ursus maritimus*) and their habitat

Many EAZA Members participated in the Happy Bears' Day and a colourful programme was offered to the visitors. There were animal feedings, lectures, workshops for creating enrichment items for their bears, handicraft corners, face painting, selling of teddy bear muffin and ice creams, and of course a lot of educative information about the animals was given. The 2020 edition is in preparation.

COLLABORATIONS

As an outcome of the 4th goal 'Maximise the Contribution of *ex situ* Sun Bear Populations to Conservation' of the Sun Bear Action Plan, an *ex situ* sun bear research workshop was held on 8-10 June 2019 at Royal Burgers' Zoo (the Netherlands). The TAG Vice Chair participated in this workshop. A total of 20 research topics out of more than 50 were selected for further consideration and prioritisation.

Some TAG members attended the Advanced Bear Care conference organised by the Bear Care Group on 9-13 October 2019 in Edinburgh (UK).

CONSERVATION AND RESEARCH

Zsuzsa Petró and Rémy Gaillot became members of the Captive Bear Expert Team (CBET) of the IUCN SSC Bear SG. The TAG endorsed the project of Cecilie Ravn Skovlund (Copenhagen Zoo, Denmark) who started her study in October 2019 on the 'Development of a Welfare Assessment Protocol for Polar Bears in Zoos'. A pilot study on 'Behavioural Reactions of *Helarctos malayanus* to Olfactory Stimuli' was conducted by Tobias Lenz at Cologne Zoo and Tierpark Berlin (Germany).

ADDITIONAL COMMENTS

A most updated and comprehensive review on sun bears is found in Crudge, B. *et al.* (2019) *Sun bears: Global status review and conservation action plan, 2019-2028*. IUCN SSC Bear Specialist Group / IUCN SSC Conservation Planning Specialist Group / Free the Bears / TRAFFIC.

SMALL CARNIVORE

TAG Chair: Aude Haelewyn-Desmoulins (Reynou Zoo, Le Vigen, France)

TAG Vice Chairs: Janno Weerman (Rotterdam Zoo, Rotterdam, the Netherlands) and Peggy Rüegg - van den Broek (Papiliorama Foundation, Kerzers, Switzerland)

INTRODUCTION

The EAZA Small Carnivore TAG (SC TAG) has 36 members, covers eight EEPs, six ESBs and monitors 19 species and subspecies. Membership of the TAG underwent some changes during the year, leading to vacancies for the monitoring of 13 more species. Allan Galway (formerly Belfast Zoo, UK) resigned from his position of TAG Vice Chair. We thank him for his work and are pleased to welcome Peggy Rüegg - van den Broek (Papiliorama Foundation, Switzerland) who took over the position. María Díez-Leon (London Royal Veterinary College, UK) joined the TAG as Research co-coordinator.

POPULATION MANAGEMENT PROGRAMME DEVELOPMENTS

In spring 2019, Chris Haslam (Colchester Zoo, UK) volunteered to take over the MON-P for Banded mongoose (*Mungos mungo*). Angelica Åsberg (formerly Furuviik Zoo, Sweden) took over the ESB for Yellow-throated marten (*Martes flavigula*).



Peggy Rüegg - van den Broek, new Small Carnivore TAG Vice Chair
© Papiliorama

ACHIEVEMENTS DURING THE YEAR

The SC TAG had a very fruitful mid-year meeting in March, followed by the first International Small Carnivore Workshop, which was organised and hosted by GaiaZOO (the Netherlands). It was attended by 113 delegates, including zookeepers, veterinarians, curators and educators from 17 different countries, mostly from EU countries, but also from Australia, Singapore and the United States. During the workshop, more than € 3,000 were raised for the Lutreola Foundation (Estonia). This event will be organised every two years with the second workshop scheduled for spring 2021.

Our open meeting at the EAZA Annual Conference was, once again, very well attended and a number of institutions have expressed their interest in supporting the conservation of small carnivores worldwide, in particular of Owston's civet (*Chrotogale owstoni*), categorised as Endangered on the IUCN Red List of Threatened Species in 2016. A presentation on the *in situ* conservation activities for this species has proven very useful to increase the interest of the European zoo community. This species is one of the highest priorities to the TAG. An international "Save Owston's Civet Workshop" was held in Hanoi (Vietnam) in April 2019, leading to the first Conservation Strategy for this species (2019-2029). Six of the TAG

members have participated in this workshop. The report can be found on the TAG page on the Member Area.

COLLABORATIONS

The SC TAG works in close collaboration with the IUCN SSC Small Carnivore and Otter SGs. Members from both groups are advisors to the TAG and vice versa. The best example of this collaboration is the preparation and fundraising for the "Save Owston's Civet Workshop". The TAG actively contributes to the implementation of the strategy. The Conservation Strategy defines four goals and 21 objectives, of which 13 have been ordered for immediate priority and are to be implemented within the coming two years. Among these 13 high priorities, three concern the establishment of a "conservation breeding programme to prevent extinction and accelerate recovery".

CONSERVATION AND RESEARCH

The Owston's civet has had significantly low reproductive success in both the *in* and *ex situ* captive populations. By identifying which individuals within the EEP are still likely to reproduce, the EEP can make evidence-based management decisions to increase the reproductive success of the population, for example by pairing reproductively active individuals together.



Save Owston's Civet Workshop in Hanoi © Save Vietnam's Wildlife

This research is the first to validate and characterise progesterone, estradiol, and testosterone concentrations in faeces for this species. The methods used in this project will be replicated in the *in situ* captive population housed at Save Vietnam's Wildlife (Vietnam).

Madagascar is another priority area to the SC TAG. In 2018, a Euplerid conservation group has been re-launched. In 2019, it took the first steps for a Malagasy Carnivore Action Plan Workshop, using the IUCN SSC Guidelines on the Use of *Ex situ* Management and facilitated by the Conservation Planning Specialist Group (CPSG). Key stakeholders have been identified and the CPSG has been approached and involved in a discussion regarding potential dates and venue.

The Red panda EEP and GSMP are interested in prevalence and cause of mucoid faeces. These occurred mostly in the AZA region but seem to become more common in the EAZA region. The aim of the research is to study their occurrence through time in relation to diet and their gut microbiome. Preliminary tests have been run in 2018 and funding secured. Samples of faeces will be collected on a monthly basis as well as opportunistically, by 50 EAZA institutions which volunteered to participate in this research until May 2020.

The information gained from the 2018 *ex situ* GPS-collaring research was used to collar 10 red pandas (*Ailurus fulgens*) in Eastern Nepal in September 2019. The research is led by Red Panda Network (USA) in close cooperation with The University of Queensland (Australia) and Rotterdam Zoo (the Netherlands). In total, it took 62 days and 420 working hours to track, immobilise and collar the first red panda. The information from the *ex situ* research and knowledge from the zoo community was key in the success of this field work.

ADDITIONAL COMMENTS

The 25th edition of Eurofurence, Europe's largest furry convention, focused on European mink (*Mustela lutreola*). Foundation Lutreola was chosen for charity. This event generated more than € 25,000 for the conservation of the European mink!

The TAG members were involved in the following publications:

Veron, G. *et al.* (2019). *Genetic diversity and structure of the binturong *Arctictis binturong* (Carnivora: Viverridae) – status of the elusive Palawan binturong and implications for conservation*. Zoological Journal of the Linnean Society

188(1): 302-318

Willcox, D. *et al.* (2019). *Conservation Strategy for Owston's Civet *Chrotogale owstoni* 2019 – 2029*. Save Vietnam's Wildlife, Vietnam and the IUCN SSC Small Carnivore Specialist Group

FELID

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

TAG Vice Chairs: André Stadler (Alpenzoo, Innsbruck, Austria) and David Barclay (Highland Wildlife Park, Kingussie, United Kingdom)

INTRODUCTION

2019 was another productive year for the EAZA Felid TAG. There was full attendance at the annual mid-year meeting, hosted by the Environment and Protected Areas Authority of the Government of Sharjah (UAE), and two successful felid sessions at the EAZA Annual Conference. Whilst key topics of discussion in 2019 focused on small cat management, felid reintroductions and taxonomy, the TAG also reviewed the application of the new EEP structure and the upcoming RCP due in 2021.

POPULATION MANAGEMENT PROGRAMME DEVELOPMENTS

The RCP summary table remains unchanged from the most recent update (March 2018) and is available on the TAG page on the Member Area. New BPG have been completed for the Jaguar (*Panthera onca*), while several BPG are currently being worked on with publication expected in 2020. Final EEP evaluations were completed in 2019 providing Coordinators with clear guidance and support for improving the long-term sustainability of programmes. The Felid TAG will hold the RCP meeting in 2021.

The MON-P for Jaguarundi (*Herpailurus yagouaroundi*) has been taken on by Melody Cortés (Oasys Zoological Reserve, Spain).

The MON-P for Serval (*Leptailurus serval*) has been taken on by Leandra Pörtner (Walter Zoo, Switzerland). Neville Buck (Port Lympne Safari Park, UK) has been appointed as new EEP Coordinator for the Clouded leopard (*Neofelis nebulosa*).

ACHIEVEMENTS DURING THE YEAR

The TAG continues to communicate the Felid TAG Demonstration Guidelines, completed in 2018, as

Felid TAG mid-year meeting, in Sharjah, United Arab Emirates © Felid TAG



guidance for improved educational displays and animal management. 2019 saw the completion and application of a molecular studbook for the UK population of wildcats (*Felis silvestris silvestris*). This work has been critical in supporting improved population management. The TAG supports wildcat reintroduction planning in Scotland and was delighted to receive news of successful funding from the EU LIFE programme in 2019 to take this work forward. The Pallas's cat EEP has also played a key role in the development of the first Status Review and Conservation Strategy for the species, compiled in collaboration with the IUCN Cat SG and the Pallas's cat International Conservation Alliance (PICA). The report has been published as a special issue of the IUCN CSG Cat News (Breitenmoser *et al.*, 2019).

COLLABORATIONS

The TAG was delighted to welcome Autumn Nelson, AZA SSP coordinator for Sand cats (*Felis margarita*), to the annual mid-year meeting in Sharjah and is privileged to continue this close relationship with AZA. Close collaborations with felid researchers, conservationists and specialists allow the TAG to further its strong connections with *in situ* conservation efforts. The mid-year meeting included participation from key staff involved with both Iberian lynx (*Lynx pardinus*) recovery in Spain and Portugal, as well as Asiatic cheetah (*Acinonyx jubatus venaticus*) conservation in Iran. Key discussions continue within the TAG in relation to felid reintroductions and taxonomy.

The ongoing close collaboration with the IUCN Cat SG Chairs is a valuable resource for TAG members and allows productive discussions and reviews on a regular basis.

CONSERVATION AND RESEARCH

TAG members continue to play a valuable role in conservation and research efforts for several species. The Felid Gamete Rescue Project (coordinated by Leibniz Institute for Zoo and Wildlife Research, Germany) remains as a key support tool for the TAG for maintaining a gamete bank for several species. Several programmes and their members including, but not limited to, the Amur tiger (*Panthera tigris altaica*), Amur leopard (*Panthera pardus orientalis*), Persian leopard (*Panthera pardus saxicolor*), Asiatic cheetah, Pallas's cat (*Otocolobus manul*), wildcat, Sri Lankan leopard (*Panthera pardus kotiya*), and snow leopard (*Uncia uncia*) contribute directly to the *in situ* conservation efforts of the species. *In situ* field research projects for black-footed cat (*Felis nigripes*), led by the TAG Chair, and sand cat, in particular, act as models for other small cat field research. Ongoing research with African lion taxonomy, led by Kim Skalborg Simonsen (Givskud Zoo, Denmark) supports critical decision making in relation to population management.

ADDITIONAL COMMENTS

The Felid TAG continues to seek an Education advisor to assist with key messaging, education development and

awareness. A focus of this position is to support awareness, holding and management of small cat species, since many of these programmes are in need of new holders. A survey, following the 2018 EAZA Annual Conference, was also conducted by the TAG to capture audience feedback. The results helped shape the agenda and presentation topics during the 2019 EAZA Annual Conference.

One of the publications of 2019 was:
Breitenmoser, U., Breitenmoser C. and Lanz, T. (2019). *Pallas's cat Status Review and Conservation Strategy*. IUCN Cat News Special 13.

MARINE MAMMAL

TAG Chair: Claudia Gili (Genoa Aquarium, Genoa, Italy)

TAG Vice Chair: Agustín López Goya (Zoo Aquarium Madrid, Madrid, Spain)

INTRODUCTION

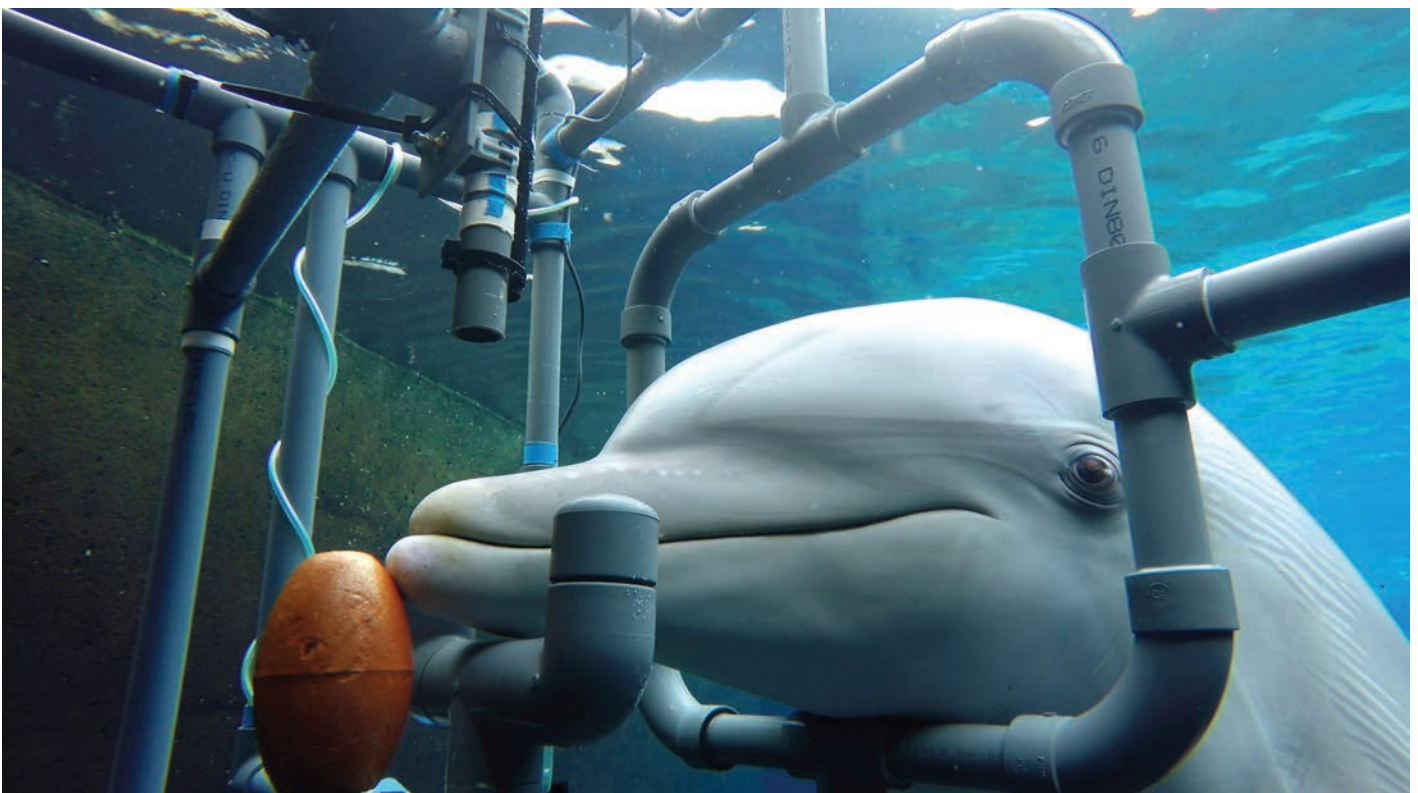
The EAZA Marine Mammal TAG oversees the running of four EEPs, for the Bottlenose dolphin (*Tursiops truncatus*), Caribbean manatee (*Trichechus manatus*) and Patagonian (*Otaria flavescens*) and Californian (*Zalophus californianus*) sea lions. The two pinniped programmes were upgraded from ESBs to EEPs. The TAG also runs three ESBs, for the

South American fur seal (*Arctocephalus australis*), Grey seal (*Halichoerus grypus*) and Walrus (*Odobenus rosmarus*). There are MON-P for the South African fur seal (*Arctocephalus pusillus*) and Harbor seal (*Phoca vitulina*).

Our Veterinary advisors are:

- Daniel García-Párraga (Valencia Aquarium, Spain): TAG advisor
 - Katrin Baumgartner (Nuremberg Zoo, Germany); after the sad loss of Gregory Bossart (University of Miami, USA), we selected Mike Walsh (University of Florida, USA) and Antonio Mignucci (Manatee Conservation Center, Puerto Rico) as our new Caribbean manatee international Vet advisors
 - Nicola Pussini (Genoa Aquarium, Italy) and Kerstin Terner (Duisburg Zoo, Germany) as Pinniped advisors
- Within the MoU with the European Association for Aquatic Mammals (EAAM), the board has a position in the TAG. The President of EAAM Javier Almunia (Loro Park, Spain) has been covering this position in 2019.

Since last year, Tania Monreal (International Zoo Veterinary Group – Independent Veterinarian) is a member of our TAG as a representative between EAZA and the Accreditation Committee of EAAM, without a right to vote.



Bottlenose dolphin (*Tursiops truncatus*) participating in a research study © Nuremberg Zoo, Tim Hüttner

Harbor seal (*Phoca vitulina*) © Attica Zoological Park



POPULATION MANAGEMENT PROGRAMME DEVELOPMENTS

We are working on all the programmes and addressing the major challenges for the species targeted either by our detractors or by commercial requests from other countries. The TAG has worked to upgrade the two sea lion programmes from ESBs to EEPs. We do not foresee the need for upgrading the Walrus ESB due to the very limited number of animals.

Thanks to a close collaboration of the TAG with “Ex Situ Options for Cetacean Conservation” (ESOCC) there is a possibility of getting involved with conservation projects on freshwater dolphins.

ACHIEVEMENTS DURING THE YEAR

The TAG reorganised its structure and functions with regular meetings and programmes to engage the new members and participants. The TAG also addressed issues such as:

- the current delicate situation with Dolphinarium in Europe and the challenge with dolphin moves by holding several skype meetings with the *Tursiops truncatus* Species Committee
- the commercial activities related to pinnipeds (sealions in particular) being sold abroad in large numbers (thus disappearing from the studbooks) by upgrading both programmes from ESBs to EEPs
- developing “EAZA Demonstration Guidelines for Marine Mammals”
- collaborating with EAAM in their process drafting the EAAM Standards and Guidelines

Finally, the TAG Chair has been leading the proposal and start-up of the next EAZA Conservation Campaign

named “Which Fish?”. The campaign is focusing on sustainability of aquatic resources and has been launched on three occasions – during a plenary at the EAZA Annual Conference, at the EAAM Institutional Members mid-year meeting in Valencia and at the EUAC meeting at Nausicaá (France) – as EAZA, EAAM and EUAC are partners in the campaign. This campaign addresses the impact of commercially-based human activities on marine species conservation. It focuses on how zoos and aquariums work and will encourage participants to make real changes to their working practices by applying the already shared vision to united objectives for marine biodiversity management and protection.

The campaign was developed along three different axes:

- 1 Human sustainable consumption
- 2 Sustainable animal feed (very important for marine mammals)
- 3 Collection planning for sustainable aquatic species

COLLABORATIONS

Collaboration with EAAM continues, aiming to achieve the best possible species management and care of marine mammals, and to make the greatest possible contribution to public education and conservation of these species and their habitats. The MoU between the two associations was evaluated in September 2018 and updates were provided to EAZA Council.

CONSERVATION AND RESEARCH

EAZA Members, such as Genoa Aquarium and Attica Zoological Park (Greece), are involved with EAAM in direct participation and/or financial support to conservation projects on monk seals carried out by the Hellenic Society for the Study and Protection of the Monk seal (MOM) in Greece on a yearly basis.

Genoa Aquarium continues the conservation project on wild *Tursiops truncatus* in the Mediterranean, engaging more than 20 research facilities on the European coasts to share data related to the abundance of the species, the census and to Marine Strategy. It has also started a new related project named: Dolphins Without Borders.

Nuremberg Zoo and the zoo-based Organisation for the Conservation of Latin American Aquatic Mammals - YAQU PACHA e.V. (Germany) are very active in conservation activities and have organised in cooperation with Mundo Marino (Argentina), the ESOCC Franciscana Workshop in San Clemente del Tuyú, Argentina, on 3-6 November

2019. This workshop was designed to explore the role *ex situ* management can play in the conservation of the Franciscana dolphin (*Pontoporia blainvillei*). Important recommendations were:

- Expand the capture/tag/release programme for Franciscana dolphins in Brazil and Argentina to include biological data gathering in support of rehabilitation/ release of live by-caught and stranded dolphins and to inform the possible future development of an action plan using the One Plan Approach
 - develop rehabilitation protocols taking into account regional constraints
 - develop goals, protocols, and field tests to learn more about the response of Franciscana dolphins to capture, handling for extended periods at sea, and transport
- Nuremberg Zoo and YAQU PACHA are also involved in these projects: Sotalia Dolphin in Venezuela, Projeto Botos da Lagoa dos Patos in South Brazil, coordination of the Consortium Franciscana and Chile Dolphins Project in Chile. Nuremberg Zoo is finishing a 4-year research project on electroreception in dolphins. First results are quite promising and will be published within the next months.

ELEPHANT

TAG Chair: Thomas Kölpin (Wilhelma Zoo, Stuttgart, Germany)

TAG Vice Chair: Jana Pluháčková (Ostrava Zoo, Ostrava, Czech Republic)

INTRODUCTION

The EAZA Elephant TAG manages two EEPs: for the African elephant (*Loxodonta africana*) and the Asian elephant (*Elephas maximus*). The goal of the TAG is to develop a sustainable population of both species within EAZA institutions.

POPULATION MANAGEMENT PROGRAMME DEVELOPMENTS

In 2019, the African elephant EEP had 2.2 births, 0.2 deaths and transferred 2.0 elephants. At the end of 2019 the population management programme contained 54.136 (190) elephants in 46 institutions.

The EEP is still in a very challenging situation as 10 births per year are needed for a healthy self-sustaining *ex situ* population of African elephants within EAZA institutions.

In 2019, the Asian elephant EEP had 1.3 births, 1.8 deaths and transferred 7.3 elephants. At the end of 2019

the programme contained 95.216 (311) elephants in 73 institutions.

The main challenge for this EEP remains the significant lack of space for males. Although the space shortage for female elephants has become more apparent as well.

ACHIEVEMENTS DURING THE YEAR

New Species Committees were elected for both the Asian and African Elephant EEPs.

BPG, as well as Demonstration Guidelines, have been completed and should be published in 2020.

The TAG took several important decisions:

- Free contact with elephants should be phased out by 2030 at the latest
- New Management Strategy: Institutions constructing enclosures for keeping a breeding herd must also have the ability to keep a breeding bull and a bachelor group at the same time, to allow for fission-fusion management
- The TAG does not support elephant imports at the moment for either species

Both EEPs are working on updating the list of holders contributing to *in situ* conservation of African and Asian elephants.

The main focus goals and management strategies for the African elephant EEP are:

- Avoid keeping single elephants; in 2019 the number of single held elephants dropped to one
- Avoid separating females from their mothers
- Do not separate young bulls too early from their families
- Minimise the time young bulls are kept alone in their new facilities when building new bachelor groups
- Do not mix young bulls with older females
- Bring all females of age class 8-30 years (25) into institutions where there are breeding opportunities
- Investigate potential sperm donors and banking of semen
- Find more institutions willing to house males
- Initiate research on bull reproduction
- Review CITES decisions made at the 18th Conference of the Parties (CoP18) and provide input where required on contribution to conservation and sharing of knowledge around the suitable housing and care for African elephants in zoos and other *ex situ* facilities
- Professional cooperation with the IUCN African elephant SG

African elephant (*Loxodonta africana*) © Thomas Kölpin



Achievements for the African elephant EEP in 2019:

- Exchange of breeding bulls to prevent inbreeding and improve breeding
- Studbook migrated to ZIMS for Studbooks
- Five pregnancies (three natural, two artificial inseminations)
- List of contributions of African elephant holders to conservation
- Ten new transfer recommendations were issued and all of them are in progress

Within the next five years, the following management strategy will be followed for the Asian elephant EEP:

- Tighten relations with *in situ* experts and range states for the *Elephas maximus indicus* x *Elephas maximus maximus* population (IxM population) and for the Sumatran elephant (*Elephas maximus sumatranus*) to truly evaluate potential direct and indirect conservation roles

- Until there is more clarity on the exact direct and indirect conservation roles, the EEP should in the meantime:
 - Stop mixing the IxM population with the Sumatran and Bornean Evolutionary Significant Units (ESUs)
 - Phase out the Bornean ESU and hybrids, given their small number
 - Stop mixing Sumatran elephants with the IxM population and the Bornean ESU

The current main focus of the Asian elephant EEP, as part of the LTMP, is the IxM population. The IxM EEP population has a number of issues that need to be addressed urgently, most notably a space problem for male elephants. Until there is further clarity on the (direct) conservation roles, the IxM population will be managed as if it had an insurance role aiming to maintain a demographically and genetically diverse population with behaviourally competent individuals.

With this in mind, the LTMP will develop a reproductive plan for all institutions with recommendations for all individuals that will focus on:

- An EEP-driven, rather than an institution-driven, management strategy. The Asian elephant Species Committee decides where males and female groups move to and from, and which animals have a (non-) breeding recommendation, based on what is best for the EEP population and the individual elephants
- Working towards increasing space and social options for the housing of bulls (*i.e.* towards fission–fusion holding systems for breeding herds, option for bachelor herds, dedicated bull facilities, and so on – these should become part of the new BPG)
- Reproductive health of females by ensuring first calves are produced at the appropriate age of eight years
- Increasing the inter-birth interval to seven years to slow population growth while not compromising the future reproductive potential of females
- Consider research into sex ratio at birth and sperm-selection/options to reduce the number of male calves
- Cooperation with other regions might be explored, although it is not expected that this will contribute to solving the bull-related space problem.

Achievements for the Asian elephant EEP in 2019:

- Welcomed a new bull-holding institution, namely Nikolaev Zoo (Ukraine, Candidate for Membership)
- Performed pre-research for a large DNA sequencing study within the EEP population
- Got in touch with SSP Studbook keeper Bob Lee (Oregon Zoo, USA), orientating conversations about possible collaborations were started
- Migrated studbook to ZIMS for Studbooks

COLLABORATIONS

The African Elephant EEP advisor Harald Schwammer (Vienna Zoo, Austria) and the African elephant EEP Coordinator Arne Lawrenz (Wuppertal Zoo, Germany) are board members of the International Elephant Foundation (IEF, USA). IEF supports conservation, awareness and scientific programmes that enhance the survival of elephants and protect their habitats worldwide. In 2019, IEF supported over 12 projects in eight African countries focusing on a range of actions from anti-poaching patrols to habitat protection to community education.

CONSERVATION AND RESEARCH

The TAG collaborates with the IEF in the following projects in Africa:

- Kenya: Big Tusker Project; Mount Kenya Horse Patrol Team; Support of the Anti-Poaching Teams 9-1 and 9-2 of Northern Rangelands Trust Conservancies; Experimental Test of Elephant Deterrents and Ecological Correlates of Crop Raiding
- Zambia: Logistical support for the Nsama community scout anti-poaching unit for Nsumbu National Park; Support to Wildlife Protection Efforts in the Lower Zambezi National Park; Elephant Utilization of the Kavango-Zambezi Wildlife Corridor of KAZA TFCA
- Uganda: Elizabeth Conservation Area; Protecting elephants in Kibale National Park through conservation education
- Other countries: Boots on the Ground-Ziama, Republic of Guinea; Extension of solar-powered electric elephant fence to reduce human-elephant conflict in Thuma Forest Reserve and Dedza Salina Escarpment, Malawi; Debunking Critical Assumptions to Improve Forest Elephant Censusing and Monitoring, Gabon; Reduction of poisoning of African elephants in Southern Africa, Zimbabwe
- Transfrontier Africa – Black Mamba Anti-Poaching Unit, South Africa; Big Life Foundation, Kenya/Tanzania; Mali elephant project, Mali; Mara elephant project, Kenya; Save elephants, Central Africa; Akagera learning centre, Rwanda; Elephant Orphanage Project, Zambia; Anti-poaching/patrolling costs Bateke Plateau National Park, Gabon; Tawi Conservancy, Kenya

The TAG is also working to enlarge collaboration with IUCN SGs for both Asian and African elephants.

ADDITIONAL COMMENTS

A new EAZA Elephant TAG Facebook page was founded with the goals of drawing the attention of holders as well as the public to the achievements, conservation projects and research carried out by the TAG and its holders. It informs them on the latest knowledge and highlights the importance of keeping elephants in human care.

The TAG page on the Member Area was reorganised, replenished and several documents are currently being updated.

Kulan (*Equus hemionus kulan*), Great Gobi B SPA, June 2019 © Jaroslav Šimek



EQUID

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

TAG Vice Chairs: Jaroslav Šimek (Prague Zoo, Prague, Czech Republic) and Tanya Langenhorst (Marwell Wildlife, Marwell, United Kingdom)

INTRODUCTION

A total of six EEPs fall under the remit of the EAZA Equid TAG, including the African wild ass (*Equus africanus somalicus*), Grevy's zebra (*Equus grevyi*), Turkmenian kulan (*Equus hemionus kulan*), onager (*Equus hemionus onager*), Przewalski's horse (*Equus przewalskii*) and Hartmann's mountain zebra (*Equus zebra hartmannae*).

New holders are needed, in particular for the African wild ass, Onager, Kulan and Hartmann's mountain zebra EEPs.

POPULATION MANAGEMENT PROGRAMME DEVELOPMENTS

In summer 2019, Tanya Langenhorst (Marwell Wildlife, UK) handed over the Hartmann's mountain zebra EEP to Marianne de Jesús (Sigean Park, France).

After 34 years of managing the Przewalski's horse EEP, Cologne Zoo (Germany) has handed over the programme to Prague Zoo (Czech Republic) which also holds the International Studbook. Barbora Dobiášová is the new Coordinator.

Stephan Hering-Hagenbeck (Hamburg Zoo, Germany), EEP Coordinator of the Onager stepped down. The EEP will remain in Hamburg and is awaiting approval from the EAZA EEP Committee.

A coalition of Czech zoos has formed to focus on the maneless zebra (*Equus quagga borensis*) with Luboš Melichar (Liberec Zoo), as front man. The main objective is to raise interest between holders and increase numbers.

ACHIEVEMENTS DURING THE YEAR

In November 2019, all TAG members met for a RCP workshop in Wilhelma Zoo, Germany. Following two very productive days, the final document is currently under review and will be published in 2020, with eight applications for new style EEPs submitted.

The VII International Symposium on the Preservation of the Przewalski's Horse «Results of projects of the re-

introduction of *Equus ferus przewalskii* into the wild: issues and perspectives» was held in Orenburg, Russia, in August 2019. The symposium was attended by the TAG Vice Chair and several EEP participants.

The 2nd International Wild Equid Conference was held in Prague, Czech Republic in September 2019. It was co-organised by the IUCN/SSC Equid SG, Derbianus Conservation (Czech Republic), Prague Zoo, U.S. Geological Survey and Faculty of Tropical Sciences of the Czech University of Life Sciences and attended by the majority of the TAG members. The book of abstracts is available on <https://iwec2019.com>.

CONSERVATION AND RESEARCH

An Eritrean PhD thesis is providing post-graduate training for Eritrean nationals and will secure the scientific information needed to understand and conserve the Critically Endangered African wild ass. This information will be used to produce a management plan maintaining ecosystem integrity and sustainable use of resources. Such a plan is critical to both the long-term food security of the local residents and long-term viability of the species. The dissertation assesses the viability of African wild ass on the Messir Plateau, determines their spatial and dietary overlap with livestock, determines the drinking behaviour and distances travelled in different seasons between lactating and non-lactating females, and makes management recommendations based on the study results. A second PhD looks at habitat overlap of the species with livestock in the Afar region, Ethiopia. The results will produce remedial conservation strategies for wildlife managers on the conservation of African wild ass and other wildlife in the area.

In summer 2019 Kenya experienced a very extensive drought and this required intervention in the form of supplementary hay feeding to prevent Grevy's zebra populations from losing body condition and potentially their foals from this year. Marwell Wildlife was able to respond swiftly and extensively through EEP funding. In late October the rains had begun, and enough natural forage was available for the animals. The next survey will show if this support was successful.

The Grevy's Zebra Conservation and Research Conference was held at Kenya Wildlife Service in Nairobi in June. Guided by the Recovery and Action Plan for Grevy's Zebra 2017-2026, the conference not only brought together conservation stakeholders, but also provided an

interdisciplinary platform for infrastructure developers, conservation policy makers, community conservancy managers, practitioners and educators to present and discuss the most recent innovations, trends and concerns as well as practical challenges, encounters and solutions adopted in the field of Grevy's zebra conservation.

The KULANSTEP project is ongoing despite a new translocation of kulan failing in 2018 due to weather conditions in Kazakhstan. Rapid assessments of wildlife in Turkmenistan showed kulans could be functionally extinct in Badkhyz Nature Reserve (Kaczensky, P. *et al.*, 2019).

In June 2019, another transport of Przewalski's horses was organised by Prague Zoo, within the long-term project "Return of the wild horses". In total, 30 horses were already provided by EEP institutions and transferred to the Great Gobi B SPA in western Mongolia. Thanks to this effort, the local free-roaming population is doing well and had over 260 specimens at year end. The greatest success was achieved when the Mongolian Parliament agreed to double



African wild ass (*Equus africanus somalicus*) foal at Wilhelma Zoo
© Jana Müller

the size of the Great Gobi B Strictly Protected Area in May 2019.

The reintroduced population in Hustai Nuuru National Park near Ulanbaatar counts 380 horses. The third of the Mongolian reintroduction sites at Khomiin Tal had 89 horses at the end of the year.

It was recently discovered that a living population of maneless zebra still exists in the Pian Upe region of Uganda where all original imports came from. Until recently the only living fragment was thought to be the population of a few hundred zebras in Kidepo Valley, Uganda. But now it seems there may be more (Melichar *pers comm*).

A recent Danish genetic study of the plains zebras shows that the maneless zebras are one of, if not the most distinct of all plains zebra (Pedersen *et al.* 2018).

ADDITIONAL COMMENTS

Kerekes, V. *et al.* (2019). *Analysis of habitat use, activity, and body condition scores of Przewalski's horses in Hortobágy National Park, Hungary*. *Nature Conservation Research* 4: 31-40.

Langenhorst, T., Mate, L. and Naanyu, E. (2019). *Grevy's zebra conservation in Kenya 2019*. Report and funding proposal prepared for supporters and members of the Grevy's zebra EEP conservation projects. Marwell Wildlife. A complete list of 2019 publications can be found on the Equid TAG page on the Member Area.

RHINOCEROS

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

TAG Vice Chair: Lars Versteegen (Beekse Bergen Safari Park, 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 populations in human care are healthy, self-sustaining and genetically viable and are capable of being an effective tool in support of rhino conservation in the wild.

In 2019 the TAG met at the EAZA Annual Conference. During two sessions, various updates on *ex situ* and *in situ* activities such as the reintroduction of black rhinoceroses (*Diceros bicornis michaeli*) to Rwanda, the engagement

of In Africa (Rwanda) and the Sumatran Rhino Alliance (Indonesia) were presented.

POPULATION MANAGEMENT PROGRAMME DEVELOPMENTS

In 2019, the Black rhinoceros EEP had 2.0 births, 2.0 deaths and transferred 7.4 animals. It contained 36.52 (88) animals in 24 institutions at the end of the year.

As stated above, a great collaborative project took place in 2019 with five black rhinos coming from Dvůr Králové Zoo (Czech Republic), Ree Park Ebeltoft (Denmark) and Flamingo Land (UK), being introduced to Akagera National Park in Rwanda. The animals were moved to the northern part of the Akagera NP and will, in the years to come, join 18 black rhinos that were moved in 2017 from South Africa to the southern part of Akagera NP. The animals are closely monitored. The information gained by this reintroduction will help to optimise future initiatives.

The EEP for Greater one-horned rhinoceros (*Rhinoceros unicornis*) had 0.4 births, 2.1 deaths and transferred 4.5 animals in 2019. It contained 39.42 (81) animals in 32 institutions at the end of the year.

Cooperation was established with Qing Yuan Ex situ Conservation Base of World Endangered Wild Plants and Animals (China) and they have been a new EEP participant since February 2019.

Europa Dierenrijk, Mierlo Zoo (the Netherlands) joined this EEP in 2019 while Tierpark Berlin (Germany) was lost as holder.

It is increasingly difficult to find new holders, as for more than one year not a single new holder could be recruited. As far as the genetics is concerned, it is important to continue increasing the representation of wild-caught animals and underrepresented blood lines. Three potential founders have still not bred successfully and one of them, the female at Berlin Zoo (Germany), is probably lost for breeding because of leiomyomas and cysts in the reproductive tract. The same applies to the old females at Singapore Zoo (Singapore). Closer cooperation and intensified exchange of animals between EEP and SSP is important to improve the founder base.

The EEP for White rhinoceros (*Ceratotherium simum*) had 6.5 births, 6.5 deaths. It covered 144.193 (337) animals in 80 institutions at the end of 2019. During the year, 13 animals were transferred between the participants showing the continuous close cooperation within this EEP. Three new holders joined the EEP (Port Lympne Safari Park, UK;

The black rhinoceroses (*Diceros bicornis michaeli*) on their way to Akagera
 © Scott Ramsay



Rome Zoo, Italy; and Zurich Zoo, Switzerland).

The initiatives of the EEP, in regard to the historical lack of breeding in this species are now really showing results with more and more animals breeding. Up to 47% of the female rhinos are now breeding, and this percentage is rising with a large majority of younger females starting to breed without any problems. With the number of births rising the population has become sustainable.

This also implies the increased need for additional separation/holding facilities for animals which cannot be

held in the group any longer. Especially older males, no longer needed for breeding, can be a potential future problem. Holders are stimulated to be creative to be able to house surplus rhinoceros in other hoofstock paddocks since they are easy to mix with other species.

ACHIEVEMENTS DURING THE YEAR

A major aim is to strengthen continuously forces with *in situ* partners to tackle the ongoing poaching problems. The TAG works continuously in close cooperation with reliable partners such as Save the Rhino International (SRI, UK), International Rhino Foundation (IRF, USA) as well as the IUCN SSC SGs for African and for Asian rhinos.

The successful reintroduction project mentioned above was a collaboration between EAZA, African Parks Board, Rwanda Development Board, Akagera Management Company, and the IUCN SSC African Rhino SG, through the Black rhinoceros EEP. The difficult transport to Rwanda was carefully prepared and carried out by Dvůr Králové Zoo and included experts from Africa.

CONSERVATION AND RESEARCH

Many participants are involved in black and in white rhinoceros conservation projects, especially through the large conservation organisations SRI and IRF.

Despite huge efforts to optimise breeding success in



Reintroduced black rhinoceroses (*Diceros bicornis michaeli*) in Rwanda © Drew Bantlin

Africa, poaching still remains an ongoing threat. According to information from Save the Rhino (www.savetherhino.org/rhino.info/poaching-stats) the number of African rhinos killed by poachers in 2019 in South Africa was 594. This is a drop in numbers (769 rhinos were poached in 2017). Unfortunately, this positive decrease does not mean rhinos are now thriving. The long-term impact of the poaching crisis is taking its toll, as well as the prolonged drought affecting food and water resources. In 2019, figures continued to decrease for the fifth year in a row.

Currently there are:

- 17,212 - 18,915 white rhinos and 5,366 – 5,627 black rhinos in Africa
- 3,588 greater one-horned rhinos, 72 Java rhinos and less than 80 Sumatran rhinos in Asia

According to the EAZA Conservation Database, rhinoceros rank number two for receiving conservation support over approximately the last 25 years. All projects still need ongoing support and it is highly important to consider donating to above mentioned NGOs to help save the five rhinoceros species.

TAPIR AND SUIFORM

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

TAG Vice Chair: Jörg Beckmann (Nuremberg Zoo, Nuremberg, 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 has very close links to the IUCN SSC Tapir SG, Hippo SG and Wild Pig SG.

In January, Jochen Reiter (Düsseldorf, Germany) stepped down as TAG Vice Chair due to a change of institution in 2018. After advertisement in EAZA eNews, we were lucky to be able to select the newly appointed (but long experienced) EEP Coordinator for Babirusa (*Babirusa babirusa*), Jörg Beckmann (Nuremberg Zoo, Germany), as his successor. Jörg Beckmann took over in February 2019. A huge thank you to Jochen for his support to the TAG so far, and a warm thank you to Jörg for taking over this important job.

POPULATION MANAGEMENT PROGRAMME DEVELOPMENTS

During 2019 the EEP for Malayan tapir (*Tapirus indicus*) was re-evaluated as a follow-up to the previous evaluation in 2015. Based on the re-evaluation, a number of recommendations for improvement of the EEP were identified, and they will be implemented in the coming year. Communication was highlighted as a very important issue and will be one of the focal areas for the next EEP Coordinator.

The addition of Singapore Zoo's and Taipei Zoo's animals to the EEP for Pygmy hippopotamus (*Choeropsis liberiensis*) has led to marked increases in both the number of founders and in the size of the population. Regrettably, however, the exchange of animals between European and non-European EAZA Members in Turkey and Asia seems to be extremely difficult.

In Europe, only two pygmy hippos were born in 2019, all other births occurred in EEP members outside Europe!

ACHIEVEMENTS DURING THE YEAR

During the EAZA Annual Conference in Valencia (Spain), the TAG met twice with a first session focusing on tapirs and hippos, and a second on pigs and peccaries. During the first session we also went through the preparations for the RCP process, to take place in 2020. The list of species was identified, and the process was introduced by Merel Zimmermann (EEO). In addition, we received updates on the *in situ* conservation programmes for selected species, and one of our Vet advisors, Dorothée Ordonneau (CERZA, France), gave a presentation on contraception in tapirs. During the second session Gordon Hunt (Jersey Zoo, UK) gave a presentation on health issues in the Visayan warty



Mother and calf Malayan tapirs (*Tapirus indicus*) in Malaysia © Carl Traeholt

Pygmy Hippo Conservation workshop © Jan Pluháček


pig (*Sus cebifrons*), and Johanna Rode-Margono (Chester Zoo, UK) and Carl Traeholt (Copenhagen Zoo, Denmark) gave presentations on the Javan warty pig (*Sus verrucosus*) programme in Indonesia.

COLLABORATIONS

The TAG has a year-long collaboration with the following IUCN SSC SGs: Tapir SG, Hippo SG, and Wild pig SG. All these collaborations were continued and developed further during 2019.

In addition, all EEPs have close links to *in situ* projects for their respective species, and the Babirusa EEP is heavily involved in the globally supported Babirusa GSMP.

CONSERVATION AND RESEARCH

The conservation and research activities listed in the EAZA TAG Annual Reports 2018 were continued in 2019 and were partly reported on during the annual meeting. The projects were:

- A three-year conservation project on the Javan warty pig in Baluran National Park, Indonesia, financed by Fondation Segré (Switzerland) and supported by Copenhagen Zoo and Chester Zoo.
- *In situ* and *ex situ* activities for the babirusa in the GSMPs for Banteng, Anoa and Babirusa (Opel Zoo, Germany)
- *In situ* and *ex situ* conservation activities for the Chacoan peccary (*Catagonus wagneri*) in Paraguay supported by the EEP participants
- Visayan warty pig *ex situ* conservation activities of the

- Talarak Foundation, who coordinates the population management programme in the Philippines
- Flora and Fauna International in Wongezi and ZSL in Sapo National Park, Liberia are investigating pygmy hippos' status and distribution as well as capacity building, awareness building and law enforcement training
- Royal Society for the Protection of Birds/Birdlife International in Gola Forests, Sierra Leone are developing a Community Youth Conservation Volunteer programme focusing on pygmy hippo conservation within the communities living around the National Park
- The Swiss Scientific Research Centre (CSRS) is looking into the assessment of the viability of the pygmy hippo and its habitat in the Taï National Park, Ivory Coast

In addition, a Pygmy Hippopotamus Action Plan Regional Workshop was conducted on 2-4 July 2019 in Monrovia (Liberia). This action planning process followed the Open Standards Conservation Action Plan approach and brought together stakeholders in the conservation of the species from across its geographic range. Distribution in each country is well documented, but no population estimates exist. Though, it is agreed that the Taï NP in Ivory Coast has the largest population.

In 2019 two new three-year long tapir projects were launched, again supported by Fondation Segré:

- Latin American Tapir Conservation Programme, run by the IUCN SSC Tapir SG
- Meta-population Management of Malayan Tapir in its Distribution Range, run by Copenhagen Zoo

ADDITIONAL COMMENTS

The publications are published in the respective studbooks, but the following need to be highlighted:

Mahathir, M. *et al.* (2019). *Habitat utilization of a translocated Malayan tapir in Senaling Inas forest reserve, Negeri Sembilan*. Journal of Sustainability Science and Management 14(4): 65-70

Przybylska, L. (2019). *European Studbook for Visayan warty pig (Sus cebifrons negrinus)*. Wrocław Zoo (Poland)

Root-Bernstein, M. *et al.* (2019). *Context-specific tool use by Sus cebifrons*. Mammalian Biology 98: 102-110

Stears, K. *et al.* (2019). *Spatial ecology of male hippopotamus in a changing watershed*. Scientific Reports 9

CATTLE AND CAMELID

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

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

INTRODUCTION

Progress has continued this year in a variety of areas including the RCP, all of the population management programmes, conservation and research initiatives as well as continued cooperation and assistance with both *in situ* and *ex situ* colleagues around the world, including the IUCN SSC Asian Wild Cattle Specialist Group (AWCSG) and IUCN SSC Saola Working Group (SWG).

POPULATION MANAGEMENT PROGRAMME DEVELOPMENTS

Marcel Alaze (Allwetterzoo Münster, Germany) was officially appointed as the new EEP Coordinator for Lowland anoa (*Bubalus depressicornis*).

An African buffalo (*Syncerus caffer*) Species Committee was formed.

Preparations were put in place for a LTMP for African buffalo, which could help develop closer links with the American population.

A LTMP was initiated to help with phasing out the gaur (*Bos gaurus*).

EEP evaluations were completed for all programmes except Lowland anoa and European bison (*Bison bonasus*) which will both be finalised in 2020.

Banteng (*Bos javanicus*) and Anoa GSMP Husbandry Guidelines have been written and translated for our colleagues from the Indonesian Zoo and Aquarium Association (PKBSI).

ACHIEVEMENTS DURING THE YEAR

The TAG new RCP was approved and published in January 2019.

The European bison LTMP was finalised in July and distributed in September.

The IUCN SWG carried out a site visit to Bach Ma National Park (Vietnam) in November, as a precursor for building work to start on the conservation breeding centre in early 2020.

The GSMP MoU for 2019-2024 was signed. This involved PKBSI, EAZA, AZA, IUCN SSC, IUCN SSC AWCSG and IUCN SSC Wild Pig SG.

COLLABORATIONS

A PKBSI-GSMP Proposal of Workplan for 2020 was put together via a collaboration between PKBSI and multiple zoos and organisations from Europe and North America. The collaboration is covered by an MoU between the Indonesian Ministry of Environment and Forestry (KSDAE) and PKBSI and an MoU between PBKSI and the partner networks of the GSMP: EAZA, AZA, IUCN Species Survival Commission, IUCN SSC AWCSG, IUCN SSC Wild Pig SG which was renewed in 2019.

The work continued with IUCN SSC SWG and the Government of Vietnam with the setting up of an



Global Species Management Plan Memorandum of Understanding (2019-2024) signing ceremony in November © PKBSI

Education materials produced as part of the Global Species Management Plans and used during Action Indonesia Day 2019 © Action Indonesia



Annamites Endangered Ungulate Conservation Centre in Bach Ma NP, Vietnam.

The TAG continued to work with IUCN SSC AWCSG, AZA, PKBSI and KSDAE with managing the GSMPs for Anoa and Banteng.

CONSERVATION AND RESEARCH

The Tamaraw (*Bubalus mindorensis*) Conservation Management and Action Plan has been completed and approved by the Philippine Government.

'Action Indonesia' day was held on 18 August in order to raise awareness of the Anoa, Banteng and Babirusa GSMPs and to raise money for their conservation.

Research on vicuña (*Lama vicugna*) bachelor groups in human care has been initiated.

A tamaraw captive breeding/translocation feasibility study plan is underway to be carried out in 2020.

An anoa morphology study (photos of anoa taken by zoos) was initiated.

ADDITIONAL COMMENTS

An article titled 'Camels, Cattle and conservation' was published about the TAG new RCP and the process involved in Zooquaria 104.

DEER

TAG Chair: Noam Werner (Jerusalem Zoo, Jerusalem, Israel)

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

INTRODUCTION

The EAZA Deer TAG is responsible for three taxonomically distinct groups: the chevrotains (mouse-deer; *Tragulidae*),

musk deer (*Moschidae*) and true deer (*Cervidae*). Following the taxonomy currently used by the IUCN SSC Red List, a total of 73 species fall under the remit of our TAG (10 *Tragulidae*; seven *Moschidae*; 56 *Cervidae*).

In 2019, the TAG mid-year meeting took place at Tierpark Berlin (Germany) with 20 participants, representing 16 different institutions and organisations from seven different countries, and was dedicated to finalising the new RCP. The most important outcome of the meeting was the RCP, but another, just as important outcome, was the involvement and contribution of colleagues from various deer-related sectors. These included the IUCN SSC Deer SG, represented by the SG's Co-Chair Susana González (Ministry of Education and Culture, Uruguay), the private sector, and representatives from the research community.

At the EAZA Annual Conference the TAG held its annual general meeting where some of the work of TAG members and the results of the mid-year meeting were presented. Overseas collaborators from the Philippines and Vietnam also presented their projects.

Other meetings included the Western Visayas Conservation Workshop (Bacolod City, the Philippines), which was attended by the TAG Chair, who shared information about deer reintroductions including from the EEP for Visayan spotted deer (*Rusa alfredi*). The IUCN SSC Leaders Conference in Abu-Dhabi (UAE) was attended by the TAG Chair as well as TAG member, Jan Pluháček (Ostrava Zoo, Czech Republic). While not a zoo-related conference, the meeting provided good opportunities to promote TAG work with colleagues from other relevant IUCN SSC SGs.

POPULATION MANAGEMENT PROGRAMME DEVELOPMENT

The most important development of the year was the completion of the new style RCP, which has already been approved by the EEP Committee.

The new plan recommends that 19 new style EEPs would be established, of which 12 will replace old style EEPs and ESBs, four will replace MON-P, and three will be brand new programmes for species that had not been managed or monitored thus far.

Among them, the new EEP for Large-antlered muntjac (*Muntiacus vuquangensis*) is unique as it will not focus on managing a captive population (as none exist), but rather on connecting EAZA zoos with conservationists and

The Visayan spotted deers (*Rusa alfredi*) at the Negros Forest Park, Bacolod (Philippines) are managed collaboratively with EEP animals for the end goal of reintroducing the species back to the wild © Noam Werner



researchers in the species' range countries of Vietnam and Lao PDR and contribute to the conservation of this Critically Endangered species in its native range.

The BPG for the tufted deer (*Elaphodus cephalophus*), developed by Janno Weerman (Rotterdam Zoo, the Netherlands) are in the final stages of review and are expected to be published soon.

During 2019 the second round of the TAG's EEP evaluations was completed with the evaluation of the Mesopotamian fallow deer EEP.

Despite the potential to import hoofstock species from third countries permitted via EU Regulation (780/2013), in reality such imports are still very difficult and are not a realistic option for increasing the genetic diversity of programmes (*i.e.* adding founders). Therefore, the Deer TAG has been considering the alternative of importing semen of potential founders and performing artificial insemination. A process that was conducted by Ostrava Zoo, which imported Siberian wapiti (*Cervus canadensis sibiricus*) semen from Kazan Zoo in Russia, proved that such imports are feasible and that artificial insemination could

be an alternative for imports of live animals.

Another piece of EU legislation, the Invasive Alien Species Regulation (1143/2014), is also challenging.

The Chinese muntjac (*Muntiacus reevesi*) has been included in the List of Invasive Alien Species of Union Concern, which means that its population in human care should be phased out. However, the species is now listed as Vulnerable by conservation authorities in its native China, which resulted in a recent EEP recommendation by the TAG. The TAG has been collaborating with the EAZA EU Policy team in an attempt to gain support for an exemption from the Regulation for EAZA zoos, which will allow the TAG to manage the species.

EU Member States can also decide to include more species in National Lists of Invasive Alien Species, which already happened when Poland decided to include sika deer (*Cervus nippon*) in its List. This means that Polish zoos will need to phase out sika deer, including the Indochinese sika deer (*C. n. Pseudaxis*), which is extinct in the wild and is managed as an EEP. The TAG is tracking such national-level decisions and provides assistance as necessary.

Bactrian deers (*Cervus hanglu bactrianus*) could easily replace other large cervid species that are not recommended for keeping by the new Deer TAG RCP © Noam Werner



Another potentially emerging challenge is the identification of Chronic Wasting Disease (CWD) in Europe. In North-America CWD is prevalent and hugely restricts the transfer of cervids to the point that some AZA programmes are dying out and some unmanaged species are also being phased out. In Europe, CWD has only been reported from very few animals, all wild or semi-domesticated, and only in Scandinavia. Nevertheless, the TAG is monitoring the situation and will prepare for various possible actions by the EU or Member States.

COLLABORATIONS, CONSERVATION AND RESEARCH

Cooperation with the IUCN SSC Deer Specialist Group (DSG) is ongoing. During 2019 the TAG Chair was also appointed as a Co-Chair of the DSG. Other current and past TAG members are also DSG members, including Christian Kern (Tierpark Berlin, Germany), Jan Pluháček, Matt Hartley (Chester Zoo, UK), Roland Wirth (Zoological Society for the Conservation of Species and Populations - ZGAP, Germany) and Jens-Ove Heckel (Landau Zoo, Germany).

Several TAG members, through the respective programmes they run or through their institutions, have been involved in long-term *in situ* deer conservation projects in range countries, such as the Visayan spotted deer in the Philippines, forest reindeer (*Rangifer tarandus fennicus*) in Finland, and Mesopotamian fallow deer (*Dama mesopotamica*) in Israel, amongst others.

The TAG was also invited by the Saola Working Group, together with other EAZA TAGs, to join the efforts to construct a breeding facility in Vietnam for Annamite endemic species, including the large-antlered muntjac.

ANTELOPE AND GIRAFFID

TAG Chair: Sander Hofman (Antwerp and Planckendael Zoo, Antwerp, Belgium)

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

INTRODUCTION

The EAZA Antelope and Giraffid TAG (AGTAG) is a large and complex TAG, representing approximately 40 species (and about 80 taxa) held in EAZA 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 either by individual TAG members or by the subgroup leaders within the TAG.

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

POPULATION MANAGEMENT PROGRAMME DEVELOPMENTS

After a few years with many changes to programmes, evaluations and a light version of a AGTAG RCP, 2019 was a year of working on the functionality of the TAG.

During the EAZA Annual Conference, the TAG leadership had a meeting, focusing on goals and future direction of the TAG. The division of tasks of the TAG members became clearer, and the expectations of individual EEPs and how to get there was outlined.

The transition of studbooks to ZIMS for Studbooks is almost done. It will be a great step forward in keeping studbooks up to date.

The Lesser kudu ESB was the first species in the TAG to produce BPG.

ACHIEVEMENTS DURING THE YEAR

In May, the TAG met for its mid-year meeting kindly hosted by Tierpark Berlin (Germany). It had a very good and international turnout, as it was organised in conjunction with the International Okapi Meeting. At the International Okapi Meeting, *in situ* conservationists and representatives from the global *ex situ* community sat together to

Participants of the AGTAG mid-year meeting in Berlin © Tierpark Berlin; inset: New logo for the TAG © AGTAG



determine the strategy for okapi in zoos for the next 8-year period. A major outcome was that with the current threats to the species in the wild, the International Studbook population is now considered a serious sustainable back-up population, making collaboration on a global level of crucial relevance. All okapi outside of the Democratic Republic of Congo are in the studbook.

Most of the audience of the okapi meeting also attended the AGTAG meeting, allowing some fruitful discussions, as there were views from not only a geographically diverse group, but also people with knowledge from many different TAGs. After a few years of focus on the RCP, the meeting had a broad focus, with presentations on nutrition, genetics and giraffe conservation. Especially the subjects of possible hybridisation in Rothschild's giraffes (*Giraffa camelopardalis rothschildi*) and possible bushbuck (*Tragelaphus sylvaticus*) genes in European nyalas (*Tragelaphus angasii*) created a lot of discussion. As we dig into studbooks in greater detail, with for instance the help of fast-developing genetic research techniques, we face new challenges.

The TAG met again for the EAZA Annual Conference for

two 2-hour sessions. Both were well attended. The first session was mostly reporting from subgroups, whereas the second session focused on husbandry of gazelles and conservation projects, with nice updates on Dorcas gazelle (*Gazella dorcas*) reintroduction and Cuvier's gazelle (*Gazella cuvieri*) reintroduction in Tunisia.

At the end of 2019 30 Cuvier's gazelles were released in Jebel Serj National Park. All of them were born during the last three breeding seasons, and are "children, grandchildren and great-grandchildren" of individuals brought from Spanish EEP institutions to a breeding facility of this National Park in 2016. A wonderful result especially for the colleagues of the Arid Zone Experimental Station (CSIC Almeria, Spain), that manage the EEP and have been involved in the reintroduction project for several years.

COLLABORATIONS

The TAG has excellent cooperation with the *in situ* community. A co-Chair of the IUCN SSC Giraffe and Okapi SG and a co-Chair of the IUCN SSC Antelope SG are both Conservation advisors to the TAG. As both giraffids are

threatened as well as almost a third of the antelope taxa, it is of utmost importance to prioritise the efforts of the TAG: not only in our choices of taxa to breed within EAZA, but also in using our *ex situ* management skills in range states, research, genetics, conservation education, financial support of field projects, etc. In other words, playing our part in the One Plan Approach.

The next two years will be crucial for the TAG when we enter the EAZA RCP process.

CONSERVATION AND RESEARCH

The AGTAG has a Research and a Conservation coordinator. They keep the TAG up to date on relevant research and conservation issues. At the end of 2019, EAZA Members reported about 36 active conservation projects carried out in Africa and the Arabian Peninsula. We hope to be able to further stimulate zoos' involvement in such conservation and research projects in the years to come.

CAPRINAE

TAG Chair: Pascal Damois (Auvergne Zoological Park, Ardes, France)

TAG Vice Chair: Jan Robovský (Liberec Zoo, Liberec, Czech Republic)

INTRODUCTION

The EAZA Caprinae TAG spent 2019 preparing for the new RCP and launching new projects including husbandry guidelines, education guidelines, capricards and a research project on assisted reproduction. It was a busy year! We connected throughout the year with our counterparts of the AZA Caprinae TAG as well as with the IUCN Caprinae SG. Last but not least, we would like to thank Merel Zimmermann from the EEO (the Netherlands) for her constant help and support.

POPULATION MANAGEMENT PROGRAMME DEVELOPMENTS

The main subject for the TAG was to get ready for the new RCP workshop scheduled in Amsterdam at the beginning of February 2020. We take this opportunity to thank all the institutions and their representatives who helped us monitor the situation for many caprine species: Nick Karpov (Moscow Zoo, Russia) for Siberian ibex (*Capra sibirica*), Erich Kočner and Mirka Friedman from Košice Zoo (Slovakia) for chamois species (*Rupicapra spp.*), Charlotte Desbois (Auvergne Zoological Park, France) for Alpine

ibex (*Capra ibex*), Dennis Müller (Halle Zoo, Germany) and Simone Haderthauer (Vienna Zoo, Austria) for Barbary sheep (*Ammotragus lervia*) of unknown origins, Pavel Brandl (Prague Zoo, Czech Republic) for Himalayan tahr (*Hemitragus jemlahicus*), Tõnis Tasane (Tallinn Zoo, Estonia) for urial (*Ovis orientalis*) and argali (*Ovis ammon*), Jitka Vokurková (Olomouc Zoo, Czech Republic) for wild goats, and of course, the nine Coordinators.

ACHIEVEMENTS DURING THE YEAR

2019 started with our mid-year meeting which was held in France at Auvergne Zoological Park. During three very fruitful days, we launched many projects:

- Marco Penello (Valcorba Zoo, Italy) presented his work on the international database for mixed exhibits with caprines. He later presented this at the EAZA Annual Conference too
- Marco Penello and Nina Trontti (Helsinki Zoo, Finland) are in charge of creating the Education Guidelines for caprines and we hope they will be able to present their work at the 2020 EAZA Annual Conference in Leipzig (Germany)
- We will develop BPG for all caprine species recommended in the new RCP in one document compiling all important information
- Yann Locatelli (La Haute-Touche Zoo, France) told us more about his research project on artificial insemination in markhors (*Capra falconeri*). Such projects have an important potential to bring further genetic diversity into our *ex situ* populations. He has the full support from the TAG and we hope that Members will consider financing his research in the future as clear links with *in situ* conservation projects are being created
- Finally, we validated the creation of the concept of capricards, a one-page document where you can find all essential information to decide which of our emblematic species of caprines you wish to hold. Nina Trontti is in charge of these documents and we decided that the first capricards would be about takins, markhors and urials
- During this meeting, we also appointed Marco Penello, Dennis Müller, Jan Robovský (Liberec Zoo, Czech Republic) and Pascal Damois (Auvergne Zoological Park, France) as the leading members for the new RCP Working Group

The Caprinae TAG met again during the EAZA Annual Conference where preparations for the new RCP continued and the advancements of the different projects were

Chinese ghoral (*Naemorhedus caudatus*) © Marie Demoulin



discussed.

During 2019, the TAG, thanks to Tony Souvignet (Mulhouse Zoo, France), kept our Facebook page “EAZA Caprinae TAG” very much active and it is now followed by 410 people.

COLLABORATIONS

The working group for Barbary sheep of unknown origin led by Dennis Müller and Simone Haderthauer in collaboration with Spanish and German experts for this species from outside the zoo community is still active.

We were in touch all year long with Gil Myers (Smithsonian’s National Zoo, USA), Chair of the AZA Caprinae TAG, as they were going through the process of their own new RCP.

Finally, we have been keeping in close contact with Sandro Lovari (Sienna University, Italy), Chair of IUCN Caprinae SG and Stefan Michel (Zoological Society for the Conservation of Species and Populations - ZGAP, Germany) who is part of IUCN Commission on Environmental, Economic and Social Policy, IUCN SSC Sustainable Use and Livelihoods Specialist Group and SSC Caprinae SG.

Stefan will participate in the new RCP workshop at the beginning of February 2020 and will provide key data on wild populations during the RCP process. This relationship is clearly crucial for the TAG.

CONSERVATION AND RESEARCH

The working group with our AZA colleagues focussing on caprine assisted reproduction is also active. Yann Locatelli and Budhan Pukazhenth (Smithsonian’s National Zoo, USA) are leading this group.

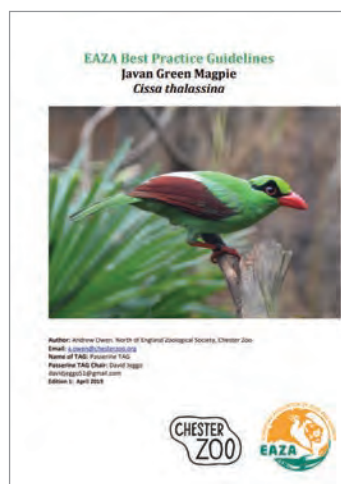
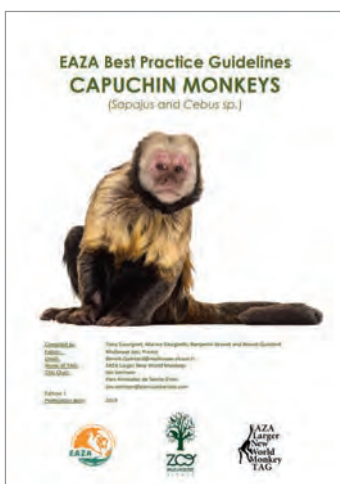
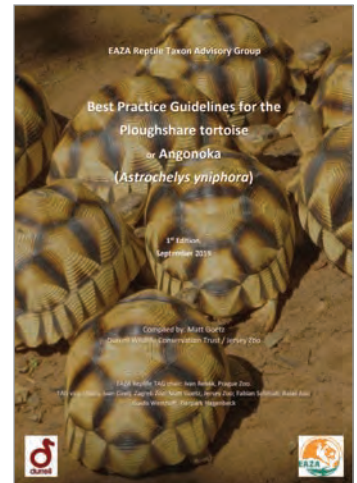
ADDITIONAL COMMENTS

The EAZA Caprinae TAG will be represented at the next joint TAG meeting in Palm Springs, USA thanks to Auvergne Zoological Park and a grant from the World Association of Zoos and Aquariums. Many thanks to both institutions!

10 Best Practice Guidelines, enabled in part by funding from an EU LIFE NGO operating grant and thanks to the efforts of Programme Coordinators and TAG members, were published on the EAZA website in 2019

Polynesian tree snails • Mountain chicken frog • Typhlonectid caecilians • Egyptian tortoise • Ploughshare tortoise • Javan green magpie • Rufous-fronted laughingthrush • Capuchin monkeys • Marine Mammal Demonstration and Public Interaction Guidelines • Demonstration Guidelines for Anteaters used in public demonstrations

Visit www.eaza.net/conservation/programmes/ for a complete overview of the available EAZA Best Practice Guidelines.





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