



TAG reports 2013-14

EUROPEAN ASSOCIATION OF ZOOS AND AQUARIA

INTRODUCTION

EAZA's Taxon Advisory Groups (TAG) range from Terrestrial Invertebrates to Tapirs and Hippos, from Penguins to Felids and many more. TAGs define the *ex situ* management level a species requires, which might be low, medium or high. Within the European Association of Zoos and Aquaria (EAZA) these levels are defined as Monitor Programmes, European Studbooks (ESB) or European Endangered Species Programmes (EEP). At the end of 2014 EAZA had 39 TAGs, 195 EEPs and 193 ESBs.

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

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

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

In 2014, for the first time, a Global Joint TAG Chairs meeting was held at Alphen aan de Rijn, The Netherlands, which brought together TAG Chairs from all of the major regional associations; this landmark event points towards greater cooperation among TAGs worldwide in service of the *ex situ* conservation of species.

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

EAZA extends its thanks all the Chairs, members and breeding programme coordinators for their hard work over the two years of 2013 and 2014.

Cover image: Zebra sharks © Max Janse

TERRESTRIAL INVERTEBRATE

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

TAG Vice Chair: Tamás Papp (Budapest Zoo, Budapest, Hungary)

TAG meetings 2013/2014

The Terrestrial Invertebrate TAG (hereafter called TITAG) held two meetings during the period of 2013/2014; one during the 2013 EAZA Annual Conference in Edinburgh which focussed on reporting on recent EEP activities since Innsbruck, followed by another during the 2014 EAZA Annual Conference at Budapest which concentrated on developments with TAG structure and advancement of new projects and conservation strategies. After ten years in tenure, Warren Spencer announced he was stepping down as Chair in June 2013 to allow someone new to take over and help TITAG to reach the next step in its potential. This role was filled by Mark Bushell (Bristol) as Chair and Tamás Papp (Budapest) as Vice Chair who will look to carry on the great work done by Warren and Paul Pearce-Kelly over the last few years. The role of TITAG vet advisor has been filled by Mark Eichelmann. A symposium is planned for 2015 to be held at Artis Royal Zoo, in Amsterdam.

Programme coordination and evaluation 2013/2014

The two EEPs currently sitting under TITAG are planned to be evaluated fully in early 2015. A new coordinator for the RCP was appointed and development continued throughout the year following feedback received in 2011 from EAZA Executive Office. Version 1.4 will hopefully be published mid-2015 with the hope of updating it on an annual basis. As part of the updates, two new monitor programmes have been created; one for Mexican red-knee spiders and another for Indian and Sri Lankan tiger spiders, with the possibility of developing a key species of the latter into an ESB programme.

TITAG continues to strengthen links with other relevant organisations with members being part of the International Union for Conservation of Nature (IUCN) Species Survival Commission (SSC) Grasshopper Specialist Group (GSG) and Spider and Scorpion Specialist Group (SSSG). The Crau steppe grasshopper (*Prionotropis hystrix rhodanica*) was identified as being of conservation concern by the GSG. A meeting was held in St. Martin-de-Crau (France) during May 2014 to



DESERTAS WOLF SPIDER © PEDRO CARDOSO

discuss the conservation strategy of this critically endangered species, including *in situ* habitat work and *ex situ* initiatives currently being led by Thoiry Zoo, with plans to have a captive population by mid-2015.

The Desertas wolf spider (*Hogna ingens*) was highlighted by the SSSG and plans are currently underway for the development of a conservation strategy with hopes to have a solid document in place by December 2015.

Development continues on the creation of an EEP for the Lord Howe Island stick insect (*Dryococelus australis*) which will also be linked to the forthcoming Species Survival Plan (SSP) in the Association of Zoos and Aquariums (AZA) region of the United States of America. We hope that a population of this fantastic species will be established in at least two European collections in late 2015.

The 2013 Partula snail EEP studbook was produced and circulated; overall the captive populations of Polynesian tree snails continue to generally do well with overall numbers remaining stable, although this hides changes within individual taxa. A meeting was held on 1 March 2013 at ZSL London for the Partulid Global Species Management Programme. This meeting brought together participants from nine zoological collections to discuss developments, including the commencement of the reintroduction phase of the programme.

As part of the overall action plan for the partulid snails, a reintroduction and field study in Tahiti was arranged in October 2013 for two species of Partula snail (*P. affinis* and *P. hyalina*) from EEP holder collections in the United Kingdom and France, supplemented by a third species of snail (*P. nodosa*) being held as part of the AZA SSP. These were accompanied to Tahiti by three members of staff from Bristol, Edinburgh and ZSL London. However, due to unforeseen circumstances, the proposed release did not

go ahead. Through perseverance, a more solid in-region plan and protocol was established between the resident government and the Partula consortium that will smooth the way for a future release attempt in the next year or so. Several sites in Tahiti were also surveyed as part of the field-trip and populations recorded and observations made on how this critically endangered group of snails is faring in the face of possible extinction.

A 2013 summary of the Frigate beetle EEP was produced and circulated. The population is in decline at most institutions, with only one collection showing an increase. A decision needs to be made regarding the future of this programme as an EEP or ESB and discussions will continue until a suitable solution or plan has been realised. We are still waiting for an update on the food trials relating to larval development, but a study on diet work at Manchester University has become available. This showed some interesting results of the effects of differing wood-fungus substrates on larval growth and could potentially be applied to other saproxylic species of conservation concern.

Proceedings and documents from the meetings as well as the RCP can be found on the TAG's web space on the EAZA website's member area.

FISH AND AQUATIC INVERTEBRATE

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

Vice Chair (Elasmobranchs): Max Janse (Burgers Zoo, Arnhem, The Netherlands)

Vice Chair (Freshwater Teleosts): Anton Weissenbacher (Schönbrunner Tiergarten, Vienna, Austria)

In 2013, the TAG nominated Max Janse to act as Vice Chair with responsibility for Elasmobranchs (Sharks and Rays). Max's nomination coincided with a two day workshop at ZSL focused on elasmobranchs with the main purpose being to develop the Regional Collection Plan (RCP) for sharks and rays. The successful workshop was attended by 25 participants from all over Europe and included a mix of presentations and small group discussions. With many aquariums new to the process of developing regional collection plans, the workshop organisers spent time introducing the guidelines and decision tree process for sorting species under consideration for the RCP. In small groups, participants then reviewed species and

discussed the level of management each should have.

As a result of the workshop, the first RCP has been developed for elasmobranchs; it includes 42 species. A key discussion point during the workshop was how best to manage aquatic species' populations. The management options of ESB, Mon – T and Mon – P were reviewed. Including the newly developed ESBs for Black-tip reef sharks (*Carcharhinus melanopterus*) and sawfish (*P. zijsron*, *P. microdon*), as well as the two European seahorse species (*H. guttulatus*, *H. hippocampus*), only ten ESBs exist for fish. In the workshop, only a few additional species were considered suitable for ESB management at this time, with the remaining species being included as monitoring programmes (Mon-P level). This strategy should allow new coordinators and new participants within the programme the chance to learn the techniques required for population management and put them into practice before moving towards more complicated issues associated with ESBs for fish. In the end of 2013, nine ESB were running on elasmobranchs. The coordinator of the Zebra shark ESB changed from Max Janse to Silvia Lavorano, Genova Aquarium. For 22 MON-P programmes, coordinators were found and will realise the program in 2014. Applications will be made for two new elasmobranch species ESBs.

At the 2013 Fish and Aquatic Invertebrate TAG meetings, both in the EAZA meeting in Edinburgh and at the European Union of Aquarium Curator's (EUAC) meeting in Billund, Denmark, discussions took place regarding the effectiveness of ESBs for fishes. The two ESB managers for European seahorses expressed concern that this method of management is not necessarily the right one for highly fecund teleosts, such as seahorses. Sharks and rays are managed in ways more similar to mammals with individuals identified within a population. When the two European seahorse species ESBs were created, they formed a test case for aquarium managers – could we manage potentially thousands of seahorses that did not have individual IDs? After four years of experience, the feedback from both seahorse coordinators is that short-lived species that produce thousands of offspring are probably best managed as a monitoring programme.

CASE STUDY – Sorting seahorses

In 2009, both European seahorses (Short-snouted and Long-snouted) were proposed as ESBs. Subsequently the two ESB managers have been trying to make them work. When seahorses breed, they have large numbers of young – sometimes a single brood can be over 1,000 strong. Although most of these young don't survive, keeping track of mortalities



FISH AND AQUATIC INVERTEBRATE TAG (FAITAG) RCP WORKSHOP © JOERG FREYHOF



CHARCO AZUL PUFFFISH © DAVID CURNICK

as well as reproduction can be overwhelming. In order to solve these issues, a trial system of managing seahorses as pairs was employed. Sexually dimorphic seahorses were kept in isolated pairs which allowed sire and dam to be identified. Offspring were reared and sorted into three groups: next generation breeders, a research population and an education population. Only the first group was considered part of the managed population. The complications arise when there are thousands of offspring from one pair and the other managed pairs fail to reproduce viable young. How to avoid saturating the gene pool? The next problem arises with mixing – what is the best way to do it? Females from one pair could be mixed with males from another pair. But what happens when an animal that appears to be a female suddenly develops a male's brood pouch? Another issue is when animals fail to pair or die before reproducing. Seahorses are short lived – a six year old fish is old. That doesn't give much time for producing the next generation. Finally, record-keeping presents issues. How do you record thousands of fry produced every two weeks? How many are reared for the next generation? Feeding seahorses five times per day and changing the diet through different development stages is taxing on staff resources. Unfortunately many aquariums cannot afford to allocate the resources required. Although we must be able to manage these important species in our collections, until an easier system of data collection is developed, seahorses and other teleosts are maybe best managed as Monitoring programmes rather than ESBs

Freshwater Fish RCP development

Tierpark Schönbrunn in Vienna hosted the first ever European Regional Collection Planning workshop for this diverse and enormous group of animals in September 2014. The two day workshop was attended by not only public aquarium representatives and an EAZA Population biologist

but also had input from scientific research institutions, universities and several people from the hobby sector. With over 15,000 species represented in freshwater, the workshop was not designed to review all species. Instead nine families were pre-selected for review: Madagascar rainbowfishes, Australasian rainbowfishes, cichlids, blue-eyes, pupfish, two families of live-bearers, anabantoids, and the carps (including barbs, loaches and danios). These families were chosen because they are small and many are easily managed in captivity but also because each contains a significant number of threatened species.

In another departure from the normal RCP development, the Vienna workshop also chose to just focus on those species that fell under the conservation category of the RCP. With so many species under threat and the extinction crisis for freshwater fishes among the worst for any taxa, a sense of urgency is required and only through a rapid triage of family groups could the process go to the next stage of identifying coordinators. Coordinators were chosen for each of the families covered in the workshop – some of these individuals are not from the public aquarium community but are dedicated to conservation. The workshop closed with a unanimous agreement to nominate Anton Weissenbacher to act as Vice Chair of the TAG with a special responsibility for fresh water fish. Anton's nomination was later approved by the EAZA EEP Committee.

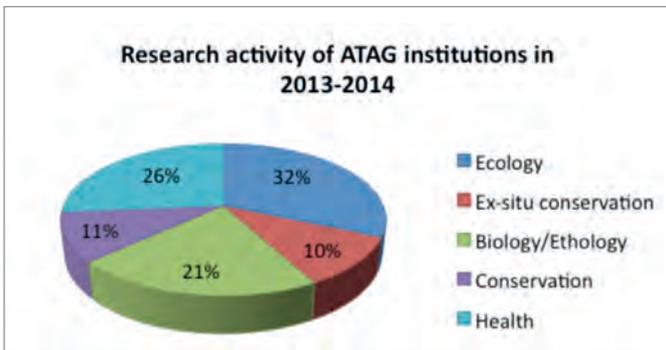


FIGURE 1: RESEARCH ACTIVITY FOCUS OF AMPHIBIAN TAG MEMBERS 2013-2014

AMPHIBIAN

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

TAG Vice Chair: Olivier Marquis (Paris Zoo, Paris, France) and Warren Spencer (Artis Royal Zoo, Amsterdam, The Netherlands)

Programme coordination 2013/2014

During this period, we were delighted to welcome Olivier Marquis to the ATAG as one of our Vice Chairs. Olivier is Curator of Reptiles, Amphibians and Invertebrates at Parc Zoologique de Paris and his wealth of experience and great knowledge will be of great benefit to our work. Ben Tapley (ZSL London Zoo) was appointed as Amphibian TAG RCP coordinator.

No changes have been made with regard to the programme species, although efforts are being made to prepare for the masterplanning for the Mountain chicken frog *Leptodactylus fallax* ESB.

Research and TAG-produced documents

To our knowledge, during the last two years we have recorded 18 projects of research on amphibians running in eight EAZA institutions leading to at least 25 publications in peer-review journals. At least 11 of them are still ongoing in 2015.

Conservation

Our conservation actions have been focused on key amphibian biodiversity areas and supported by multiple institutions and partners. Most of these projects have been partially supported by funds provided from our institutions during the 2008 EAZA Year of the Frog Campaign.

From China, we have the Giant Chinese Salamander (*Andrias davidianus*) programme led by the Zoological Society of London based at Fanjingshan National Nature Reserve (FNNR), 41,900 ha UNESCO Man and Biosphere

reserve. The activities were oriented on surveying the natural habitat and trapping for giant salamanders. They also conducted a standardised formal questionnaire survey by trained native Chinese speakers in 16 small rural communities located within the core and buffer zones around FNNR. Although unsuccessful in finding salamanders in the target area, the major outcomes were the training exercise for Chinese partners and the development of their own fieldwork protocol. The project was one of the first granted projects by the 2008 EAZA Year of the Frog Campaign.

In Europe a reintroduction and restocking programme for the common spadefoot (*Pelobates fuscus*) took place in the Netherlands carried out by local NGO RAVON in partnership with Artis Royal Zoo. In 2010, it appeared the common spadefoot could become the first amphibian to go extinct from the country. Efforts on habitat restoration and reintroductions in 2012 and 2013 made it possible to begin its recovery. Parallel to the reintroductions, a monitoring programme, including eDNA sampling, recording toad calls and tadpole trapping, was also initiated.

The second European programme update was for the olm (*Proteus anguinus*). There is a continuing decline in the extent and quality of its habitat. The main threats to this species are changes to the forested and pastoral land above the subterranean cave systems inhabited by the olm. Zagreb Zoo leads the programme, rescuing individuals that appear at the cave outflows after heavy rains to avoid predation by introduced fishes, like trout. Parallel to this project, there is a research component on sex determination and early disease detection in these populations.

Madagascar amphibian activities were focused on the work of the local NGO, Madagasikara Voakajy. In conjunction with Chester Zoo, the conservation actions prioritised a focus on the Mangabe region of the golden mantella (*Mantella aurantiaca*). Collection for the international trade, habitat degradation due to legal and illegal mining, and the conversion of breeding ponds into rice fields are the major threats to the species. Actions for 2014 have been to update the status of golden mantella breeding ponds in the area, population size estimates, habitat assessment and educational approach. A course was also run in country on identification and marking techniques for amphibians (Table 1, below).

An *ex situ* research project in collaboration with the same NGO and Paignton Zoo has been developed on microhabitat selection for the same species under the framework of a PhD.

In a global amphibian aspect for an update of the ACSAM (A Conservation Strategy for the Amphibians of Madagascar)

Table 1: Detailed research projects led during 2013/2014

Institutions	Main participants	Title
Cologne Zoo	Thomas Ziegler	Amphibian diversity research in Vietnam and Laos: description of new species, new records, faunal lists
		Amphibian ecology research (in particular Tylotriton and Paramesotriton: population status, autecology, habitat adaptation)
		Breeding projects (both in the Cologne Zoo and in Vietnam: Melinh Station for Biodiversity)
		Building up of rescue stations and amphibian breeding facilities in Vietnam (Amphibian Station Hanoi, Melinh Station for Biodiversity)
		Breeding related research (larval staging, tadpole descriptions)
London Zoo	Ben Tapley, Zoe Bryant, Sebastian Grant, Grant Kother, Iri Gill, Yedra Feltrer, Mark Wilkinson, David Gower	Substrate preference in the fossorial caecilian Geotrypetes seraphini using choice chambers
	Ben Tapley, Matthew Rendle, Frances Baines, David Rood, Matthias Goetz, Andrew Routh, Kay Bradfield, Javier Lopez, Gerardo Garcia	Meeting ultraviolet B radiation requirements of amphibians in captivity: a case study with mountain chicken frogs Leptodactylus fallax and general recommendations for pre-release health screening, using radiographs to assess bone formation and mineralisation in captive bred mountain chicken frogs.
	Ben Tapley, Jodi Rowley, L ng Văn Hào	Resolving data deficiency in two point endemic high altitude Vietnamese frogs: Are Leptolalax botsfordi and Oreolalax sterlingae Critically Endangered? Using mark release recapture and field surveys.
Thoiry Zoo	Cathy Gibault	Theloderma corticale : Contribution to a better knowledge of sex determination
		Long-term study of the amphibians of Ambodiriana forest (Madagascar).
		Study and conservation of Neurergus kaiseri in Iran. Collaboration with the University of Teheran.
		Determination of effective anti-Bd probiotics for at-risk Malagasy frog species
Nordens Ark		Reintroduction of the green toad in Sweden
Paignton Zoo Environmental Park		Conservation assessment of hyper-endemic amphibian species in the Uzungwa Scarp, Eastern Arc Mountains, Tanzania.
Chester Zoo		Bolivian Amphibian Initiative
		Invasive species and the spread of emerging pathogens affecting amphibian declines
		Amphibian Programme: Conservation Needs Assessment for Philippine Amphibians
DierenPark Amersfoort		SOS Vuursalamander
Paris Zoo	Olivier Marquis, Nicolas Vidal, Jawad Abdelkrim	Genetic assessment of the Mantella aurantiaca European captive population
	Olivier Marquis, Claude Miaud	Bd detection in old museum samples
	Olivier Marquis, Claude Miaud, Norin Chai	Bd, Bs and ranavirus prevalence in French zoo
	Olivier Marquis, Molly Bletz	Persistence trials of probiotics anti-Bd in Malagasy frogs

and Sahonagasy Action Plan was carried out during the international workshop based in Ranomafana NP. EAZA zoo representatives and the ATAG were involved in this important workshop.

The mountain chicken frog (*Leptodactylus fallax*) programme continues in both of the islands of Dominica and Montserrat. Efforts in Dominica continue with regular surveys of the relocated populations, giving some indication of breeding in the wild. At the same time, the work continues at the breeding facilities to get their group ready for reproduction. An extensive number of awareness activities were developed during the year with schools and communities. This project was also granted under the 2008 EAZA Year of the Frog.

Montserrat continues monitoring at the last sites where frogs have been recorded and the 4th trial release was due in June 2014. The meeting for the Recovery Strategy for the mountain chicken frogs for the next 20 years (2014-2034) was hosted in the same island bringing all partners from the Caribbean and overseas.

The final activity for the conservation component was the development of an online and robust user-friendly application that can be used to assess the conservation needs of the world's amphibians thanks to Amphibian Ark. This needs assessment programme will soon be tested with countries such as Madagascar. This project was financially supported with the final funds of the EAZA Year of the Frog. It will help to prioritize all the European species, helping our institutions to target more efficiently the species conservation projects.

Regional Collection Plan

The amphibian Regional Collection Plan (RCP) is now somewhat out of date and has not been updated since 2011. The existing collection plan had a huge focus on amphibians from Madagascar, many of which were not easy to acquire. Many of the species highlighted as priorities in the 2011 RCP have yet to make it into EAZA collections.

In August 2014, we began to develop a new amphibian RCP. To begin, we decided we wanted to ensure that the RCP complimented other global amphibian prioritisation initiatives, such as the amphibian conservation needs assessments (Amphibian Ark) and EDGE scores (Evolutionary Distinct and Critically Endangered species). We also felt it was important to ensure that the source of any new species was both sustainable and ethical.

A number of species are categorised as research species and we felt it was important that each research species listed in

the RCP should have a researcher working with the species as a contact point. Finally, we acknowledged that conservation breeding programmes should, where logistically or politically possible, take place within the indigenous range of a species and given priority if focusing on native species. We should also be more supportive of developing conservation breeding facilities within the indigenous range of the target species. Perhaps species held in facilities within the indigenous range, but outside of Europe, could also be listed on the RCP if an EAZA member is pivotal to the programme.

First, we completed a ground truthing exercise. Prior to developing the new RCP, we used the species holding list in ZIMS to determine which species are currently maintained in European collections. 54% of the species in the 2011 RCP were no longer present in European collections (including 71% of research species and 25% of species recommended for educational purposes). We also noted that some of the populations of the conservation species (Ark /rescue / supplementation) would not be able to fulfil this role due to the way they have been historically managed and concerns relating to health status of these populations which would make them unsuitable for release into the wild.

According to ZIMS, out of the 284 amphibian species maintained within the European region, only 75 species are represented by 50 individuals or more. Although there is a lack of consistency between institutions with regard to accessioning amphibian larvae it would appear that the populations of the majority of amphibian species held in the European region are not sustainable.

The RCP has only been completed for caecilian amphibians. We are currently working on the frog and salamander components of the RCP.

REPTILE

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

TAG Vice Chairs: Fabian Schmidt, Vice Chair for crocodiles and population management (Leipzig Zoo, Leipzig, Germany); Henk Zwartepoorte, Vice Chair for chelonians (Wilhelma Stuttgart, Stuttgart, Germany); Thomas Kölpin, Vice Chair for snakes (Wilhelma Stuttgart, Stuttgart, Germany); Gerardo Garcia, Vice Chair for conservation (Chester Zoo, Chester, United Kingdom); Thomas Wilms, Vice Chair for lizards



REPTILE TAG VISITING TIERPARKBERLIN DURING MID-YEAR MEETING

(Zoologische Gesellschaft Frankfurt, Frankfurt, Germany)

Programme coordination and TAG achievements 2013/2014

In the given period, the Reptile TAG (RTAG) maintained eight EEPs and 21 European Studbooks. The RTAG coordinates an optimal management of EAZA reptile collections to ensure long-term existence of populations of managed species of chelonians, crocodiles, lizards and snakes. This is all done while respecting conservation requests, research issues, space availability, ethics, safety and other associated aspects. Several EEPs have been evaluated in this time period and recommendations on how to improve them have been issued. In one case – the Chinese alligator (*Alligator sinensis*) – the EEP has been transferred to a new coordinator, Norbert Fritsch from Neunkirchen Zoo. Simultaneously, the RTAG is a platform where EAZA reptile specialists, as well as other professional colleagues, can meet, share and disseminate information, improve expertise in reptile husbandry, and develop relevant guidelines, protocols and recommendations.

In 2012, the Reptile TAG underwent significant changes

in its structure, including introducing two new Vice Chairs and increasing the number of TAG members. Thanks to these changes, the restructured RTAG has improved its efficiency and internal division of responsibilities in 2013-2014. The TAG focused on goals specified in the Reptile TAG Five Years Action Plan (formulated in 2012, with great support from the EAZA Executive Office), e.g., progress on the RCPs, solutions for stagnant programmes, and other significant issues, like bringing to life the Memorandum of Understanding (MoU) between the European Studbook Foundation (ESF) and EAZA to join forces to maintain more sustainable populations of endangered amphibian and reptile species for the future (signed in 2012). The MoU is an important document for the RTAGs species management programmes, dealing frequently with species with a significant portion of the captive populations held among private individuals.

Also in this time period, the vacant positions of veterinary advisors were occupied by Job Stumpel (Emmen) and Samuel Martin (Pierrelatte). The RTAG also took part in evaluations of reptile EEPs, which significantly helped to find some weaknesses and problems. The RTAG cooperated closely with the EAZA Amphibian TAG as well as with partners in other



REPTILE TAG UV WORKSHOP AT 2013 MID YEAR MEETING, LEIPZIG © THOMAS WILMS

regional associations (e.g., AZA, ZAA), including personal active participation at meetings (AZA – Fabian Schmidt). RTAGs representatives participated at EAZA events important for the TAG conservation work, like the Conservation Forum (Leipzig 2014), and are active in various EAZA activities related to research and population management.

To facilitate a creation of conservation *ex situ* and *in situ* links, the RTAG continued to develop a close cooperation with the IUCN Specialist Groups, Task Forces and other IUCN umbrella organisations – in particular Crocodile Specialist Group (CSG), Iguana SG, Fresh-water Turtle SG, CSG Tomistoma Task Force, Turtle Conservation Alliance – plus other international reptile conservation initiatives (e.g., Gharial Conservation Alliance, Asian Turtle Conservation Network, Blue Iguana Recovery Programme). It included also personal active participation at SG’s meetings (CSG 2013 – Ivan Rehak, Fabian Schmidt, where a special working group focusing on CSG–zoos co-operation has been created; ISG 2013 – Ivan Rehak; CSG 2014 – Fabian Schmidt) and vice versa participation of SG members at RTAG meetings (eg Ralf Sommerlad - CSG), or even inviting SG member to be RTAG’s advisor (Samuel Martin – CSG). During the working conference of the CSG in Lake Charles 2014, there were for the first time a special session on “Zoo contributions to Crocodylian Conservation“. This was a very good chance to demonstrate the impact of the work done by zoos on

the conservation of crocodiles. Fabian Schmidt not only supported the organizer Kent Vliet in compiling these sessions, but also represented the EAZA Reptile TAG with a lecture on “Developing Regional Studbooks – Genetic and Demographic Analysis of Small Populations“ co-authored by Thomas Ziegler.

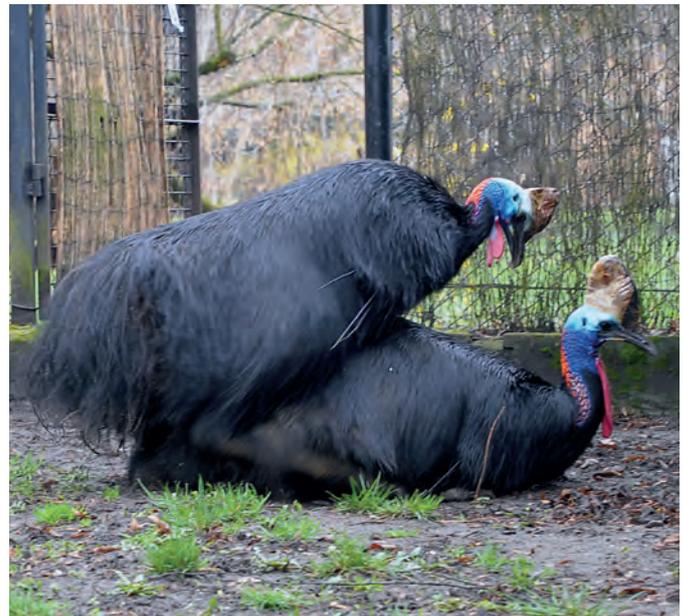
TAG meetings 2013/2014

Two meetings were held in 2013. The first meeting in April 2013 (together with ATAG) hosted by Leipzig zoo, Germany. Among a number of presentations and reports, a workshop was also held on UV light for reptiles. The second meeting was held during the EAZA Annual Meeting in Edinburgh, UK, in September 2013. During this meeting, a great variety of presentations, reports, programme updates, new information and discussions were given. It included also a quick population assesment explanation session with Kristine Schad (EAZA Population Biologist), and a detailed contribution on parthenogenesis in reptiles and its consequences for the zoo population management (by Ivan Rehak), which is an important topic for reptile management (including attractive species like Komodo dragons (*Varanus komodoensis*). Furthermore, a report was given by Jens Sigsgaard on the world’s first successful breeding of black caimans (*Melanosuchus niger*) at Aalborg Zoo. Another two meetings were held in 2014. The first meeting in June 2014 (Avifauna,

The Netherlands) was associated with Joint TAG Chairs Meeting 2014, and thus, in addition to the usual programme, it focused on inter-regional cooperation. It included several lectures from Richard Gibson from Auckland Zoo on several herpetological field programmes in New Zealand including the tuataras, and Eric Tsao gave an overview on the keeping and breeding of Sunda gharials (*Tomistoma schlegelii*) in Taipei Zoo and other Taiwanese institutions. The second meeting was held during the EAZA Annual Meeting in Budapest, Hungary, in September 2014. Among a number of various contributions, Iri Gill (ZSL London Zoo) introduced The Crocodile Husbandry Tool, which was developed during several previous meetings and is now a draft working document in the membership area of the EAZA website, but can still be updated and improved by EAZA members. Furthermore, Michel Ansermet, Fabian Schmidt and Thomas Ziegler gave an overview of the new taxonomic situation concerning the original three African crocodile species, and Lausanne volunteered to monitor the genetics of the European population of the African slender-snouted crocodile (*Crocodylus cataphractus*) for their taxonomy.

Research and Conservation 2013/2014

Significant development continued in implementing the EAZA Research Committee recommendations and focusing on important research issues for proper species management as well as *ex situ* (and in some cases *in situ*) conservation efforts. One example is a new conservation initiative on Sunda gharials in Sabangau, Borneo, supported by the Tomistoma (*Tomistoma schlegelii*) ESB and presented by Gonzalo Fernandez Hoyo. Thanks to the professional coordination of programme coordinators and cooperation from involved zoos as well as academic partners, important research projects have been conducted. For instance, the DNA analysis for the Vietnamese pond turtle (*Mauremys annamensis*) was repeated with more detailed analyses in Prague, confirming that the EAZA population is suitable for repatriation to the wild; an ambitious project, with the EAZA RTAG participation, for a species that is almost extinct in wild. Similarly, DNA research studies co-ordinated by Thomas Ziegler, Cologne, Germany (Philippine crocodile *Crocodylus mindorensis* ESB) and Michael Bungard, Paignton, United Kingdom (Cuban crocodile *Crocodylus rhombifer* ESB) brought very significant results essential for proper management of both species.



AN ISB FOR SOUTHERN CASSOWARY WAS ESTABLISHED IN 2013

RATITE

TAG Chair: Joost Lammers (Avifauna, Alphen a/d Rijn, The Netherlands)

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

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

In 2013 the EAZA EEP Committee officially approved Peter Smallbones, Paignton Zoo, as the new ESB keeper for the lesser rhea (*Rhea pennata*). In that same year the WAZA Committee for Population Management (CPM) officially approved the ISB for Southern cassowary (*Casuarius casuarius*) with Nicole LaGreco from San Diego as studbook keeper.

During 2013 the EAZA Ratite TAG met once in May, at the EAZA Bird TAG meeting in Villars les Dombes. Updates were given on the Southern cassowary ESB and the Lesser rhea ESB, the two ESB programmes within this TAG. Peter Smallbones managed to produce the first studbook for the species. There are some issues with hand rearing lesser rhea. Not many chicks are hand reared successfully, though parent rearing is very successful. Peter is going to collect data from participating institutions with the aim of developing a hand rearing protocol.

Kathy Brader, SSP coordinator for the North Island kiwi

(*Apteryx mantelli*), prepared a presentation that was presented by the TAG Chair on her behalf. Andreia Pinto from Lourosa Zoo gave an impressive presentation on the breeding facilities for Southern cassowary in Lourosa Zoo. They are managing them as a breeding trio (2.1) which is quite successful. Jo Gregson (Paignton Zoo) gave an update on the research carried out on ratites in mixed exhibits. This research is ongoing and will lead to guidelines being formed for these kinds of exhibits.

In 2014 another meeting was held at the EAZA midyear meetings in Alphen in June. Joost Lammers, ESB keeper for Southern cassowary, invited Anique Kappe from Gendika BV to give a presentation on DNA sexing in ratites, due to the fact that there are still some wrongly sexed cassowaries in the ESB population and the 'rumour' that DNA testing is still not reliable in ratites. The aim was to convince all zoos that DNA testing is reliable and more accurate than other methods (cloacal sexing and sexing based on morphology). Since this meeting was also attended by many colleagues from AZA zoos it was decided to give Andreia Pinto's presentation from last year again so that the AZA colleagues could also see the breeding set up in Lourosa.

Sara Hallager gave a presentation prepared by Chris Hibbard from ZAA on potential collaboration between ZAA, AZA and EAZA zoos with Rainforest Rescue on the Save the Cassowary Campaign (<http://savethecassowary.org.au/> and <http://savethecassowary.org.au/our-projects/>). Participating zoos can contribute money towards a variety of projects (radio tracking, replanting forest, rebuilding the rehab center) with potential to have staff come out in the field and help on projects.

Elegant crested tinamou (*Eudromia elegans*), a monitored species, has recently bred in a few EAZA zoos and there may be possibilities for export to AZA. There is a recent article (in German) written by Michael Grauer on rearing of tinamous; It was published in the German Zoo Keepers News. The TAG will try to get this translated so that it is available for everybody.

Programme updates 2013/2014

Some exciting news in 2014 from the North African Ostrich EEP is that the first chicks hatched in the 3 year old population that was established through the collection of eggs from Morocco. A male hatched in Hamburg and in Gelsenkirchen two females followed. A new collection of eggs from Morocco was unfortunately not realised but Hannover will try to arrange a new import of eggs in 2015.

In the Southern cassowary ESB the pair in Lodz produced offspring for the first time. A male chick hatched there and this is good news for the ESB since it is in need of more breeding pairs.

There was also some good news in the Northern brown kiwi SSP in 2014. Frankfurt had their first chicks from the pair originating from New Zealand (2010 import, new line) which is an important step forward for the SSP population.

Future plans

The main focus for the TAG for next year(s) will be revising the RCP. The current RCP dates from December 2010 and should be revised soon. The TAG is aiming to publish version 2 of the RCP by the end of 2015 or beginning of 2016.

PENGUIN

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

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

Programme coordination

During 2013, a change took place in the coordination of the EEP programme for the Humboldt penguin (*Spheniscus humboldti*); the new coordinator is Anna Westbury (Twycross Zoo). At the same time, Steven Vansteenkiste (Zoo Antwerp) was succeeded by Clare Rugg (Living Coasts) for monitoring the Macaroni penguin (*Eudyptes chrysolophus*). It had been the intention of the TAG to change the level of management for the Magellanic penguin (*Spheniscus magellanicus*) from a monitoring level to an ESB, but this did not yet work out. On the other hand, the ESB for the King penguin (*Aptenodytes patagonicus*) run by Lynda Burrill (Royal Zoological Society of Scotland) was converted into an EEP in 2014.

A formal start was made in 2014 for the succession of Sue Woodgate, ESB Keeper for Rockhopper penguins (*Eudyptes moseleyi* and *Eudyptes chrysocome*), and to change it from an ESB to an EEP at the same time. This process will be finalised at the start of 2015.

In 2014, an evaluation of the EEP for the African penguin (*Spheniscus demersus*), which is run by Corinne Bos (Artis Zoo), was carried out. Preparations were made by Corinne in 2014 for a master planning session for the African penguin to be held in the summer of 2015.



AFRICAN PENGUIN (*SPHENISCUS DEMERSUS*) AT ARTIS ROYAL ZOO © RONALD VAN WEEREN

Regional Collection Plan

During 2013 and 2014, one of the main focuses of the TAG was to produce a Regional Collection Plan (RCP), which was virtually finished by the end of this term. Awaiting further analysis of the populations and an upcoming space survey, target populations will be incorporated into the RCP in 2015.

Best Practice Guidelines

The TAG discussed how to set up comprehensive Best Practice Guidelines (BPG) for all penguin species, to be developed in 2015 / 2016. In this context, a workshop was held during the session of the Penguin TAG at the EAZA conference in Budapest in September 2014. The result of this meeting was a list of priorities which will serve as a starting point for compiling the BPG. In 2014, the TAG was involved in the overall reviewing of the North American AZA Animal Care Manual (ACM) for penguins and this document was accordingly published in the same year.

Conservation

As before, and throughout 2013 and 2014, the TAG has been a channel of communication and support for both the Southern African foundation for the conservation of coastal

birds (SANCCOB) and Sphenisco, in respect of their *in situ* conservation activities of African and Humboldt penguins, respectively. Throughout 2013 and 2014, the TAG has also been serving as a link between the EAZA Pole-to-Pole campaign and facilities keeping penguins in their collections.

Global sessions

2013 and 2014 witnessed two global meetings of people working with penguins.

The Global Joint TAG Chairs Meeting in Alphen in June 2014 saw the unique gathering of all Penguin TAG's from the three regions (North America, Europe and Japan), as well as representatives from Africa and Australia. The status of the regional populations of all species were reviewed and discussed. Most populations came out as fairly independent because of their status and size. For the macaroni penguin (*Eudyptes chrysolophus*), however, it was agreed that a closer management of the species was needed, between Europe and North America in particular. Currently, no little penguins (*Eudyptula minor*) are kept in Europe, but it also became clear that an importation would be feasible within a few years, provided sufficient space and husbandry experience is available within EAZA. The populations of chinstrap penguins (*Pygoscelis antarctica*) and Adélie penguins (*Pygoscelis adeliae*) in Europe are so small and also related to the North American population that they should be considered as satellite populations of these populations.

The 8th International Penguin Conference held in Bristol in September 2013 allowed members of the Penguin TAG to tighten the bonds not only with colleagues from the zoo community from other regions, but also with people carrying out research in the wild, in particular. The conference comprised 60 oral presentations, over 100 posters and specialist workshops, covering a wide range of aspects of field biology, conservation and management of virtually all species of penguins.

Statements

In the course of 2013, the TAG was informed about the existence of a "Project proposal for *in situ* and *ex situ* research and conservation breeding of sub-Antarctic penguins" launched by a group of six zoos from Europe, Asia and Canada. For that reason, the TAG got in touch with the EEP committee, the EAZA Executive Office, the North American and Japanese Penguin TAGs, as well as the World Association of Zoos and Aquaria (WAZA).

As it became clear that the project had not started at



GREATER ADJUTANT STORKS GUWAHATI DUMP © JAYDAV MANDAL

these institutions, we first had to get some idea of the level of feasibility of the project, and as the need for the influx of wild birds into existing captive populations was taken as a drawn conclusion without the provision of any solid scientific evidence, the TAGs all disassociated themselves from this project proposal.

CICONIIFORMES AND PHOENICOPTERIFORMES

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

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

This TAG, initiated in 1992, is Chaired by Cathy King (Weltvogelpark Walsrode) and Andrea Bračko (Zagreb Zoo). It has an additional 23 members and six general, veterinary and nutritional advisors. TAG Chairs from AZA and PAAZA and all the relevant IUCN-SSC Specialist group Chairs and coordinators are considered advisors too. The Northern bald Ibis EEP coordinated by Christiane Böhm (Alpenzoo Innsbruck, Austria) was given high ratings from participants

during the 2013-2014 evaluation, and the TAG given a good evaluation in 2014.

TAG Meetings

The EAZA Ciconiiformes and Phoenicopteriformes TAG met twice in both 2013 and 2014. The 2013 mid-year TAG meeting included an extensive discussion about regional collection planning generally and the Ciconiiformes and Phoenicopteriformes TAG collection plan specifically. Flamingo husbandry was a key topic, highlighted by presentations by Adelheid Studer-Thiersch regarding how feeding regimes for greater flamingos at Basel Zoo (Switzerland) influenced breeding behaviour in unexpected ways, and Fabia Wyss demonstrating the positive effect of very fine sand together with shallow water on the condition of greater flamingo feet at the Basel Zoo.

Holding the 2014 mid-year meeting in conjunction with a global TAG Chair meeting provided an opportunity to focus on inter-regional collaboration. Tom Schneider (Detroit Zoo, USA) explained AZA population management of white storks (*Ciconia ciconia*) and the role of white storks imported from Europe as a collaboration between the AZA and EAZA TAGs. The description by Tjerk ter Meulen of low-cost but highly functional indoor housing for Ciconiiformes at GaiaPark Kerkrade Zoo (Netherlands) and by Andrea Bračko of the

Aviary Database Project hosted by Zagreb Zoo for sharing information on aviary construction and experiences created much interest globally.

The EAZA annual meeting provides an opportunity for representatives of species included in the EAZA Ciconiiformes and Phoenicopteriformes Regional Collection Plan to present short reports on their programs. Additionally talks on successful enclosures housing Ciconiiformes and Phoenicopteriformes and widely relevant management issues are included. Baptiste Mulot described problems with using genetic markers to identify hybrid flamingos at Beauval Zoo (France) during the 2013 annual meeting. Marc Damen presented some creative ways money was saved during construction of the large aviary at Rotterdam Zoo (Netherlands) and Pierre Gay illustrated how Ciconiiformes are housed in a covered enclosure with okapis at Zoo Doué (France). Nils Dijkstra explained how Amersfoort Zoo (Netherlands) methodically evaluated the Chilean flamingo (*Phoenicopiterus chilensis*) enclosure using the hypothetical husbandry point system for breeding flamingos in captivity available from the TAG to initiate changes to improve breeding success. Nils was in the spotlight again at the 2014 annual meeting when he described the new adventure aviary for marabous (*Leptoptilos crumeniferus*) and other birds at Amersfoort Zoo. Andrzej Kruszewicz flagged up availability of post-rehab white storks at Warsaw Zoo as a source of storks for display; many of the white storks going to AZA collections in recent years were from Warsaw Zoo.

Conservation and Research

Attention is also given to *in situ* conservation and research activities, especially those supported by zoos, or that could potentially be supported by EAZA Zoos. During the 2014 annual meeting Holger Schulz and Peter Enggist described SOS Stork, a research program for conservation of the white stork in Western Europe, and Peter Galbusera reported on results to date from KMDA (Belgium) led research on effects of migration and translocation in white stork population genetics. These researchers were introduced to each other at the TAG meeting, paving the way for their future collaboration. Additionally Zagreb Zoo committed to financing GPS trackers for two white storks in Croatia as part of the SOS project, and hopefully other zoos in under-represented locations will follow suite. Will Duckworth (IUCN-SSC) discussed conservation initiatives for the critically endangered white-bellied heron *Ardea insignis*, including an upcoming conservation meeting largely

funded by a 30,000 euro grant awarded to Synchronicity Earth and Weltvogelpark Walsrode by the EAZA South East Asia Campaign for this purpose. A conservation action plan resulting from the meeting (held in December 2014) has already been drafted. Casper Bijleveld (Papiliorama Foundation, Switzerland) described a conservation project ongoing since 1989 in Belize, with an emphasis on the conservation of American woodstorks (*Mycteria americana*) and other water birds. Royal Burgers' Zoo is an EAZA member supporting this work, and other contributors are also welcome. Cathy King talked about the potential involvement of the TAG and support from EAZA members for safeguarding essential habitat for lesser Flamingos in Lake Natron.

Regional Collection Plan

The Ciconiiformes and Phoenicopteriformes RCP underwent a major review in 2013. A comparison of recommendations regarding *ex situ* breeding programs for threatened Ciconiiformes from three sources; the EDGE and BirdLife International data bases and an article by Collar and Butchart in the 2014 International Zoo Yearbook, illustrated how contradictory recommendations can be. As of 2014 the RCP includes 37 species: 2 are covered by EEPs, 9 by ESBs, 15 are monitored by an appointed person and 11 are monitored by the TAG. Of these 8 (22%) fall into threatened or near threatened IUCN red list categories. Some non-threatened species fulfil model/research roles, but most are included in the RCP for educational purposes, to illustrate the importance of protecting wetlands. During the global 2014 TAG Chairs meeting in Alphen (The Netherlands) representatives from PAAZA, AZA and EAZA agreed to manage the Southern bald ibis (*Geronticus calvus*) inter-regionally on an informal basis, and Harrison Edel from Dallas Zoo (USA) was appointed the ISB keeper in 2014. No formal agreement exists regarding global management of the widely-dispersed but rare in zoos shoebill (*Balaeniceps rex*), but zoos have been cooperating in sharing information and exchanging animals. Cathy King contributed to the Shoebill Single Species Action Plan informally approved by the AWAE standing committee in 2013.

Publications and Presentations

Four publications resulting from TAG effort appeared in International Zoo Yearbook in 2013 and 2014, two on husbandry (husbandry training for marabous and shoebill husbandry guidelines) and two reviewing the TAG's past and

present activities and defining future priorities regarding enclosure design and flamingo regional management. Presentations about the TAG and its collaborations were given at two workshops in 2013 (mid-year AZA meeting, EAZA TAG Chairs meeting), and the Third International Flamingo Symposium in 2014. Cathy King also participated in the white-bellied heron meeting in Assam India in December 2014, to help define the potential roles of an *ex situ* population and to investigate how EAZA members can support conservation of this majestic heron. She was able to visit the greater adjutant storks (*Leptoptilos dubius*) breeding sites and discuss conservation priorities with people there, and now has an active role in advising on conservation strategies. Cathy King serves on the board of the IUCN SSC Heron Specialist group, is the European *ex situ* coordinator for the Flamingo Specialist group and is an active member of the Stork Ibis and Spoonbill Specialist Group.

Important achievement

An important achievement of the TAG was the formation of the Lesser Flamingo (*Phoeniconaias minor*) Working Group, coordinated by Johnpaul Houston, in late 2013. Lesser flamingos in Zoo Zlin in the Czech Republic and Leipzig Zoo in Germany, both group participants, have since produced their first chicks, and the group enthusiastically shares information with other lesser flamingo holders on methods to improve reproduction. This group works in close cooperation with AZA and with the help of Maja Damjanovic of Zagreb Zoo and Laurie Conrad, the AZA Lesser flamingo studbook keeper, managed to get superb responses to an inter-regional husbandry survey. The group (with support from the TAG) is encouraging zoos to exchange flamingos to improve the population demographics. The European (and North American) populations of this species are heavily male biased, and some European zoos hold them in very small numbers. This working group serves as a good model for formation of other groups to tackle difficult species or other issues within the TAG.

WATERFOWL

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

Vice Chair: David Jeggo (Durrell Wildlife Conservation Trust, Jersey, Channel Islands)

Vice Chair: Johnpaul Houston (Blackpool Zoo, Blackpool, United Kingdom) (since May 2014)

The EAZA Waterfowl TAG was established at the EAZA conference in Prague 2001 and includes all Anseriformes species – currently 150 species. As the EAZA Pelecaniformes TAG (vice) Chair position was vacant for some time it was suggested to merge both TAGs. This proposal and the consequences were discussed with the TAG members. Finally a proposal was forwarded to the EEP Committee for official formalization, so since May 2014 both TAGs have been merged.

Part of this merging exercise was the addition of another Vice Chair. Johnpaul Houston from Blackpool Zoo kindly offered his help and was at the same time appointed as vVice Chair for the TAG.

The first European Regional Collection Plan was published in 2002, and has been revised as required since then. A second RCP was developed in 2008 with the use of a revised decision flowchart. Attention has been focused on IUCN listed species.

Programme coordination and evaluation 2013/2014

After the establishment of ESBs for the white-winged woodduck (*Cairina scutulata*) and the critically endangered Baer's pochard (*Aythya baeri*) in 2012 the TAG supported a proposal from Johnpaul Houston, Blackpool Zoo to establish an ESB for the Scaly-sided merganser (*Mergus squamatus*) in 2013. All three programmes have produced their first studbooks. The Baer's pochard programme is awaiting the outcome of genetic testing initiated by WWT (Wildfowl and Wetland Trust, Slimbridge) to check the purity of the current birds.

Only the Meller's ducks (*Anas melleri*) are managed on EEP level. Nine further species are monitored by different persons, twelve other IUCN red listed species are monitored by the TAG.

Since the TAGs are merged the programmes of the former Pelecaniformes TAG also fall under the umbrella of this TAG, being Dalmatian Pelican EEP, Bank cormorant EEP, Pink Backed Pelican ESB (vacant) and Little Pied Cormorant ESB.

The following programmes are amongst others monitored by person; northern gannet (*Sula bassana*) and anhinga (*Anhinga anhinga*), Eastern white pelican (*Pelecanus onocrotalus*), seaducks (*Merginae*) and screamers (*Anhimidae*).

The number of EAZA institutions keeping Waterfowl is slowly growing, as well as the total number of Anseriformes kept in EAZA. However the breeding of Anseriformes in EAZA institutions is still very limited. Most institutions regularly acquire birds from the private sector. The breeding success in EAZA institutions can't guarantee sustainable

populations for most Anseriformes species yet. The newest discussions about pinioning of birds in different EU countries won't influence this trend in a positive way.

Several important EAZA Waterfowl collections are still not included on ZIMS – or don't update their numbers for these species.

EEP evaluations were initiated for Dalmatian pelican (*Pelecanus crispus*) and Bank cormorant (*Phalacrocorax neglectus*). The outcome will be forwarded to the EEP Committee for an official response.

TAG meetings 2013/2014

The TAG met during the midyear Bird TAGs Meeting in Parc des Oiseaux Villars les Dombes in June 2013. In 2014 the TAG met during the midyear meeting in Avifauna Alphen. Given the combination with the Joint TAG Chairs meeting colleagues from other regions joint the meeting. The AZA TAG Chair updated us about the activities in the States, it was concluded that given the overlap in species we are both managing there is certainly ground for a closer cooperation over the coming years.

FALCONIFORMES

TAG Chair: Mark Habben (ZSL, London, United Kingdom)(since 2013)

TAG Vice Chair: Kirsi Pynnonen-Oudman (Helsinki Zoo, Helsinki, Finland) (since 2014)

TAG meetings and developments 2013/2014

A busy period with TAG meetings held at the mid-year in 2013 and in 2014 the TAG met during the mid-year and the annual conference. We have seen a productive year beginning with the appointment of a new Vice Chair Kirsi Pynnonen-Oudman (Helsinki Zoo) who is taking a specific responsibility for Strigiformes and overseeing the review of the regional collection plan as well as co-Chairing the TAG. Dominik Fischer has also been appointed as the veterinary advisor to the TAG. Dominik has a broad experience with birds of prey and is on the review panel for the recently submitted Husbandry guidelines for free flight demonstration birds.

A new EEP co-ordinator for the White-tailed seaeagle *Haliaeetus albicilla* EEP was appointed and Piotr Cwiertnia (Poznan) took over the programme following a brief vacancy.

Research, Publications and Consultancy

The TAG has produced a number of excellent publications



VULTURE WITH HARNESS AT INTERNATIONAL CENTRE FOR BIRDS OF PREY © MARK HABBEN

throughout this period including the first extensive draft Best Practice Guidelines for white headed vultures (*Trigonoceps occipitalis*) submitted by the studbook keeper, the definitive guidelines for housing bearded vultures *Gypaetus barbatus* in captivity submitted by the coordinator, aimed at improving the aviary conditions and consequently the survival rate of their birds, also giving insights into analyzing the behavior of pairs. The Bearded vulture EEP also produced the hand rearing protocol as managed at Helsinki zoo which was distributed to holding collections. The Vulture conservation Foundation also produced a high quality film aimed at providing Bearded Vulture EEP-partners the possibility to show collection visitors the work that is being carried out for the species. In terms of communicating their work, the bearded vulture EEP has set a benchmark.

The TAG Chair has been working on compiling a draft edition of the husbandry and management guidelines for free flight birds. When ready the guideline will be uploaded to the Falconiform TAG page. However the document will be sent to all TAG Chairs and demonstration managers in selected EAZA collections as well as members of the AZA first for edits and additions prior to final submission. The draft includes all aspects of managing free flight birds, including tethering and dietary management.

We have been involved with research and conservation, including attendance at a training session at the International Centre for Birds of Prey to trial methods and materials for attaching to GPS transmitters to vultures. Various harnesses of differing materials were trialled on African species at the centre to look at minimising impact on flying birds. The systems were to be agreed and used on Asian species as part of the ongoing conservation efforts. Establishing appropriate materials from which to construct the harnesses is less technical but no less important than the production

of the tracking system. They have to work together and for prolonged periods. In this example, air tube was covered in a Teflon sleeve to create the harness that holds the tracking system.

The TAG has been widely involved with vulture species and this year, following the news that Diclofenac was authorised for use in Spain and Italy as a veterinary drug, TAG members alongside specialist vulture groups were forthcoming and pro-active in collating an appropriate response to contest the use of the drug for domestic livestock in Europe. 2014 reports confirmed that eagles are also susceptible to veterinary Diclofenac, effectively increasing the potential threat level, and the risks for European biodiversity. The Falconiform TAG supported a number of leading NGO's including the Vulture Conservation Foundation and the IUCN vulture specialist group in responding to the opportunity for public consultation. Utilising fact based knowledge to present a scientific opinion regarding the risks to vultures & other necrophilous species we presented a case to European authorities for revoking the use of the drug. Members of the TAG also sit on the advisory board of the VCF and contributed to the 2014 press release.

The TAG recognises that threats to Gyps vultures and other necrophilous species are global. First estimates of a 30-year pan-African vulture decline, confirm that declines have occurred on a scale broadly comparable with those seen in Asia.

In discussion with Campbell Murn of the Hawk Conservancy Trust and Jemima Parry-Jones of the International Centre for Birds of Prey we are backing the notion that there is no legitimate case for trading species that now qualify as Critically Endangered. If the proposed reason for an import is for inclusion within breeding programmes, we are urging relevant authorities to be aware of the existing and proposed conservation breeding programmes for African vultures proposing that no vultures are exported from Africa. To this end the TAG are proposing two new studbooks to be implemented in 2015. One is in support of hooded vultures (*Necrosyrtes monachus*) and the other for African white back vultures (*Gyps africanus*). The International Centre for Birds of Prey holds both of these species and is prepared, with EAZA Institution support to take on each of these as studbooks and potentially an EEP for the latter.

Given the concern for Old World vultures it is likely that all old world species will be proposed for programs given the number of birds within EAZA collections.

Finally work has commenced on the Regional Collection

plans for both Falconiformes and Strigiformes with a view to updating and proposing for the end of 2015.

GALLIFORMES

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

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

Programme coordination and evaluation

During 2013 and 2014 the TAG welcomed Gavin Harrison (Waddesdon Manor Aviary) as studbook keeper for the Rothschild's Peacock-Pheasant (*Polyplectron inopinatum*). There are still two vacant positions: Malaysian peacock pheasant ESB and Malayan crestless fireback ESB. These programs have been vacant for a very long time and there has been discussion to down-grade them due to the low number of birds currently kept in EAZA institutions. However both species are under serious threat in the wild and it could be very important for the survival of both species that there is a safeguard population which could be a potential pool for reintroduction when necessary. The TAG would very much like to spark interest in these beautiful and peaceful species. Birds could become available through cooperation with the World Pheasant Association so if there is any interest, please get in touch with Jan Dams (jan.dams@weltvogelpark.de).

Monitoring programmes were established for Green peafowl (Gemma Meechan, Edinburgh zoo), Ocellated Turkey (Sean Meechan, Edinburgh zoo), Temminck's tragopan (Davide Frigo, Cotswold wildlife park) and Satyr tragopan (Trevor Franks, Bristol zoo).

Research, conservation and TAG-produced documents

During the Galliformes TAG meeting in Budapest a presentation was given by the TAG Chair on how to fit Galliformes species into modern zoo exhibits (walkthroughs, mixed exhibits, etc.). Tips were given on how to manage these exhibits and examples of functioning mixed exhibits were given to make sure these species are not forgotten in modern zoos. This information and much more is available on the Galliformes TAG webpage.

At the same meeting in Budapest the TAG Chair took a closer look at the article from Collar and Butchart (Conservation breeding and avian diversity: chances and challenges; Int. Zoo Yb. (2014) 48: 7–28). This article

enumerates the avian taxa that are subject to, or might most appropriately be considered for, conservation-breeding programs. For the Galliformes there are 31 species which would benefit from such a program. However from these 31 we only have 7 species for which we have a population that is managed and viable. There are 4 other species which have possibly viable populations but which are not managed. All other species either do not have a viable population or are not represented in Europe. This again showed that the Galliformes desperately need more attention within our Zoo Community. In 2015 the TAG plans to update the Regional Collection Plan and will include the information given in this article to promote the keeping of rare Galliformes species in EAZA institutions.

The TAG has also tried to encourage zoos which currently keep Temminck's-, Satyr- or Cabot tragopans (*Tragopan temminckii*, *Tragopan satyra* and *Tragopan caboti* respectively) to get their birds tested for purity. The World Pheasant Association has given us the opportunity to participate in their genetic study in order to create pure captive populations for all three species. If you want to test your birds please get in touch with Ludo Pinceel (lpgalliformes@gmail.com) for feather taking protocols and further information. The cost to test one bird is approximately €75.

Success story

The main focus of the TAG was on the Edwards pheasant (*Lophura edwardsi*) genetic study which is run in close cooperation with the World Pheasant Association and BioGenomics of the University of Leuven. The programme was made possible by financial support from the World Pheasant Association, several zoos (Paignton zoo, Chester zoo and Bioparc Fuengirola), ZGAP and the EAZA South East Asia Campaign fund. The goal of this study is to check the purity and the remaining genetic diversity of the worldwide captive population. Samples from Europe, America and Vietnam have been tested and the results seem promising. Samples from Japan will hopefully be tested in 2015.

The Galliformes TAG also reported about the efforts around the Edwards pheasant in the IUCN/SSC Galliformes specialist group newsletter (G@llinformed (2014) issue 8).

In September 2014 Dang Gia Tung, the current director from Hanoi Zoo, visited Europe and after contacts with Alain Hennache (who managed the Edwards' studbook until his retirement in 2009) met with some key people in Germany. Present were representatives from the Galliformes TAG, Zoo Prague (running the studbook at present) and the WPA.



TAMMINCK'S TRAGOPAN (*TRAGOPAN TEMMINCKII*) © ARIEL JACKEN

Suggestions were made for enhancing the captive population in Vietnam by sending some individuals from the European population to Hanoi. Prague Zoo was prepared to keep the birds in quarantine and to manage the necessary paperwork. In 2015 4 birds (1.3) will be sent to Hanoi Zoo. They will be paired up with the descendants of a wild caught male in order to safeguard that very important genetic information. The TAG would like to take this opportunity to thank Prague Zoo (and especially EEP coordinator Tomas Kapic and bird curator Antonin Vaidl) for offering to organizing and financing this crucial transport.

In July 2014 the Edwards Pheasant Working group in Vietnam (VN-EPWG) was established. The VN-EPWG will host annual meetings, hopefully twice a year to exchange information and promote the conservation of Edwards's Pheasant and their habitats. The Galliformes TAG has been sharing information on *ex situ* conservation activities and has committed support to Viet Nature and VN-EPWG, if requested.

GRUIFORMES

TAG Chair: Geer Scheres (Cracid Breeding and Conservation Center, Zutendaal, Belgium)
Vice Chair: Rob Belterman (Weltvogelpark Walsrode, Walsrode, Germany)

TAG changes 2013-2014

As the studbook keeper of the Blue crane ESB, Ryszard Topola, changed institutions from Lodz to Warsaw (May 2013), the transfer of his studbook was formalized by the EEP Committee accordingly.

As the Vice Chair was no longer employed by Rotterdam Zoo, he was offered the opportunity to continue as Vice Chair



IUCN CRANE CONSERVATION WORKSHOP, WELTVOGELPARK WALSRÖDE

and EEP coordinator for both the Red-crowned and Siberian crane EEPs with institutional support from Weltvogelpark Walsrode. (May 2014)

TAG meetings 2013-2014

During this period the TAG met during the midyear meeting in Alphen (June 2014) and shortly during the annual meeting in Budapest (September 2014). Several TAG members attended the Joint TAG Chairs meeting and we had very good discussions together with all Gruiformes TAG representatives from the different regions. During the Gruiformes TAG meeting we got amongst others an update from the KwaZulu-Natal Crane Foundation (South Africa), regarding their Wattle crane recovery project. After the Joint TAG Chairs and bird TAGs meeting, the Japanese representative was taken to CBCC in Zutendaal to show him the facilities and working methods. During the regular Gruiformes TAG meeting in Budapest an overview was given on the current programs.

In September 2014 Rob Belterman went to Russia to help the International Studbook Keeper for Siberian Cranes, Tatiana Kashentseva, with data input and compiling a new ISB (supported by Weltvogelpark Walsrode) The International Studbook was published in September 2014 and is available through Rob Belterman. Contact E-mail: (rob.belterman@weltvogelpark.de)

The Gruiformes TAG meeting during the EAZA Conference 2014 in Budapest was Chaired by Rob Belterman. A list of all Gruiformes species kept by EAZA institutions and an overview of the current programs were presented.

A very important meeting in November 2014 was the IUCN Crane Conservation Workshop, generously hosted and financially supported by Weltvogelpark.

The meeting was intended to assemble specialists to review and revise the IUCN Crane Action Plan via the creation of 15-20 objectives to drive the process of conservation of the 15 crane species holistically and from a global perspective. The

meeting was very productive and we managed to go through each point of the agenda. Proceedings will be published at the EAZA Gruiformes TAG space as soon as they are available.

CHARADRIIFORMES

TAG Chair: Dionne Slagter (Rotterdam Zoo, Rotterdam, The Netherlands)

Vice Chair: Nigel Simpson (Bristol Zoological Society, Bristol, United Kingdom)

Kirsi Pynnönen-Oudman, Helsinki Zoo, stepped down as Vice Chair beginning of the year 2013. We thank her for all her hard work for this TAG and hope we can still make use of her knowledge. Nigel Simpson, Bristol Zoo Garden, took over from her. The midyear meeting in Parc des Oiseaux 2013 was his first meeting as Vice Chair for the TAG.

Inca tern meeting January 2013

At the beginning of this year, Nigel Simpson (champion of the Terns) and Dionne Slagter (Chair) got together to have a look at the genetics of the Inca tern (*Larosterna inca*) population at EAZA member institutions. This, the only ESB within the TAG, has historically suffered from a lack of genetic information, which has hampered the setting of priorities for the species and individuals. The meeting set up a definitive list of population founders, discussed the need for stronger contacts between all ESB participants and identified the need for species Best Practice Guidelines – all of which have resulted in the formulation of an action plan.

Bird TAG Mid Year Meeting May 2013

During the meeting at Parc des Oiseaux 3 TAG members were asked to identify long and short term goals for the TAG, and the feedback pointed towards a short term focus on Atlantic puffin (*Fratercula arctica*), inca terns and gulls, with longer term goals including building more sustainable populations for the RCP species and connecting as a TAG with insitu projects for the CR and EN species that are not kept in EAZA populations. Input was also sought on the last draft of the RCP for Lari and Alcea species.

Nigel Simpson gave a presentation on behalf of Inca tern ESB keeper Amy Fitzgerald about the breeding of the species at Living Coasts; this indicated that the colony species, with a little planning and forethought, breeds well at zoos. Amy also requested EAZA members to contact her regarding Inca tern births, surplus or wanted birds.



INCA TERN © NIGEL SIMPSON

Jo Gregson gave a presentation on how shorebirds are kept in Paignton Zoo, showing that some species can do really well in mixed-exhibits and showed modern aviary designs that suits the species well and show them in a more natural habitat.

Seabird Working Group October 2013

A special Seabird Working Group meeting was held in Artis Royal Zoo, Amsterdam in October. Both Chair and Vice Chair were present, as well as four of the five species champions in the group and the two advisors for the working group. The meeting was aimed at identifying next steps for the working group as a whole and the participants individually.

The Regional Collection Plan was finalized during this meeting and is published on the EAZA member area. Discussion on the need for a pinioning statement for this TAG and how to proceed with the Oiled Seabird Network were held with good results. The group also agreed to produce basic Best Practice Guidelines for all three subgroups (Gulls / Terns/ Alcids) during 2014.

Wader Working Group:

First steps have been taken to start a wader working group.

Colleagues from a number of EAZA members were contacted to join, with the group aiming to hold its first meeting soon. Nigel Simpson, as Vice Chair, is taking the lead on building the group.

Bird TAG midyear meeting Alphen June 2014

A TAG meeting was held in Avifauna during the joint TAG mid-year meetings and we were fortunate to welcome the AZA Chair Cindy Pinger from Birmingham zoo, who gave a presentation on regional collection planning in AZA. The AZA care manual for shorebirds was shown and it was agreed that EAZA would adopt this care manual for use in EAZA (now available on Tag webpage). AZA also have a newsletter that is available on the ASAG website. Tom Schneider gave an overview of the AZA piping plover conservation project, and information on projects involving American avocet (*Recurvirostra americana*), snowy plover (*Charadrius nivosus*) and wintering piping plovers (*Charadrius melodus*).

Information sheets on gulls have been produced by Jo Gregson at Paignton and are now available on the TAG webpage.

Other presentations included David Jeggo from Durrell

about zoo seabird deaths in the Channel Islands, Simon Brusland from Heidelberg on Malaria in Inca terns and Lapwing DNA research, Flemming Neilson from Copenhagen on Atlantic puffins and Nigel Simpson, on behalf of WWT on their Spoon-billed sandpiper project.

EAZA annual conference Budapest September 2014

A short meeting was held with presentations on recent taxonomic changes to Charadriiformes, training of Charadriiformes at Copenhagen zoo, overview of critically threatened waders and a discussion on water quality and substrate issues.

Breeding programmes

The proposed Atlantic puffin ESB was approved at the EEP committee meeting during annual conference in September. This ESB is being coordinated by Flemming Neilson at Copenhagen zoo.

Other TAG business

In 2014 the TAG reviewed population sizes and space availability. Nigel Simpson wrote an article for the AZA newsletter, the Shorebird introducing the EAZA Charadriiformes TAG, opening the way for interregional cooperation. A new TAG logo was produced in 2014 and Dionne Slagter was re-nominated and approved as TAG Chair after moving from Artis Royal Zoo to Rotterdam Zoo.

PIGEON AND DOVE

TAG Chair: Duncan Bolton (Farnham Birdworld, with inst. Support from Paignton Zoo)

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

The Pigeon and Dove TAG met twice in 2013-14. First time during the Annual Conference in Edinburgh (2013), secondly during the midyear meeting in Alphen (2014). As the midyear meeting in Alphen was combined with the Joint TAG Chairs meeting, there was a high attendance from bird colleagues from other regions. The Columbiformes TAG Chair of our American colleagues updated us about the developments in the United States. There is a clear wish from both sides to more clearly work together on amongst others some of the programme species and regional collection planning.

During 2013 there was a new ESB programme established for the Black-naped fruit dove (*Ptilinopus melanospilus*).

2013 was a remarkable year for the Socorro dove EEP, as the first (EEP) birds were transferred to Africam Safari (Mexico) via Albuquerque (US). This was the first return of the species to Mexican soil in over 40 years!

Since the new White-naped pheasant pigeon ESB studbook keeper took over in 2012, this programme made some good progress. There is a clear insight now on how the programme is doing, and what the best way forward is for the coming 5 years.

The TAG is working on solving the vacancies for the remaining crowned pigeon ESBs.

The TAG was encouraged to; work on restructuring and making a clear task division between the TAG members, actively involve other colleagues to share the workload, work on improving the overall communication with all parties involved, and together work on a more continuous progress (produce and publish minutes, follow up on actions, etc.). Most importantly the TAG was encouraged to publish a revised Regional Collection Plan. The EEP Committee also concluded that that TAG has some important conservation dependent species under its remit (Socorro dove (*Zenaida graysoni*)EW, Mauritius pink pigeon (*Nesoenas mayeri*)EN). One of them being the need for a Mauritius pink pigeon EEP Masterplanning session, something which was completed in March 2014.

Mauritius pink pigeon Masterplanning session, Jersey March 2014

The Pink Pigeon is endemic to the island of Mauritius in the western Indian Ocean, where it was once common. Since colonisation, Mauritius has undergone massive habitat destruction so that only 3% of native forest remains. In addition, introduced macaques, mongoose, rats and feral cats predate nests and adult pigeons, and invasive plants reduce the suitability of surviving forest for pigeon breeding and foraging. The island also suffers periodic cyclones which cause further degradation to the forest.

When Gerald Durrell first visited the island in 1976, only 20 to 30 pink pigeons survived in the wild. They were confined to the remaining forested regions in the Black River Gorges, the Savanne Mountains and Bel Ombre. It declined further to only 10 wild individuals in 1990.

A captive breeding programme was established in 1976 at the Gerald Durrell Endemic Wildlife Sanctuary in Mauritius. By 1984, sufficient birds were available for a trial release and in 1987, releases into areas of native forest commenced over the years resulting in a population of free-living pink pigeons.

The free-living population has reached 400 individuals and struggles to surpass this threshold. By setting up further subpopulations the aim is for the population to push closer to the 600 free-living Pink Pigeon target population size.

In 1977, the breeding programme expanded to Jersey. Offspring from Jersey were distributed to other institutions and in 1992 the Pink Pigeon EEP was approved, then one of only 19 bird EEPs. At the end of January 1992, the EEP comprised 93 birds, an increase of 26 over the first year.

In 1982, 16 birds were also sent from Mauritius to the U.S., where a Species Survival Plan (SSP) was established and grew to 90 pigeons by 1998.

Pink Pigeons can prove challenging to breed and institutions sometimes struggle to produce offspring at all. Problems can be overcome with the correct husbandry and a colony of 'foster doves' which can aid with rearing the squabs. Greater success is achieved when institutions can hold more than one pair so that there is opportunity to exchange birds if, as commonly encountered, birds are not compatible.

Population numbers, both here in Europe and the U.S., are not currently at their peak, and haven't been for some time, so a more intensive management evaluation and strategy is currently underway. In March 2014, the Mauritius Pink Pigeon EEP held a masterplanning meeting at the Durrell Wildlife Conservation Trust. The EEP Coordinator, Species Committee, EAZA Population Biologist and other advisors participated in assessing the demographic and genetic status of the EEP population and how it relates to the free-living population in Mauritius.

As of March, the EEP population consisted of 53 individuals (30 males, 22 females, and 1 unknown sex) at 13 institutions. Ten of these 53 individuals are currently at AZA (Association of Zoos and Aquariums in North America) institutions, but will soon transfer to EAZA institutions, after AZA made the tough decision to phase out this species. Two breeding groups will remain at San Diego Wild Animal Park, who plan to join the EEP to work in close cooperation with this ongoing recovery programme.

The EEP Species Committee determined that the Mauritius Pink Pigeon EEP will uphold a conservation role in EAZA by amongst others maintaining a demographically and genetically stable and behaviorally competent assurance EEP population for reintroduction to the free-living population in Mauritius and functioning as an ambassador and fulfilling an unique conservation education story (e.g., island species, almost extinct, reintroductions, etc.).

Due to the small size of this population, breeding for

demographic reasons is a high priority. The EEP will increase reproduction to meet demographic needs, while at the same time attempting to prioritize breeding among the most genetically valuable animals (i.e., those with the lowest mean kinship and from under-represented founder lineages) in order to maximize the genetic potential in the population.

The Mauritius Pink Pigeon EEP pedigree is 95% known, but increases to 100% after pedigree assumptions. The EEP population is descended from 19 founders with no additional potential founders remaining in the population. The gene diversity is 88.44%.

Currently Kent University, UK is working on a molecular genetic assessment of the EEP population and comparison with the free-living population. Preliminary results indicate unique alleles found in the EEP population that are no longer found in the free-living population. Based on their final results, we will re-evaluate if certain lineages should be prioritized for reintroducing into the free-living population.

With such a small population, we initially need to concentrate reproduction by holding more breeding pairs at fewer institutions that agree to a five-year commitment of holding three to five breeding pairs with additional backup breeding males at either their institution or a geographically close institution. These core breeding institutions will initially hold one to five breeding pairs along with a foster colony for rearing eggs and squabs. However, as the population size increases, more institutions will be needed.

To grow the population to the EEP Species Committee's recommended target size of 100 individuals in the next five years, at a rate of 13% growth ($\lambda = 1.13$), the population needs to produce approximately 21 to 30 hatches per year. To compare these projections with the past five years, the annual number of hatches has ranged from 6 to 31 per year, so these goals may be a little high, but could be realistic with institutions focusing more on breeding all reproductively mature females. There are currently only 20 reproductively mature females and many of them are currently not with a male or need to be transferred themselves (some from AZA), so reproduction in this first year may be low while there is little room for reproductive failure in the future.

To fulfill the role of integrating the EEP and free-living Mauritius populations, five pigeons from the EEP population are recommended to transfer to the Gerald Durrell Endemic Wildlife Sanctuary, Mauritius. The current goal is to set up 10 breeding pairs in order to reintroduce offspring to the free-living population with the aim of growing to 600 birds. In the future, pigeons will also be transferred from Mauritius

to the EEP population to maintain the link between these two populations.

The EEP population will be re-evaluated at the next long-term management plan in approximately five years. Once the free-living Mauritius population has been determined to be stable, the EEP population role and goals will also be re-evaluated.

PARROT

TAG Chair: Roger Wilkinson, (Chester Zoo, Chester, United Kingdom, resigned in September 2013); Simon Bruslund, (Heidelberg Zoo, Heidelberg, Germany, since 2014)

TAG Vice Chair: Sandra Molloy, Dublin Zoo, Dublin, Ireland (since 2014)

New Parrot TAG structure

The years 2013 and 2014 saw many changes in the Parrot TAG. Roger Wilkinson stepped down as TAG Chair at the Parrot TAG meeting in Edinburgh in September 2013. Roger Chaired the Parrot TAG for 21 years and all involved are grateful for his commitment and hard work during this time. In 2014 Simon Bruslund became the TAG Chair and Sandra Molloy became the TAG Vice Chair. Bernd Marcordes (Cologne Zoo) stepped down in 2014 as sub-group leader (Old World parrots) to concentrate on the Waterfowl TAG. The new structure divides the workload between the two Chairs, the advisors and all the programme holders who will be responding to requests about the species they champion.

The number of Parrot TAG advisors who can assist in specialist areas was expanded – they are as follows:



VINACEOUS-BREASTED AMAZON AT THE LYMINGTON FOUNDATION, BRAZIL © SIMON BRUSLUND (HEIDELBERG ZOO)

ROLE	NAME	INSTITUTION
Nutrition Behaviour	Dr. Andrea Fidgett	Chester Zoo, United Kingdom
	Barbara Heidenreich	GoodBird Inc. USA
Committee liaison	Graeme Dick	EAZA Animal Training
		Al Ain, United Arab Emirates
Veterinary	Dr. Andrew Greenwood	International Zoo
		Veterinary Group, United Kingdom
Veterinary and reproduction Genetics and populations Research	Dr. Michael Lierz	Giessen University, Germany
	Kristine Schad	EAZA Office, the Netherlands
	Dr. Stuart Marsden	Manchester University United Kingdom
Conservation	René Wüst	ZGAP (Zoological Society for the Conservation of Species and Populations), Germany
AZA Parrot TAG	Joe Barkowski	Tulsa Zoo, USA

The Parrot TAG also plans on building stronger links with the AZA (Association of Zoos and Aquaria in the USA) and other regions. Unfortunately there is currently no IUCN specialist group for Psittacines but the EAZA Parrot TAG has close ties to BirdLife and to the International Ornithologists Union (IOU) Parrot Research Coordination Committee.

Parrot TAG mission statement

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

Regional Collection Plan

One of the first tasks addressed by Simon Bruslund as TAG Chair, was the production of the third Regional Collection Plan (RCP) for the Parrot TAG. The new RCP proposes 79 taxa to be managed at either an EEP, ESB or MON level – 68 are of conservation concern. It is important to note that the IUCN have suggested breeding programmes be established for a number of parrot taxa and it is important that EAZA responds to this request. Due to space limitations, space surveys are planned for amazons, macaws and Lorius species to focus efforts on more threatened species. Currently the Parrot TAG is actively seeking volunteers to help manage the programmes and the final copy of the RCP will be published in 2015.



CITRON-CRESTED COCKATOO ON SUMBA. © THOMAS ARNDT (ZGAP)

Loro Parque

Loro Parque is the largest holder of parrots in Europe. For several years, EAZA and Loro Parque had been in discussion with how these parrots were managed in relation to EAZA breeding programmes. At the mid-year meeting in Alphen in June 2014, it was announced that EAZA is to treat Loro Parque as two separate entities. Loro Parque Zoo is a member of EAZA so therefore their birds participate in EAZA breeding programmes but Loro Parque Foundation, given this is a separate legal entity, is not a member and their birds will no longer be participating in EAZA breeding programmes. Unfortunately, a large number of birds were lost from EAZA breeding programmes as most parrots are owned by Loro Parque Foundation (LPF). However, it is important to note that Loro Parque Foundation is still an important partner in parrot conservation.

Parrot TAG logo

A logo for the Parrot TAG has been adopted. It consists of many circles coming together (symbolic of a TAG) along with prominent parrot characteristics such as vivid colours, hooked bill and adapted tongue.



NEW PARROT TAG LOGO. DESIGNED BY SIMON BRUSLUND, HEIDELBERG ZOO

Conservation and Research

Nearly one third of parrots species are threatened with extinction. One of the Parrot TAG's goals is to play an important role in parrot conservation. Below are some examples of the conservation and research projects and priorities supported by the Parrot TAG in 2013/2014.

Yellow-crested cockatoos (*Cacatua sulphurea*) - Critically endangered (CR)

Research into accurately identifying subspecies and potential hybrids using genetic markers.

Research on Sumba, Indonesia investigating the breeding ecology of *C.s. citrinocristata*

Philippine cockatoo (*Cacatua haematuropygia*) - CR

Support for the ongoing *in situ* conservation project in the Philippines run by the Katala Foundation.

Mitchells lorikeet (*Trichoglossus forsteni mitchellii*) – Endangered (EN)

Establishing a genetically pure *ex situ* population with the help of genetic analysis being conducted at Heidelberg University and Newquay College.

Red and Blue lorikeet (*Eos histrio*) - EN

There is a need to establish a viable *ex situ* population and develop husbandry management, with particular attention on nutritional requirements.

Swift Parrot (*Lathamus discolor*) - EN

A mutation and disease free *ex situ* population needs to be established.

Grey-breasted Parakeet (*Pyrrhura griseipectus*) – CR

Support for the Brazilian organisation “Aquasis” which runs awareness campaigns in the species distribution area, provides artificial nest boxes and monitors the birds.

Blue-throated Macaw (*Ara glaucogularis*) - CR
Support for *in situ* projects through the BirdLife Partner of Bolivia “Armonia” and with the World Parrot Trust.

Vinaceous-breasted amazon (*Amazona vinacea*) - EN
A viable *ex situ* population needs to be established.

Support for the organisation “Instituto Espaço Silvestre” (Brazil) who is re-introducing confiscated birds into safer areas.

HORNBILL

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

TAG Vice Chair: Roger Wilkinson (Chester Zoo, Chester, United Kingdom; retired in April 2014); Joost Lammers (Vogelpark Avifaune, Alphen a/d Rhijn, The Netherlands; since April 2014)

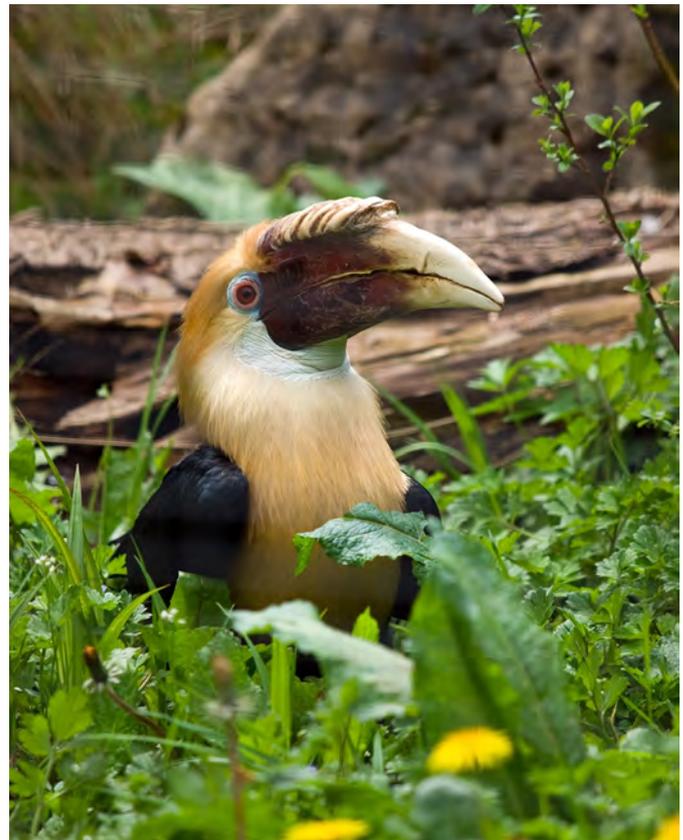
The (draft) mission of the EAZA Hornbill TAG is to:

- coordinate EAZA's captive breeding and management efforts for hornbills, ensuring that these hornbill populations fulfil the conservation, education, research and exhibition roles that have been assigned to them;
- strive for the highest standards in welfare and professional management hornbills living in EAZA zoos;
- establish priorities for conservation and research for species included in the collection plan;
- encourage and coordinate participation in *in situ* conservation activities; and
- promote cooperation between EAZA members and others with similar hornbill related missions.

Organization

Roger Wilkinson of Chester Zoo retired from his position as Vice Chair of the TAG. Joost Lammers of Vogelpark Avifauna (Alphen, The Netherlands) was appointed as new Vice Chair of the TAG in April 2014. He will focus on conservation breeding issues and thus be the main focal point for the EEPs and ESBs under the Hornbill TAG.

Koen Brouwer was re-nominated as TAG Chair in June 2014. Attica Zoological Park (Athens, Greece) kindly offered to sponsor the Chairman and thus hosts the EAZA Hornbill TAG. The Chair will focus on international relationships and conservation.



BUCEROS BICORNIS © ZLIN LESNA

Breeding program developments 2013/2014

An evaluation of the Visayan tarictic hornbill (*Penelopides panini*) EEP took place in 2013/14. This EEP was considered to be functioning well.

Several of the managed programs, e.g. the Malayan black hornbill ESB and Von der Decken's hornbill ESB, would welcome additional zoos to be able to progress, whereas other programs such as the Great hornbill EEP currently do not have any potential breeding pairs surplus. The Papuan and Wreathed hornbill ESBs, as well as some other programs, are dealing with an unbalanced sex-ratio, and thus a shortage of hornbills of one or the other sex. The Panay tarictic hornbill program welcomes new potential holders, but also needs new birds from the *ex situ* programmes in the Philippines to expand the genetic basis of the EEP, and thus to be able to create new, unrelated potential breeding pairs. The Wrinkled hornbill and Rhinoceros hornbill EEPs are making an effort to increase the number of pairs successful holders are keeping, in an effort to benefit from the experience in such zoos.

Regional Collection Plan

The Vice Chair worked together with Willemijn van Duinen, a student of InHolland Delft, in preparing the first draft of the RCP for hornbills in the EAZA region. Data compiled

through a survey conducted by Zagreb Zoo were useful and included in the exercise. Some 993 hornbills of 29 species are kept in the EAZA zoos. Sixty-one hornbill taxa were evaluated resulting in the following recommendations: five species “EEP”, six species “ESB”, four species “Monitor TAG”, six species “Research”, 11 species “Replace” and 29 species “Do not obtain”. The draft collection plan will be discussed within the TAG and with dedicated EAZA members and finalized in 2015.

Research

Several research projects were conducted over the past two years, including a *Buceros bicornis* and *B. rhinoceros* nutrition project and a *B. rhinoceros* housing survey.

Husbandry Guidelines

An updated version of the current EAZA Hornbill Management and Husbandry Guidelines (2002) is still in preparation.

Meetings and important outcomes

The TAG met three times over the past two years, in Edinburgh on 25 September 2013, in Alphen on 4 June 2014 and in Budapest on 24 September 2014. The meeting in Alphen was conducted together with the AZA Coraciiformes TAG and focused on how to improve cooperation between the North American and European regions. As one of the outcomes of the meeting it was concluded that a working group (both AZA/EAZA TAG Chairs, coordinators/programme leaders) will draft a plan on the future management approach of both *Buceros* species.

The 6th International Hornbill Conference took place in Manila, Philippines from 24 to 27 April 2013. The EAZA Hornbill TAG was represented by Nigel Simpson of Bristol Zoo.

Conservation activities

TAG members remain active in supporting *in situ* conservation of Philippine hornbills and through the Bucorvus TAG there is also cooperation with the Mabulu Ground hornbill project in southern Africa.

EAZA members ZooParc de Beauval and Chester Zoo (and AZA member Woodland Park Zoo) are involved in a trial artificial nest box project run by HUTAN in the Kinabatangan River area of Sabah in Malaysia. Eight species of hornbills are found here and surveys have sadly illustrated that there is a shortage of suitable nesting trees for the hornbills.

The Hornbill TAG is also actively encouraging EAZA zoos keeping hornbills to “adopt a hornbill nest” of *Rhyticeros undulatus*, *Anthracoceros albirostris*, *B. bicornis*, *B. rhinoceros*, *Rhinoplax vigil*, and/or *Aceros nipalensis* in either Thailand or India as good long-term projects are active in both countries. Adoption of a nest only costs approximately €125 and thus it will only cost an EAZA zoo €125 to assist in successfully fledging a hornbill in the wild. All zoos that keep hornbills have been requested by the EAZA Hornbill TAG to get involved in either the Thailand or India project, or both.

In memoriam

William L.R. Oliver sadly passed away on 10 September 2014. William was well known for his tremendous efforts in conserving wildlife, with emphasis on hornbills, in The Philippines. He was probably the only person in the world who could say that he single handedly saved several hornbill species from extinction. He will be greatly missed and hopefully his impressive work will be continued by his successors.

PASSERIFORMES

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

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

TAG meetings 2013/2014

The TAG met during the Mid-year Bird TAG meetings as well as during annual EAZA conferences. The sub-group of the TAG, Threatened Songbirds of Asia Working Group (TSAWG), also held closed sessions during the annual conferences. Due to the volume of the group’s work, the main meetings of TSAWG were separate and occupied two full days of discussion. They were held in June in Köln in 2013 and Whipsnade in 2014.

Threatened Songbirds of Asia Working Group

The Bali starling (*Leucopsar rothschildi*) EEP, well established when the Passeriformes TAG came into being over 20 years ago continues to be at the heart of the TAG’s and TSAWG’s activities. If not for the release of captive bred birds this species would most likely have been extirpated from the wild by relentless poaching. In 2012 20 birds were sent to Bali from the EEP. Several EAZA institutions



BLACK AND WHITE LAUGHINGTRUSH IN BIRD MARKET © FLORIAN RICHTER

support *in situ* conservation efforts. The situation of the Bali Starling epitomises what is a gathering threat to many Asian songbird species; excessive trapping for caged birds is wiping out whole songbird populations and for a growing list of species threatening their existence. This presents a major conservation challenge and what makes the task for TSAWG so vitally important. For a number of these species if captive programmes are not established, the future for the entire species is very bleak.

Cikananga Conservation Breeding Centre (CCBC)

The pressure on songbirds in Java is particularly severe and as a matter of urgency efforts are underway to set up captive populations of a number of endemic species. The Cikananga Conservation Breeding Centre is at the forefront of this and their work is supported by a number of EAZA institutions, either directly or by channelling funds through ZGAP. CCBC maintains populations of the west Javan sub-species of black-winged starling (*Sturnus melanopterus melanopterus*), Javan green magpie (*Cissa thalassina*), rufus-fronted laughingthrush (*Garrulax rufifrons*) and black-and-white laughingthrush (*Garrulax bicolor*), the latter a Sumatran endemic and for which there is an ESB programme. CCBC suffered a major setback in 2014 when during a break in a large number of black-winged starlings and a few other birds were stolen. Security has since been improved with the erection of a

substantial perimeter fence, additional night watchmen and guard dogs. The event however brought home the risks associated with keeping all the birds at one centre and highlights the need to disperse the stock; some birds have now been transferred to Taman Safari in Java and arrangements are being made to move birds both to Europe and Jurong Bird Park in Singapore. An ESB already exists for black-and white laughingthrush, and in readiness for the arrival of Javan green magpies an EEP was approved for this species in 2014 with Andrew Owen at Chester Zoo as its co-ordinator.

Reintroduction of black-winged starling is already being undertaken as one of the activities of CCBC. Anais Tritto, who manages this project, gave a presentation on this during the conference in Budapest. She described the progress with two releases one at Pongkor and the other at Rawadanau, both in west Java.

Blue-crowned Laughingthrush GMSP

The Global Management Species Programme (GMSP) for the blue-crowned laughingthrush (*Dryonastes courtoisi*) is developing well. This Chinese endemic is another Asian species where trapping has had an impact. This species was known to occur in two widely disjunct populations. Only one can now be located and it is feared that the other may no longer exist having fallen victim to capture for the bird trade. It is likely that the birds that founded the captive population

in Europe came from this lost population and as a possible sub-species may represent the last of a now extinct in the wild taxa.

In both 2013 and 2014 master planning meetings for the GSMP have been held in Chester and Jersey respectively. Both meetings have resulted in the production of management plans outlining transfer, pairing and breeding recommendations. At the end of 2014 there were 218 living individuals in the GSMP of which 180 are included in the ESB. The plan is to grow the EAZA population to 240 over the next few years. More participants will be required if this is to be achieved. Research into the effect, as a cause of mortality, of *Atoxoplasma* on the population continues. A result of which has been the identification of a new species and subsequent paper published on it, of an assumed host specific coccidian *Isoospora courtoisi*.

EAZA species programmes

The ESB for Omei Shan liocichla (*Liocichla omeiensis*), another, although less so threatened Chinese endemic; has a new studbook keeper with Chris Green taking over from Nigel Hewston in 2014. The programme remains with Cotswold Wildlife Park.

The ESB for hooded pitta (*Pitta sordida*) continues to decline, although some breeding occurred in 2014 which gives some hope. It now however is represented in such low numbers and distributed in a hand-full of institutions that its chances of persisting for much longer are slim. Continuing with the programme or not requires serious consideration.

In contrast some species are doing well the chestnut-backed thrush (*Zoothera doherthy*) ESB co-ordinated by Jamie Graham at Whipsnade is in desperate need of more holders; the species is breeding very successfully and more spaces need to be available to continue the required growth of the programme.

Regional Collection Plan

South American species do not feature prominently in the TAGs activities but an excellent monitoring report on the Mexican green jay (*Cyanocorax yuncas*), by Miguel Sierra and Rosana Gallago of Parc Zoologic de Barcelona, was produced during 2014. Barcelona is one of very few European zoos breeding this non-threatened but attractive species

The need to revise the Regional Collection Plan becomes ever more pressing and the TAG will soon be working on one to take it through to 2020.

Recent Publications

Jamriska, J. Barbon, A.R. and Modry, D. (2013). A new species of *Isoospora* Schneider, 1881 (Apicomplexa : Eimeriidae) from the Blue-crowned Laughingthrush *Dryonastes courtoisi* (Passeriformes: Timiidae). *Acta Protozoologica* 52: 99 – 103.

MONOTREME & MARSUPIAL

The Monotreme & Marsupial TAG was mostly involved in organizational matters in 2013, but in 2014 also an important document was finished for review and adoption by the TAG. TAG meetings were held in both Edinburgh and Budapest during the EAZA meetings, additionally a joint meeting with representatives from AZA was held in Edinburgh concerning the joint management of koalas (*Phascolarctos cinereus*) belonging to San Diego. During the Alphen Joint TAG Chairs meeting in 2014 some senior members met with colleagues from other regions, though no formal mid-year meetings were scheduled due to too many contrasting commitments of the membership.

Programme coordination and evaluation

Evaluations were scheduled for the Brush-tailed bettong EEP in 2014, and for the Goodfellow's tree kangaroo EEP in 2013. Matschie's tree kangaroo (*Dendrolagus matschiei*) was also scheduled for 2013, however in accordance with the Global Species Management Plan this was downgraded to MON-P (see below) thus the evaluation was cancelled.

Quick Population Assessments (QPAs) were completed for all macropod ESB species in preparation for the RCP (see below).

The TAG experienced some changes in personnel.

Dr Piotr Cwiertnia, Poznan ZOO, took over the Kowari ESB.



EASTERN QUOLL (*DASYURUS VIVERRINUS*), LEIPZIG ZOO



KOALA, ZOO DUISBURG

Fabian Schmidt, Leipzig ZOO, took over the Quoll MON-P.

The programs for Tasmanian devil (*Sarcophilus harrisii*) (Flemming Nielsen, EEP, Copenhagen ZOO) and Koala (Achim Winkler, ESB, Duisburg ZOO) were formalized in preparation for scheduled import/exchange activities from Australia.

Following the establishment of a tree kangaroo GSMP, a division of responsibilities between continents was decided with Europe looking after *D. goodfellowi* and North America focusing on *D. matschiei*. This led to a downgrade of the Matschie's tree kangaroo program to MON-P, with Dr W Dressen, Krefeld, still monitoring this, his former EEP.

Research and TAG documents

Drafts for Best Practice Guidelines for most species being monitored or managed were collated and prepared for update by the coordinators through a trainee in Udo Gansloßer's group, Annie Steudner. This process is still ongoing and hopefully will be finished in 2016.

The background document and draft version for the new RCP was prepared by Miriam Mischke, now Haase, from Würzburg University. The draft version has been circulated to coordinators and core group members and a vote to adopt the plan is scheduled for the 2015 meeting at Wrocław.

Conservation

No coordinated conservation activities through the TAG have been started, the main reason being that most of our target species live in a first world country with no need for financial or organizational support from Europe.

However, both the Goodfellow's tree kangaroo EEP and the koala holders support regional projects, the latter through the activities at San Diego Zoo which collects research contributions as a mandatory part of the loan agreements.

Husbandry and breeding

Some successes in breeding are worth mentioning:

- The birth of the first wombat in Europe since the 1970s, at Budapest
- The first F2 births of Eastern quoll (*Dasyurus viverrinus*) in Leipzig and, later, in Paris, the latter even becoming successfully adapted to the European light-dark-cycle
- The birth of a Short-beaked echidna (*Tachyglossus aculeatus*) at Rostock
- The successful import of Brush-tailed bettong (*Bettongia ogilbyi*) males from AZA institutions and their distribution among the EEP members.

The TAG Chair thanks the TAG members for their contributions, in particular the co-Chairs Achim Winkler and Flemming Nielsen, who also took over a lot of diplomatic responsibilities in connection with international exchange procedures.

PROSIMIAN

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

Tag Vice Chair: Delphine Roulet (Paris Zoo, Paris, France)

TAG meetings 2013/2014

The Prosimian TAG followed the decision taken some years ago to focus on special topics at the spring meeting.

It became evident at the 2012 "in situ conservation workshop" that conservation includes much "education and communication", and so "Education and Communication" became the topic of the 2013 spring meeting hosted by Bristol Zoo. Approximately 30 participants gave presentations on formal educational and fundraising activities in zoos, as well as on raising awareness and capacity building in Madagascar and other countries of origin of prosimians. The variety of topics and diversity of participants was inspiring, including scientists from universities and representatives of conservation organisations. In summing up, the TAG saw a need for a TAG-position of an "Educational Manager" who should work on compiling educational resources for use in zoos and also for in situ conservation activities. However, in spite of advertising, it has not been possible to recruit a person to fill this position so far.

Update on breeding programmes 2013/2014

EAZA and a number of zoos and individuals supported



PROLEMUR VS. PROPITHECUS – A BENEFIT FOOTBALL-MATCH OF TAG-MEETING PARTICIPANTS © F.G. GRANDIN / MNHN



JOINT MEETING: ACHIM JOHANN / EAZA PROSIMIAN TAG CHAIR, CHRISTIE EDDIE / AZA PROSIMIAN TAG CHAIR, GINA FERRIE / AZA PROSIMIAN TAG VICE CHAIR

the participation of a representative from the Ministry for Environment of Madagascar (MEF) and the Malagasy primatological research and conservation association (GERP) financially and with considerable personal involvement. The contacts with Madagascar have become continuously closer over the years, thanks to the tremendous efforts of the TAG's Vice Chair Delphine Rouillet and the support of Paris Zoo. It is much appreciated that the MEF is taking a more active role, and asked for advice and technical support when working on basic structures for cooperation among existing lemur-holding facilities in Madagascar. MEF also supports the exchange of individuals from a range of lemur species between EAZA/EEPs and *ex situ* facilities in Madagascar. In this way the Crowned Sifaka EEP is developing towards a meta-population programme. The Greater bamboo lemur EEP successfully exchanged animals between European zoos and Parc Ivoloina, Madagascar. Preparations for similar co-operations for mongoose and red ruffed lemurs are underway.

Without doubt all EEP- and ESB-coordinators are doing a good job. This was confirmed by the recent EEP-evaluations for the Black Lemur, Sclater's Lemur, Greater Bamboo Lemur, and Crowned Sifaka EEPs. However, most of the coordinators are pushing the limits of their time-budgets to complete all the tasks involved with running an EEP or ESB.

Challenges

Although most, if not all, EEPs and ESBs are being well coordinated, there is a need for ongoing efforts to keep these programmes on track. A long term commitment is needed to maintain the quality of the breeding programmes as frequent changes of coordinator can have a negative impact. It is highly recommended that any new applicants for EEP coordinator positions should only take up the coordinator role when they can make a long term commitment to work on an EEP.

The TAG Chair is very grateful to all TAG members for their dedicated work and input.

When asking the programme-coordinators which kind of support would be most needed they asked unanimously for help to work on husbandry guidelines. There cannot be anything like "best practice guidelines for prosimians", as this group of primates is so diverse. Most, if not all, taxa require specialist care, particularly regarding the management of nutrition and social groups.

A survey on pygmy slow loris (*Nycticebus pygmaeus*) nutrition revealed that information about the natural foraging behaviours of these nocturnal prosimians has still not reached zoos, curators and keepers. There is urgent need for improvement, and feeding recommendations for this nutritional specialist need to be compiled and distributed among holders.

Another field of work under the "husbandry" headline is "walk-through enclosures" for lemurs. These immersive exhibits are very popular and can be very effective in connecting zoo visitors with the animals, and in doing so raising awareness (and funds) for conservation. In addition, walk through enclosures can have a positive impact on lemur welfare, because they are typically more spacious and naturalistic which allows lemurs to be managed in close-to-natural social groups. Last but not least, these enclosures are home to a huge percentage of the populations of some managed species - particularly ruffed lemurs, ring-tailed lemurs (*Lemur catta*) and also Red-bellied lemurs (*Eulemur rubriventer*). The TAG is therefore supportive to such "walk-through exhibits" - if they are designed, built, and run in a responsible and professional manner. To assist zoos in creating effective exhibits, the TAG will compile a manual on "walk-through exhibits for lemurs".

TAG meetings 2013/2014

The TAG's spring meeting in 2014 focused on husbandry in all aspects. This topic was chosen because there were husbandry issues to be discussed with a number of species, and a need to review practical population-management tools like single-sex-groups and hormonal treatments.

Paris Zoo hosted the meeting, which was very well attended with 50 participants. Again, invitees from MEF and GERP participated, as did colleagues from San Diego Zoo who were representing the AZA Prosimian TAG.

Prior to the meeting, a "Prolemur vs. Propithecus" football match took place. The original idea of this activity was to raise funds for *in situ* conservation projects. In practice, it was more effective as a tool of "team-building" among the participants of the meeting. It also raised awareness of lemur conservation and also the existence and the work of the Prosimian TAG.

The "Joint TAG Chairs meeting" in Alphen in June meant the start for enhanced inter-regional cooperation between the EAZA and AZA Prosimian TAGs. This cooperation has already proved to be very effective and long-lasting. During the first meeting, the regional TAG Chairs agreed on species under consideration for global management, namely the aye-aye and Sclater's lemur (known as blue-eyed black lemur in the AZA TAG). Having said "global", it is essential that Madagascar, as the country of origin of both species, must also be included in the programmes' strategy.

For other taxa, occasional exchange of animals was regarded as favourable to improve the quality of the *ex situ* populations of the regional programmes. The exchange of expertise and knowledge was also regarded as important. The TAG Chairs expressed mutual "standing invitations" to participate in the regional TAG meetings. Following this invitation, the EAZA TAG Chair participated in the AZA TAG meeting in Cleveland in September 2014, where his comprehensive overview on the EAZA Prosimian TAG was very well received. It can be stated that the connections between the EAZA and the AZA Prosimian TAGs are now well-established and communication is ongoing.

CALLITRICHID

TAG Chair: Eric Bairrão Ruivo (ZooParc de Beauval, Beauval, France)

TAG Vice Chairs: Dominic Wormell (Durrell Wildlife Conservation Trust, Jersey, Channel Islands); Miranda Stevenson (Bristol Zoo



WHITE-FOOTED TAMARIN © PIERRE GIIBERT

Gardens, Bristol, United Kingdom)

2013 and 2014 were busy and productive years for the TAG. Two meetings were held each year, one at the EAZA meeting in September and the other a mid-year meeting. In 2014 this was combined with the Joint TAG Regional Meeting in Alphen, which stimulated the need for more collaboration between regions.

Programme coordination and evaluation

The following programme changes took place: Goeldi's monkey *Callimico goeldi*, Susan O'Brien, Dublin Zoo; cotton-top tamarin *Saguinus oedipus*, Miranda Stevenson, with institutional support from Bristol Zoo; Red-bellied tamarin, *Saguinus labiatus*, Konstantin Ruske, Magdeburg Zoo; and monitoring programme for the black-tufted marmoset *Callithrix penicillata*, Franck Haelewyn, Le Reynou Zoo. In 2014 Miranda Stevenson became co Vice Chair of the TAG and also took over the communication role. The TAG thanks the outgoing members; Tracey Moore (ex Banham), Pierre Grothmann (ex Magdeburg), Bernard Holdijk (ex Wissel), Lorna Hughes (Edinburgh), and Rikke Kruse Nielsen (Aalborg) for all their tireless work.

Seven programme evaluations: white-fronted marmoset (*Callithrix geoffroyi*); golden-headed lion tamarin (*Leontopithecus chrysomelas*); black lion tamarin (*Leontopithecus chrysopygus*); golden lion tamarin (*Leontopithecus rosalia*); emperor tamarin (*Saguinus imperator*); Goeldi's monkey (*Callimico goeldi*); and pied tamarin (*Saguinus bicolor*) were carried out and completed. The TAG was the first to be evaluated and received the highest score of 'good'. Priority areas of work were identified as a result of this evaluation.

During 2013 a questionnaire was sent out to institutions who attend the open meetings to get their opinions of how the

meetings are run and the content covered. The information gathered has also helped to determine the agendas for future meetings.

Research and TAG-produced documents

A preliminary space survey was completed which resulted in the decision to carry out a more detailed one in 2015, as it was felt that more information was required. Documents produced included: research on an emerging parasite, *Parastrongylus dujardina* that is affecting callitrichids; social management of callitrichid groups; housing of evicted and single sex individuals; formation of single sex groups; environmental enrichment; and list of toxic plants for callitrichids.

The in-depth husbandry guidelines were translated so that they are now available in English, Spanish and Portuguese. Many thanks to our colleagues in South America and to Barcelona Zoo for helping with all of this. A start was also made on a body weight project, relating this to diet. An animal training guide is in production, scheduled for completion in 2015.

In 2014 it was decided to incorporate all new relevant documents in the revised Husbandry Guidelines which would be in the new format of Best Practice Guidelines, aiming for publication in 2015.

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

From December 2014 the TAG started to produce a newsletter, circulated by email, to inform holders of the work of the TAG, and other areas of interest. This is being produced approximately every six weeks.

A TAG statement on The Keeping of Callitrichids by Private Individuals was prepared and is expected to have full approval early in 2015.

Conservation

A major conservation focus for the TAG is the white-footed tamarin (*Saguinus leucopus*). The coordinator of the programme in Colombia attended the EAZA Annual Conference in 2013. The TAG Chair visited the project in 2014 and the programme progresses with an agreement to purchase more land, and also an agreement to manage an additional population in a private reserve. There have also been major improvements in the main rescue centre and a second generation has been bred for the first time in the zoos. A tripartite agreement has been signed between the

programme, ACOPAZOA and the National Parks Board of Colombia.

The TAG strengthened its links with the cotton-top tamarin field conservation work in Colombia, Proyecto Titi, and the number of zoos supporting the programme continued to increase. The new census methodology development for *Saguinus oedipus* could be used for *S. leucopus*.

Kristin Leus and Dominic Wormell attended a lion tamarin workshop in Sao Paulo zoo, and then Dominic went on to help coordinate a conservation and captive husbandry workshop in the Rio Primate Centre in April 2014. During this and subsequent meetings there evolved a renewed impetus to collaborate on captive population management and *in situ* support. The Callitrichid TAG continued to work very closely with its Brazilian counterparts and authorities to try to get to a workable plan for the future.

Particularly pressing is the situation with black lion tamarins (*Leontopithecus chrysopygus*), which are on the brink of disappearing from European collections altogether and require urgent action to create biological corridors in Brazil. The TAG continued its support of the pied tamarin (*Saguinus bicolor*), and the National Action Plan for the species in Brazil.

An additional species was given support by the TAG. The buffy-tufted-ear marmoset (*Callithrix aurita*). This species is endemic to a small area within the Brazilian Atlantic Forest, where it is threatened by hybridisation with introduced common marmosets.

Major achievement 2013/2014

The TAG's main focus was to produce the second Regional Collection Plan (RCP), following the first edition in 2006. We set ourselves the task of producing a comprehensive document that captured the latest thinking from those working on callitrichid conservation in the wild, along with the status of and goals for callitrichids in captivity.

The RCP represents a huge amount of information gathering by the many contributors. Every species is covered and categorised as threatened or non-threatened. Using a decision tree process each species is assigned a management category and primary and secondary roles. This is the first RCP to use the One Plan Approach.

The RCP was completed early in 2014 and will be a working document that will guide institutions, the current task being to ensure its implementation. It will be evaluated and updated on an annual basis. An article on the RCP is included in edition no 88 of Zooquaria: Assessing the species: a one plan approach to collection planning.

CEBID

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

TAG Vice Chair: Kirsten Pullen, (BIAZA, London, United Kingdom)

TAG meetings 2013/2014

The Cebid TAG had its first mid-year congregation during the Joint TAG meeting in Avifauna (Alphen a/d Rijn, The Netherlands) in June 2014. It was a good and – compared to the 90 minute reporting sessions during the EAZA Conference – positively leisurely meeting, attended by the majority of Cebid EEP Coordinators and ESB Keepers, as well as by a number of colleagues from other parts of the world, including Keith Lovett, the AZA New World Monkey TAG Chair, and Amanda Embury, co-convenor of the AMSP Primate TAG. EAZA, AZA and ZAA all outlined their Regional Collection plans and there was a lively discussion about the possibilities of each region focusing on certain (sub) species. Moving remnant populations of a small number of species from one region where the species was not considered a priority to another region where it was, was part of this discussion. Spider monkeys and capuchins were frequently mentioned as both families are commonly kept in zoos throughout the world, and both families are represented by a relatively large number of taxa in zoos, with not all taxa having sustainable populations in any one region. The discussion was much helped by the survey of non-managed spider monkeys and capuchins in EAZA zoos that Tjerk ter Meulen and Emile Prins carried out during the spring of 2014.

Three months later the Cebid TAG met again in Budapest in September 2014, where a report on the Alphen meeting was presented.

Breeding programme updates 2013/2014

The number of programmes within the Cebid TAG did not change and only one programme changed hands: Peggy van den Broek of Papiliorama (Switzerland) took over the Douroucoulis ESB from Shelly Parkes of Marwell (United Kingdom). Alex Sliwa (Köln) continues to monitor the Red howlers (*Alouatta seniculus*) and Andrew Hope (Belfast) monitors the Red-backed bearded saki (*Chiropotes chiropotes*). It was also agreed that in order to phase out taxa such as *Cebus apella* and *Saimiri sciureus* of unknown origin and/or subspecies, such taxa actually required management as phasing out does not happen by itself. Alison Dowling will



DOEREOCOELIES

tackle this for *Saimiri sciureus*, while the TAG will monitor the status of *Cebus apella*. There is a small population of pure *Cebus apella apella* currently being monitored by Lucy Petrie of Edinburgh Zoo.

Areas of interest for the Cebid TAG continue to be nutrition, contraception, certain management issues (particularly regarding male groups and male introductions in spider monkeys) and population control. Taxonomy also raised its head again with a new publication on the taxonomy of sakis (A taxonomic revision of the saki monkeys *Pithecia*, by Laura Marsh), which argues in favor of splitting White-faced saki (*Pithecia pithecia*) and Golden-faced saki (*Pithecia chrysocephala*). Matthew Webb, Coordinator of the White-faced saki EEP, must investigate the possibility that the current population of White-faced sakis includes Golden-faced sakis. This may turn out to be a big job.

Other action points raised for the TAG include a mixed species survey for cebids, an updated RCP including an update of the numbers of non-managed taxa, regular contact with the North American and Australasian cebid programmes, and producing a guiding document on reducing surplus in cebid populations.

OLD WORLD MONKEY

TAG Chair: Neil Bemment (Paignton Zoo, Paignton, United Kingdom)

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

Old World Monkey TAG Mission Statement:

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

TAG meetings 2013/2014

The EAZA Old World Monkey TAG (OWMTAG) held 'closed' Core Group and 'open' sessions for all attendees at the Annual Conferences held in Edinburgh (2013) and Budapest (2014), along with a midyear meeting on 4 June, 2014 at Vogelpark Avifauna, Alphen aan den Rijn as part of the Joint TAG Meeting. Three representatives of the AZA OWMTAG were able to attend the latter namely the Chairman, Joe Knobbe (Saint Louis Zoo) and Vice Chairs, Tom Ness (Minnesota Zoo) and Rebecca Phillips (Disney Animal Kingdom), as well as Claire Ford, Senior Species Management Officer for ZAA.

In Alphen a Master-Planning Day was held for the Lion-tailed macaque and similarly one for the Mandrill in Budapest, both under the guidance of Kristine Schaad (EAZA Population Biologist). One of the aims of the meetings was to determine if there was potential for further inter-regional cooperation along the lines of that already actioned for the Golden-bellied mangabey.

Update on the breeding programmes development 2013/2014

Changes in programme manager:

- Hamlyn's owl faced monkey EEP - Fabian Schmidt (Leipzig Zoo, Germany)
- Hanuman's langur EEP - Fabian Krausse (Hannover Zoo, Germany)
- Moustached monkey ESB - Margaux Pizzo (Beauval Zoo, France)

Upgraded programmes:

- De Brazza's monkey EEP - Matt Hartley (Twycross Zoo, UK) – from ESB
- Malgorzata Pacholczyk (Lodz Zoo, Poland) to stay as ESB keeper

Downgraded programmes:

- Allen's swamp monkey ESB – to REPLACE

EEP evaluations



LEFT TO RIGHT: TJERK TER MEULEN (VICE CHAIR EAZA OWMTAG, REBECCA PHILLIPS (VICE CHAIR AZA OWMTAG) JOE KNOBBE (CHAIR AZA OWMTAG), TOM NESS (LION-TAILED MACAQUE ESB KEEPER) GINA FERRIE (CO CHAIR, AZA PROSIMIAN TAG), CHRISTIE EDDIE (AZA PROSIMIAN TAG), NEIL BEMMENT (CHAIR OWMTAG)

- all completed with either a Satisfactory or Good categorisation in 2013
- Lion-tailed macaque due in 2014
- Javan langur due in 2015

Challenges 2013/2014

The challenge for the future management of European zoo Old World monkey populations persists, namely the declining trends for many of the endangered taxa that started with only a few founders, a lack of new holders for certain taxa for which the populations need to be expanded, and a need to rationalize certain populations that have been allowed to grow largely unchecked.

The main issues for discussion in 2013/14 were those of managing 'surplus' problems, the practical management of multi-male primate populations, and potential zoonoses in OWMs. Subtopics included:

- The management tools available for OWM which live in larger groups
- How to deal with the surplus of males
- How to find solutions for overall surplus
- The management of baboons and other multi male social hierarchy species

The following were among the actions identified:

- Neil Bemment drafting article on 'breed and cull' method for managing *Papio* spp.
- Identify which European countries are not permitted by law to cull/euthanize
- Identify holders of large groups of non-managed taxa that could be REPLACED with MANAGED (EEP/ESB) taxa
- Advertise taxa in EAZA News for when there is a need for new holders

Context of past and upcoming work

Following the joint EAZA/AZA mid-year TAG meeting in 2012 and follow-up inter-regional meeting held in Alphen aan den Rijn in 2014 there has been progress in the cooperative management of our respective *ex situ* programmes.

Master-Planning Days for Lion-tailed macaque (*Macaca silenus*) and Mandrill (*Mandrillus sphinx*) have been held involving the respective EEP Coordinators namely Alex Sliwa (Koln Zoo) and Istvan Vidakovits (Budapest Zoo). Individual animals have been identified that could be of benefit to the AZA populations.

Involvement of OWMTAG in Conservation activities

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

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

Major achievements of the TAG in 2013/14

The TAG developed closer links with AZA Old World Monkey TAG with a view to greater dialogue and mutual cooperation.

The EAZA Old World Monkey Regional Collection Plan 2014 was updated. A monitoring review of *Macaca* and *vervet* monkey spp. in EAZA zoos was carried out by Tjerk ter Meulen (GaiaZoo) and various veterinary guideline documents were produced and circulated by Matt Hartley (Zoo & Wildlife Solutions Ltd.) in collaboration with the other OWMTAG vet advisors:

- General Principles of Managing SIV in Old World Primates
- Risks & Management of SIV in De Brazza's monkey
- Risks & Management of SIV in Mandrills & Drills
- Risks Associated with Managing Herpes B Virus in Macaques

All documents are available on the EAZA website. Closer links with the IUCN African and Asian Primate Specialist Groups are to be created during 2015.

GIBBON

Chair: Dr Charlotte Macdonald (Twycross Zoo, Twycross, United Kingdom)

Vice Chair: Dr Brice Lefaux (Mulhouse Zoo, Mullhouse, France)

TAG Membership

The Gibbon TAG has seen some significant changes in composition during 2013 and 2014, not least of which was the departure of our Chair Vicky Melfi. Vicky brought an abundance of passion and knowledge to the Gibbon TAG, and her leadership will be sorely missed. Charlotte Macdonald stepped up to replace Vicky in the Chair's role and Brice Lefaux ably filled the Vice Chair's position. Further changes were afoot when Chris Kibbey resigned as the EEP Coordinator of the Lar Gibbon EEP and was replaced by Lisette de Ruigh of Emmen Zoo who continued to manage the programme with diligence and clarity.

Joint TAG Meeting 2014

With a small group of just 7 members the TAG mid-year meetings, held in Amsterdam and Apenheul, were extremely productive with significant outcomes, particularly in 2014. 2014 was the Joint TAG Chairs gathering in Alphen and the Gibbon TAG was joined for our mid-year meeting by both Australian and American members of the equivalent gibbon committees. The meeting included two workshops: one on the make-up and potential viability of captive gibbon populations across the globe which come under the auspices of the various zoo associations; and the second on surplus management and how to encourage gibbon holders to prepare for, and manage, juvenile animals when they start to be ousted from their group.

The output of the first workshop is a revised draft of a Regional Collection Plan which is in the final stages of preparation and will be submitted to the EEP Committee for approval in 2015. This plan is attempting to address the issue of surplus gibbons by prioritising the breeding of certain populations over others based on a number of factors. The second workshop has resulted in a number of outputs including a flow chart to assist with decision-making regarding surplus animals, with additional guidance on managing juvenile animals within their natal group. Both of these outcomes contributed to the new Best Practice Guidelines which were written in draft format in 2014.

Population Management

The main population management issue the TAG is currently facing is a serious lack of space, for all the managed gibbon species. The large Lar and Siamang programmes are in great need, with many surplus juveniles and young adults in need of new homes. The overall problem is further compounded by non-breeding recommendations for some zoos who want



CAO VIT GIBBON © Z.CHANG, FFI

to breed in order to have infant animals in their groups. However, for this long-lived group of species, which have very small family units, continued breeding creates a problem which will affect us for the next 40 years and is not sustainable. The TAG, along with our international counterparts, discussed this at length at the Joint mid-year meeting to plan a global strategy to manage the affected species populations, so it is hoped that the RCP will help greatly in managing this problem into the future. This of course will only be achieved with the cooperation of the holders.

Conservation

The TAG continued to support the Cao-Vit gibbon project throughout 2013 and 2014. This Fauna and Flora International (FFI) endeavour was the selected gibbon conservation programme for the EAZA Ape Campaign Fund and the TAG has received regular updates at both mid-year and annual meetings. The feedback from FFI has been extremely positive, both about the link with the TAG and European zoos and also about the gibbons themselves, which have shown a slight increase in number during those years. Furthermore the cooperation between the Vietnamese and Chinese authorities working with this cross-border species has increased and resulted in collaborative actions and management. This is a very big step in the continued battle to save this critically endangered species.

Through the *Nomascus* EEPs the TAG has also linked up with Project Anoulak, which is the first long-term

conservation research program studying the largest wild population of white-cheeked gibbons in the Nakai-Nam Theun National Protected Area in central-eastern Laos. All *Nomascus* holders are kindly asked to support Project Anoulak and to view the website (<http://www.conservationlaos.com/>). The project is investigating song analysis, a comparison of survey methods, identification of habituated groups and in the future intends to carry out nutrition and feeding analysis and taxonomy work.

The busy work that has been initiated by the TAG in 2013 and 2014 will continue into 2015 and beyond and the cooperation and support of the Species Committee members and all gibbon holders is appreciated.

GREAT APE

TAG Chair: Tom de Jongh (Royal Burgers' Zoo Arnhem, The Netherlands)

Vice Chair: M^a Teresa Abelló (Barcelona Zoo, Barcelona, Spain)

Meetings

2013

The TAG met first during the midyear meeting in Hilvarenbeek and later during the EAZA annual conference in Edinburgh.



IN JUNE 2013 GORILLA FEMALE N'GAYLA IN ROYAL BURGERS' ZOO GAVE BIRTH TO GORILLA TWINS AND BECAME THE SECOND FEMALE IN A ZOO TO RAISE TWINS BY HERSELF

2014

In this year the Midyear meeting was held in combination with the Joint TAG Chairs meeting in Alphen.

The TAG met again during the EAZA Conference in Budapest

New Documents

Sample Material Agreement:

This is a document for zoos providing samples for genetic research projects. This document confirms the identity of the individual that the sample was taken from, clarifies the

ownership of the sample, the research project it is made available for, the way to deal with any leftover material (send to the Great Ape TAG Genetic Bank in Copenhagen), and the conditions for any future use of those leftovers. It aims to avoid samples being sent simultaneously to several projects with the same scientific goals and methodology.

Breeding Loan Agreement:

A special amendment to the EAZA template for breeding loan agreement for our TAG was accepted by the TAG and has since been sent to the EAZA Executive Office to be discussed in the office and by the EEP Committee. The amendment says

that all offspring of the individual on loan shall be owned by the borrower.

Behavioural Information Sheet:

This document should facilitate the exchange of information on specific individuals' behaviour and veterinary aspects of great apes that have received a transfer recommendation.

Veterinary

The main focus has been on various frequent causes of death such as the role of stress as an indirect cause, cardiovascular diseases and chronic upper respiratory disease.

Data and scans from cardiovascular investigations performed by various parties, such as the International Primate Heart Project, based in Cardiff, are being collected and analysed by the Ape Heart Project, in close cooperation with the Great Ape Heart Project in AZA. The necropsies of all species for the last ten years are also being collected and analysed.

An agreement with the International Primate Heart Project has been achieved for good cooperation with that party. The agreement resulted in a draft MoU that is still under review with EAZA.

Other points of attention were the rapidly spreading fox tape worm *Echinococcus multilocularis* for which humans and apes are accidental hosts, as well as a safety distance between visitors and apes.

Conservation

Thanks to the EAZA Ape Campaign Fund eleven additional *in situ* projects have received our financial support during these two years.

The remaining money has been reserved for emergency support.

The Fund already gave emergency support to Tacugama Chimpanzee Sanctuary related to the consequences of the Ebola crisis.

EAZA became a partner of GRASP (Great Apes Survival Partnership), with the Great Ape TAG Chair representing EAZA.

The Great Ape TAG Chair has also joint membership of the IUCN Primate Specialist Group and several other TAG members are members of the IUCN Primate Specialist Group, Section for Great Apes.

The issue of trafficking of great apes was discussed in our meetings, and in Budapest a delegation of the TAG's core group took part in a meeting between representatives from EAZA and from the Chinese Association of Zoological

Gardens (CAZG), concerning the trafficking of wild caught great apes to China.

Research

The TAG endorsed several projects on advice from the Research group.

The most important criterion for endorsement, apart from the scientific quality of the project, is the value of the anticipated results for the management of our populations, including the welfare of the animals and for the conservation of the species. Endorsed projects include the establishment of the Great Ape TAG Biobank in Copenhagen Zoo, cardiovascular disease in captive great apes (in collaboration with SSP), the plans for a proposed new Ape Cognitive centre in Twycross Life Sciences Park and "Conservation efforts *in situ* and *ex situ* from genomic data".

Ongoing research covers the following issues: multi-male chimpanzee groups in zoos, orang-utan nutrition, diseases in captive chimpanzees, assisted reproduction in bonobos (in collaboration with SSP), genetics (taxonomy, paternities, relatedness, origin for traffic apes), simulation of different breeding strategies (by Pieter Oliehoek and Zjef Pereboom)

Interregional co-operation

Inspired by the Joint TAG Chairs meeting in Alphen, the TAG has intensified cooperation with great ape population managers in other regions. The quality and sustainability of the populations that we manage together will benefit from this cooperation.

We will also try to increase the zoo contribution to the *in situ* conservation of great apes.

The presence of and presentations from representatives from other regional great ape management programmes have improved our contact with those regions, and stimulated the TAG to increase already existing cooperation and to investigate possibilities for more and new fields of cooperation.

Evaluations

The Bonobo EEP and the Gorilla EEP are both rated as good according to the reports from the evaluations in 2013 and 2014. Both also received some valuable prioritized items to work on.

The Great Ape TAG was also evaluated in 2014, also with a positive outcome (functioning considered as 'good' in general) and some points for improvement.

Regional Collection Plan

For the first time the TAG produced a complete Regional Collection Plan in 2014, including among others the TAG Mission Statement, Collection planning philosophy and TAG policies and guidelines.

As part of this Plan, the TAG recommended that all chimpanzees would be included in a single EEP with breeding efforts for Western chimpanzees and Central chimpanzees, while managing the remainder of the population to extinction. These were the total population sizes at that time:

Western Lowland gorilla	(<i>Gorilla gorilla gorilla</i>)	466
Grauer's gorilla	(<i>Gorilla beringei graueri</i>)	2
Western chimpanzee	(<i>Pan troglodytes verus</i>)	250
Nigerian chimpanzee	(<i>Pan troglodytes ellioti</i>)	2
Central chimpanzee	(<i>Pan troglodytes troglodytes</i>)	39
Eastern chimpanzee	(<i>Pan troglodytes schweinfurthii</i>)	6
Chimpanzee subsp. hybrids	(<i>Pan troglodytes hybr.</i>)	224
Generic chimpanzee	(<i>Pan troglodytes subsp.</i>)	268
[Infected chimpanzee]	(<i>Pan troglodytes</i>)	29
Bonobo	(<i>Pan paniscus</i>)	106
Sumatran orangutan	(<i>Pongo abelii</i>)	155
Bornean orangutan	(<i>Pongo pygmaeus</i>)	165
Orangutan hybrid	(<i>Pongo hybr.</i>)	23

Best Practice Guidelines

Work on the production of Best Practice Guidelines, or on upgrading the most recent version of the Husbandry Guidelines to Best Practice Guidelines has been ongoing for all EEPs in 2013 and 2014.

SMALL MAMMAL

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

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

Small Mammal TAG meetings 2013/2014

In 2013, the Small Mammal TAG had its mid-year meeting in Cotswold Wildlife Park (United Kingdom). Cotswold Wildlife Park did an outstanding job of hosting the meeting. The TAG members gave very interesting presentations on different small mammals, provided updates on their breeding programs and shared information about relevant conservation projects. Interesting presentations included: Naked mole rats in Bristol Zoo; An overview of a decade of small mammals in UK and



BRAZILIAN THREE-BANDED ARMADILLO © JOARES ADENILSON MAY JUNIOR (IUCN RED LIST)

Irish Zoos; Mixed exhibits with small mammals and other species.

In 2014, the Small Mammal TAG came together in Magdeburg Zoo (Germany). Magdeburg Zoo did an outstanding job of hosting the meeting.

Interesting presentations included: An overview of Plzen Zoo's small mammal collection; Experiences with Prevost's Squirrels; Breeding armadillos (*Oryzomys azer*) at Antwerp Zoo; Experiences of keeping two-toed sloth (*Choloepus didactylus*) with other small mammals at the Leningrad Zoo.

All presentations are published at the Small Mammal TAG workspace on the EAZA website.

Major achievements 2013/2014

With more than 4000 species under its remit the TAG faces a major task when it comes to updating the Regional Collection Plan. It was decided to first produce a 'positive list' of species which the TAG intend to keep updated in the future. This list was presented at the EAZA annual conference in Edinburgh. A year later, at the EAZA annual conference in Budapest, the TAG settled on a scoring system.

The TAG further discussed the future structure of the TAG and decided that more officers were needed to help the TAG function more efficiently. As a result of this, Konstantin Ruske (Magdeburg) and Sandra Honigs (Düsseldorf) were proposed as additional Vice Chairs.

Besides working on the future structure of the TAG, the TAG continued its support of the Pakarana project in Bogota (Colombia), the Pangolin project in Vietnam, and other projects for Anteaters, Sloths, Balkan Snow Vole, and European Souslik.

Success stories

The Pygmy sloth (*Bradypus pygmaeus*) was described as a new species in 2001. This species is classified as Critically Endangered by the IUCN and lives only on a small isolated

island in Panama. There are fewer than 100 individuals left. In 2013 eight pygmy sloths were confiscated after being taken from Escudo de Veraguas (Panama), brought to Bocas town in cages, and kept outside a hotel for several days. After confiscation, the animals were planned to be exported to DWA. Currently the optimal husbandry and keeping practices for this species in captivity are unknown and they are critically endangered. The related brown-throated sloth (*Bradypus variegatus*) has not successfully bred in zoos so far. The residents became aware of the transfer and the sloths were released due to the involvement of the IUCN Anteater, Sloth and Armadillo Specialist Group, and a lot of other important scientists and fieldworkers.

2014 was the year of the FIFA world championship and the year of the armadillo. Fuleco, a Brazilian three-banded armadillo (*Tolypeutes tricinctus*), was the mascot of the world cup. The species is classified as Vulnerable by the IUCN and it is endemic to Brazil. Armadillos from different species in European zoos were used as 'oracles' to predict the results of matches and to raise awareness for armadillo species, particularly the Brazilian three-banded armadillo (*Tolypeutes tricinctus*) which had not been successfully kept in captivity before. The IUCN and Flavia Miranda from Projeto Tamanduá in Brazil started a research and field project. Now the first Brazilian three-banded armadillos live in Sao Paulo Zoo and field research has started. Arnaud Desbiez, Campo Grande (Brazil) gave a presentation about the giant armadillo project in the Pantanal (Brazil) at the EAZA annual conference.

CANID AND HYAENID

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

Co-Vice Chair: Heike Maisch (Erfurt Zoo, Erfurt, Germany); Simon Marsh (Yorkshire Wildlife Park, Branton, United Kingdom)

TAG meetings 2013/2014

The TAG held a meeting at Avifauna, Netherlands on 14th June 2014. This was part of the EAZA joint TAG Chairs meeting. The Canid and Hyaenid TAG meeting was attended by representatives from the EAZA, AZA (Associations of Zoos and Aquariums), ZAA (Zoo and Aquarium Association), PAAZA (Pan African Association of Zoos and Aquariums)



YORKSHIRE WILDLIFE PARK'S ACTION TO SUPPORT PAINTED DOG (*LYCAON PICTUS*) CONSERVATION IN HWANGE NATIONAL PARK, ZIMBABWE © BRITT JENSEN

and ALPZA (Association of Latin American Zoos and Aquariums). The main point of the meeting was to start the process of developing GSMP's and lower level multi-region management programmes for canid and hyaenid species.

From that meeting it was decided to concentrate on four species which are strong candidates for GSMP. These are painted dog (*Lycaon pictus*), maned wolf (*Chrysocyon brachyurus*), bush dog (*Speothos venaticus*) and Dhole (*Cuon alpinus*).

Three other species were selected for review to assess if they would benefit from a lower level, multi-region management plan. These are spotted hyena (*Crocuta crocuta*), bat-eared fox (*Otocyon megalotis*) and fennec fox (*Vulpes zerda*).

All these programmes will be assessed and formal planning will take place in March 2016 at Henry Doorly Zoo and Aquarium in Nebraska, USA.



FIRST SUCCESSFULLY REARED FENNEC FOX (*VULPES ZERDA*) PUP AT WROCLAW ZOO © ANNA MEKARSKA, WROCLAW ZOO

Breeding Programmes

Anna Mekarska moved from Krakow Zoo to Wroclaw Zoo and the TAG was happy to support the transfer of the Fennec Fox ESB programme. Anna has run the programme very successfully and we are delighted she will continue to coordinate the Fennec Fox ESB.

Research

In March 2014 representatives from the Canid and Hyaenid TAG and Richard Barnes, the Painted Dog EEP coordinator, attended the first European Painted Dog Workshop. The workshop was hosted by Gaia Zoo, Netherlands and organised by Stitching Painted Dog Conservation. It brought together EAZA, AZA, PAAZA and WAZA (World Association of Zoos and Aquariums) members, IUCN (International Union for the Conservation of Nature), NGO (Non-Government Organisations), charities and field conservationists. Over two days the main topic was how to integrate *in situ* and *ex situ* activities. Conservation, education, research and knowledge transfer were the key points focused on. A list of research topics was produced which will assist conservation of painted dogs in the wild and captivity.

These are:

- Breeding/denning behaviour and conditions
- Vocalisations and frequencies
- Group bonding/enrichment
- Reducing aggression
- Scat analysis
- Cortisol/hormone levels in different pack structures and pack formation and breeding
- Diet/nutrition especially in pup development (leg length in pup and adults)
- Immobilisation
- Thermoregulation during before, during and after immobilisations
- Body index scoring
- Collation of research and an outlet for information
- Post mortem results

Conservation

The TAG started an initiative to encourage and assist EEP and ESB coordinators and their programme participants to support *in situ* conservation projects.

A survey was sent to programme coordinators and participants and the EAZA conservation database was used to collate what *in situ* conservation projects EAZA members supported over a five year period (2009 to 2014).

The results showed that a total of 20 Canid and Hyaenid *in situ* conservation projects were supported over that period, the vast majority supporting painted dogs (*Lycaon pictus*).

This identified the need for the TAG to actively find or assist the programme coordinators to find trusted *in situ* conservation projects and then promote them through the EAZA network. This will be completed in 2015.

Also, during the painted dog workshop in Gaia Zoo we discussed forming better links with the IUCN canid specialist group. A follow up meeting is planned for 2015.

BEAR

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

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

EAZA Annual Conference 2013, Edinburgh

Launch of Pole to Pole campaign (2013 – 2015)

During the Conservation Plenary at the EAZA Annual Conference the new EAZA Campaign Pole to Pole was launched. The campaign was initiated by the bear TAG in co-operation with Polar Bears International (PBI) and the Arctic Action Team (AAT).

Dr. Ian Stirling held an astonishing opening speech, a great eye opener for the audience.

Aims of the campaign:

- 1 Affect behaviour change amongst a significant proportion of the EAZA and wider community by asking them to 'Pull the Plug' and save energy
- 2 Run as near a carbon-neutral campaign as possible
- 3 Lead by example
- 4 Affect policy change on a global level to curtail further growth of CO₂ emissions and return atmospheric CO₂ concentrates to below 350ppm

Bear TAG meeting, 27 September

Cécile Dubois, Safari de Peaugres, provided the results of her monitoring activity on the American black bear population (*Ursus americanus*) in Europe. More than 70 live in 17 institutions. Despite being categorized as "not recommended" in the European ursid collection plan there will most probably be a stock of this species in some European collections in the future, as they fit to the institutional theme (e.g. North America) and as they are easy to keep in mixed exhibits in particular in drive-in parks, where most of the American



BROWN BEAR PLAYING WITH POND VEGETATION © JOSE KOK

black bears live. Losses are replaced by occasional breeding.

Chris Shepherd from TRAFFIC Asia gave an overview on the considerable threats to South-east Asian bear populations due to poaching and illegal trade. In 2014 a report on trading routes for sun bears and roles of several Malaysian regions has been published (Krishnasamy & Shepherd 2014)

Joint TAG meeting, Alphen aan de Rijn

During the joint TAG meeting in Alphen on 6 June 2014 an overview of the managed ursid programmes in EAZA and AZA was presented. After this a lively discussion developed on: similarities/differences between the regional programmes and identification of fields of co-operation, like sloth bear management, and exchange of experience with different husbandry methods.

**EAZA Annual Conference 2014, Budapest
Bear TAG meeting, 24 September**

The development of the EEP/ESBs has been summarised. P. Cavicchio from Pistoia Zoo gave an impressive example of conservation education and fund raising for the Apennine



brown bear (*Ursus arctos*). C. Barwick reported on concept of and experience with the new enclosure for sun bears (*Helarctos malayanus*) at Colchester zoo and H. Schwammer on the new polar bear exhibit at Vienna. J. Kok presented the changes in the

Bear Forest at Rhenen with emphasis on the educational aspects.

Referring to a discussion on the mainly unknown origin of Asiatic black bears (*Ursus thibetanus*) in EAZA during the joint TAG Chairs meeting in Alphen, Rob Ogden, Wildgenes Laboratory, Royal Zoological Society of Scotland, was invited to give an expert's view on "Options for Genetic Management of Asiatic Black Bears in Europe". As Asiatic black bears are bred over many generations chances to trace the individuals back to the founders are extremely low. In the future Rob will act as an advisor to the bear TAG on issues of genetic management of the European ursid populations.

International Conference on Bear Research and Management, Thessaloniki

The EAZA bear TAG Chairs attended the International Conference on Bear Research and Management from 5 – 11 October 2014 and contributed to the session of the Bear

Specialist Group (BSG) under the heading “Captive Bears for Conservation”. It was a joint presentation of members of the captive bear expert team of the BSG, which is Chaired by L. Kolter. It consists of regional representatives of experts from zoos and rehab facilities from different continents. J. Kok featured the conservation activities of Alertis based on the captive bears at the Rhenen bear forest. L. Kolter gave an overview on conservation education and fund raising efforts of EAZA zoos keeping brown bears and spectacled bears.

Breeding programmes and their future goals

The EEPs of the polar bear (*Ursus maritimus*) and the sloth bear (*Melursus ursinus*) have been evaluated for the first time with a positive assessment for the polar bear EEP and suggestions to increase the population size and the founder basis of sloth bear EEP, to improve its viability. But due to limited space only few breeding recommendations can be given. This also applies to spectacled bears and sun bears.

As the space and husbandry requirements of large solitary species like ursids are high the long term carrying capacity will stay limited. Still wild bears are coming into captivity needing spaces. The TAG will consider this as well as the low recruitment of new holders/species in the last decade when refining and specifying the roles and goals for each ursid species along the lines discussed during the TAG Chairs meeting in Budapest. This process started during the Bear TAG mid-year meeting in 2015.

CONSERVATION ACTIVITIES

Alertis involvement in stopping bear bile farms

In September 2012 the IUCN World Conservation Congress approved the recommendation to the motion “WCC-2012-Rec-139: Bear farming in Asia, with particular reference to the conservation of wild populations”. This recommendation was accepted following motion M027 which aimed at gradually phasing out the so-called bear farms. Alertis was the main sponsor of this motion. This motion gives a succinct description of the ever increasing threat to the wild population of Asian black bears.

Conference Bear in Mind

The ‘BEAR in Mind’ conference from May 23 -25, in 2013 was organized by Alertis to celebrate the 20th anniversary of the NGO. Two decades of successful bear conservation, welfare and education projects throughout the world were highlighted. NGOs and project partners came together to exchange ideas, inspire each other and share knowledge and

information about bears.

Round table discussion “Conservation of the Marsican Brown Bear”

Bear TAG member Gloria Svampa (UIZA) invited the TAG Chairs to provide expertise in the debate on taking bears from the critically endangered brown bear population of the Central Apennine, Italy, into captivity for conservation breeding. She organised a round table discussion on 4 March 2014 in the Zoological Museum, Rome. These geographically isolated since centuries brown bears differ genetically and morphologically from those in the Alpine/Slownian region (Colangelo et al. 2012, Colangelo et al. 2012). Despite a normal growth rate the population does not increase above ~ 35 - 65 bears due to poaching, poisoning and road kills (Ciucci and Boitani 2008). Considering the risks of removing individuals from such a small population for captive breeding, the majority of participants - the bear TAG Chairs - included did not support this approach, instead suggested to focus all efforts to *in situ* conservation activities and to use bears in Italian zoos for conservation education and fund raising campaigns.

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SMALL CARNIVORE

TAG Chair: Stewart Muir (Newquay Zoo, Newquay, United Kingdom) until January 2014 / replaced by Aude Haelewyn-Desmoulins (Parc ZOO du Reynou, Le Vigen, France) in November 2014.

TAG Vice Chair: Aude Haelewyn-Desmoulins (ZooParc de Beauval, Beauval, France in 2013 / Parc ZOO du Reynou in 2014) until November



EUROPEAN MINK AFTER RELEASE IN HIIUMAA ISLAND © TIIT MARAN

2014

Meetings and Major Outcomes

5 meetings have been held in 2013 and 2014:

- 2013 mid-year meeting - at the EAZA Executive Office. Based on the species reports, the TAG wants to prioritize Owston's civets (*Chrotogale owstoni*), European minks (*Mustela lutreola*), fosas (*Cryptoprocta ferox*), red pandas (*Ailurus fulgens*) and marbled polecats (*Vormela peregusna*). A conservation advisor has been appointed: Will Duckworth who also acts as a link with the IUCN Specialist Group. The conservation efforts of the TAG will be focused on Critically Endangered species such as the European mink.

The TAG defines the following conservation goals:

- Have one programme per region officially supported by the TAG,
- Have a list of Small Carnivore species and/or already existing conservations programmes that would benefit from zoos support.

The urgent action for EAZA zoos is to get actively involved in the European mink conservation, *in* and *ex situ*:

- The TAG discussed ideas to improve PR for the species and creating a TAG education role to improve the status of the

species in EAZA zoos. The feasibility of an "EAZA mink breeding station" was also discussed.

- 2013 closed and open meetings - during the EAZA annual conference in Edinburgh.

A conservation project for mountain coatis and the role EAZA zoos can play in red panda conservation were presented.

- 2014 mid-year meeting - in Avifauna after the first Joint TAG Chairs meeting.

The TAG was sorry to see Stewart Muir step down as TAG Chair but was happy that he will remain as an advisor. Aude Haelewyn-Desmoulins became the acting Chair and Allan Galway the acting Vice Chair.

The meeting focused on developing the TAG conservation plan, working on the regional collection plan and stressing the importance of producing best practice guidelines

This meeting benefited from the attendance of colleagues from AZA, ZAA and other EAZA TAGs. Useful discussions on cooperation for conservation and population management occurred. A Skype meeting with the AZA Small Carnivore TAG Chair has been particularly fruitful.

- 2014 annual conference – during the EAZA Annual Conference in Budapest.

This meeting brought a lot of important pieces of



TWIN OWSTON'S CIVETS BORN AT NEWQUAY ZOO FOLLOWING THE EXCHANGE OF BREEDING MALES BETWEEN NEWQUAY AND CUC PHUONG NATIONAL PARK IN VIETNAM. © KIRSTEN HARFORD AND OWEN TAYLOR AT NEWQUAY ZOO

information to small carnivore holders: creation of a GSMP for the giant otters, updates on the European mink conservation in the field and the forest guardian programme for red pandas.

One more general advisor is appointed: Angela Glatston (Rotterdam Zoo)

Breeding programmes development and population management

- The cooperation between Vietnam and the Owston's civet EEP is vital to the species. Two breeding males have been transferred from United Kingdom (UK) to Vietnam in 2013. They will increase the genetic diversity of the population in Vietnam. One male has been moved from Vietnam to Newquay Zoo (UK) in 2014. The global captive population has only 18 specimens at the end of 2014.
- The marbled polecat is a threatened species with a decreasing trend in the wild. The European population is not sustainable. Contacts have to be made with Romania and EAZA as well as with private breeders. Research on subspecies is planned.
- The yellow-throated marten ESB suffers from a low breeding rate and a high infant mortality. These issues will have to be addressed and best practice guidelines are needed.
- A meeting in Brazil in August 2014 led to a global cooperation for the giant otters (*Pteronura brasiliensis*). A GSMP will be applied for to improve the sustainability of the global captive population, support the development of best practices and promote *in situ* conservation.
- New ESB keepers have been nominated for Kinkajous (*Potos flavus*) – Franck Haelewyn (Parc ZOO du Reynou) and Binturongs (*Arctictis binturong*) – Aude Bourgeois (Ménagerie du Jardin des Plantes) in 2013. Both species

will be managed in close cooperation with AZA to share resources, investigate husbandry and breeding issues and improve the genetic profile.

- The Asian short-clawed otter (*Aonyx cinereus*) status in the wild is not as secure as generally thought. An insurance captive population might be important. The EAZA Small Carnivore TAG will establish monitoring in order to help the international studbook keeper with European data.
- The wolverine EEP is in need for more holders, while the AZA population of *Gulo gulo luscus* is not sustainable and will be phased out. Surplus specimens from the EEP will be exported to AZA zoos (without mixing the sub-species).

Conservation activities

One of the TAG goals for conservation is to have one programme for each endangered EEP species:

- Owston's civets are officially supported by the TAG since 2004 through the "Owston's civet conservation program" that became "Save Vietnam's Wildlife NGO" in 2014.
- The European mink benefits from the great involvement of Tiit Maran in its conservation *ex-* and *in situ*. This species should be a priority for European zoos.
- Fossas have a "fund" used to support a PhD. A Madagascar carnivore project is to be discussed in collaboration between EAZA, AZA, Madagascar Fauna Group, Durrell Wildlife Conservation Trust and with the help of the AEECL and the EAZA Prosimian TAG
- Giant otters will benefit from conservation actions from the GSMP.
- Zoos are encouraged to participate to red pandas conservation through the GSMP and the EEP forest guardian programme taking place in Nepal. The Small Carnivore TAG aims to cooperate with other EAZA TAGs and other regions:
- Some conservation projects supported in other TAGs could be linked to support small carnivore species.
- EAZA geographical meetings added to the current taxonomic meetings would be valuable
- Zoo association of the region where a conservation work is done should be involved

Research activities

- Alopecia in Asian small-clawed otters has been monitored in 2013 and 2014. The causes for the different cases had no definitive link: stress, seasonal disease...
- Investigations on subspecies / variability of white-nosed coatis (*Nasua narica*) are needed. The EAZA and AZA



GROUP PHOTO FELID TAG MIDYEAR MEETING IN JIHLAVA, 2014

TAGs will work together to compile photographs and collect DNA samples.

- The binturong ESB keeper is working on the sub-species that are part of the European captive population. Two geographic clades have been highlighted: Indochinese sub-region and Peninsular Malaysia. The Palawan subspecies is managed separately.
- From 2015, three studies will be run:
 - o Liver tumor in binturongs
 - o Polycystic Kidney Disease in red pandas
 - o Peripartum mortality in Viverrids

FELID TAG

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

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

Felids are charismatic animals and almost every zoo displays at least one big cat species. Consequently, a number of felid programmes have been established in our region. In

2014, there are 19 EEPs, five ESBs and nine (sub)species are monitored by Monitoring-P(ersons). The Felid TAG has the mission to overview the functioning of these programmes and to determine the strategy for the future years.

Meetings and Outcomes

In 2013 Leipzig Zoo, Germany and in 2014 Jihlava Zoo, Czech republic, hosted the Felid TAG mid-year meetings. Between 24 and 30 people, including the EEP coordinators, ESB keepers, advisors and external researchers and lecturers gathered and had fruitful discussions for two full days. In addition to the usual discussions on each programme with its associated problems, taxa evolution and voting for new coordinator and programme applications, a number of external lecturers gave important presentations on new research and conservation findings and possible ways to cooperate with the Felid TAG. We are particularly proud to have continuing close relationships with the IUCN Cat Specialist Group Chairs Drs. Urs and Christine Breitenmoser who came and presented at the mid-year meeting in Leipzig in 2013. Veterinary issues and the relationship of the Felid TAG and their programmes with private holders were also been repeatedly discussed.

In addition to the mid-year meetings, the Felid TAG held two sessions each during the annual EAZA conferences, in 2013 in Edinburgh, U.K. and in 2014 in Budapest, Hungary. This served as an opportunity to inform all conference attendants of the activities of the TAG, the decisions taken over the past year and highlighting the research undertaken in EAZA and external institutions. Particularly the presentation sessions provide an opportunity for longer contributions. Both sessions are usually well-attended and the TAG was energized by the discussions with the attendants during and after the sessions.

Breeding programmes

A new round of EEPs have been evaluated since 2012. Neither the Species Committees nor the participants surveyed reported any major failures on the quality of the programmes or on the involvement of the coordinators. Most of the Felid coordinators were indeed very active before these evaluations and the process motivated the others to improve and increase their work and the communications between all parties. Consequently, no major decision was needed and the TAG is pursuing its work. Of course there is a constant effort to improve on the work of some of the programmes.

The RCP is under preparation. While doing this the Felid TAG has repeatedly discussed and updated the summary table for the different species and subspecies during each of the annual mid-year meetings. The current version is viewable on the EAZA website. In this RCP, the 24 EEP/ESB taxa are 'recommended' by the TAG and each institution should favour them when they choose to add a new felid species to their collection. On the opposite, 13 taxa currently present in our region have been 'not recommended' by the TAG because of less importance in view of their threat status. Some species should be limited and others should be phased out.

Two taxa, the European wildcat and the African lion, need further genetic analysis to determine a good strategy. For the African lion there has been considerable genetic research and monitoring activity of our advisors and monitoring participants, leading to a much better knowledge and fruitful discussions about the direction we aim to take.

Moreover, nine felid taxa not present in the European region are also discussed and the Felid TAG encourages supporting *in situ* conservation instead of trying to import some specimens. If some possibilities to import such endangered species as the Andean Mountain Cat or the Flat-headed Cat arise, the TAG underlines that coordinated actions are compulsory to have a minimum number of animals to start

a relevant breeding programme. Importing single animals is definitely not recommended.

Finally, generic, hybrid, unknown-origin and colour-selected animals should be phased out in our collections to strengthen our *ex situ* conservation efforts and to provide the correct pedagogic messages.

TAG Statements Produced

The Felid TAG has formulated a joint position paper together with the tiger EEPs regarding white and hybrid tigers. These felids should not be further bred and not even displayed as they provide a false image to the public on their perceived need for conservation and taking up valuable holding space which is limiting the capacity of the Sumatran and Amur Tiger EEPs. This statement is available from the EAZA website.

Population management

Three major difficulties continuously exist in the felid programmes:

- 1 Some small cat populations are not sustainable because of their small founder base. EAZA institutions increasingly lack the interest in keeping smaller felid species, which hampers the good development of some programmes.
- 2 Some programme participants are not cooperating well with the EEPs, and even worse, do not follow any recommendations or avoid communication, when the species are charismatic and high-profile.
- 3 There is strong competition for space between some programmes for their equally threatened species, which is exacerbated by some institutions continuing to keep or even start with un-recommended subspecies, hybrids and colour morphs.

It is difficult to put all activities in context since the tasks of the Felid TAG continue to include all of the past issues but are increasingly challenged to incorporate request from the public regarding conservation and welfare of felids, while the TAG cares for high-profile species which are the focus of much public attention. It is difficult to provide the same level of attention to all the programmes, due to the workload, while those species with less attention should actually receive more for balance.

Conservation

The Felid TAG Chairs are very keen on *in situ* conservation and encourage all coordinators to have at least one *in situ* conservation programme to advertise to their programme

participants. Connections between the Felid TAG and the IUCN Cat Specialist Group are excellent, with the TAG Chair, co-Chairs and various co-ordinators being closely involved or supporting *in situ* research and conservation, pooling resources and sharing a joint strategy for the good of the different felid species. Hereafter a few examples. A lot of work has gone into the advising and cooperation on the breeding and future release of captive bred Persian leopards in the Russian Caucasus mountains. The breeding pair of leopards from Lisbon Zoo on loan to the Sochi Breeding Centre has produced several offspring that have and are continuing to be prepared for release into the Caucasus mountains in Summer 2016. This EEP is urging their participants to breed and produce leopards suitable for training and ultimate release back to the wild. This includes improving on the quality of the enclosures, in both furnishing and enrichment.

In 2014, 20 out of the 24 EEPs/ESBs and 9 Mon-P programmes were linked to at least one *in situ* conservation programme. For instance black-footed cat (*Felis nigripes*) research in South-Africa has been ongoing for more than 20 years and the snow leopard (*Panthera uncia*) conservation network are two great examples where EAZA zoos get involved. Although the black-footed cat EEP has been resolved due to the last cat dying in September 2014, the long-term *in situ* programme continues successfully to support *in situ* programmes with important compiled life history data and with currently four individual cats being monitored throughout the year via telemetry.

Success Through Cooperation

An important achievement of the TAG during this period is

that we were able to create an atmosphere of close cooperation and joy of working together to improve on the programmes, while at the same time improving our standards of communication, coordination and addressing problems proactively. Whenever we ask for a discussion of specific topics a good number of members are contributing, so decisions are really based on democratic principles.

MARINE MAMMAL

TAG Chair: Gerard Meijer (Ouwehands Dierenpark, Rhenen, The Netherlands)

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

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

TAG meetings 2013/2014

In 2013, the TAG met twice during the EAZA Annual Conference in Edinburgh and at the mid-year Marine Mammal TAG meeting in Nürnberg. In 2014, the TAG also met twice during the EAZA Annual Conference in Budapest and at the mid-year Marine Mammal TAG meeting in Amsterdam.

Major achievements 2013/2014

The Marine Mammal TAG has been working on new Best



HARBOUR SEAL (*PHOCA VITULINA*) © GERARD MEIJER

Practice Guidelines:

- The appointed group working on the compilation of the EAZA Best Practice Guidelines for Pinnipeds made good progress but did not reach the aim of finalizing the final draft in 2013. The TAG now aims to finalize the draft in 2015, a meeting will be planned in July 2015.
- The Best Practice Guidelines for the walrus was reviewed by December 2013 and small changes were added in 2014.
- The first draft of the Best Practice Guidelines for manatees is almost ready but there is still work to be done on the final draft.
- It is agreed to develop Best Practice Guidelines for bottle-nosed dolphins aiming to finalize the draft at the 2015 mid-year meeting.

The Regional Collection Plan of the Marine Mammal TAG was reviewed in 2013. A survey was carried out in 2014 to determine current and future space availability in EAZA member institutions for marine mammals. The results were discussed during the mid-year meeting in 2014 in Amsterdam and will be finalized in 2015.

The Memorandum of Understanding (MoU) between EAZA and the European Association of Aquatic Mammals (EAAM) is expiring by the end of 2015; the TAG would like to continue, and thus, for it to be renewed, a letter with a positive advice has been sent to the EEP committee. The TAG strongly feels that a MoU is of importance to constant knowledge exchange between the associate members and for the functioning of the breeding programmes.

ELEPHANT

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

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

In 2013, Prof. David Field (ZSL) was elected as the new Chair of the TAG with Dr. Thomas Kauffels (Kronberg) as Vice Chair. New Species Committees for both EEPs were completed in late 2014, the members of which comprise the TAG.

TAG meetings 2013/2014

A very productive mid-year meeting was held in Opel Zoo, Kronberg in 2014, where a number of new initiatives were implemented and endorsed at the Budapest EAZA conference TAG meeting. These included:

- the launch of a fund to further research into elephant endotheliotropic herpesvirus (EEHV) to which all elephant holders are expected to contribute. Three projects have been identified to support over the next three years.
- a draft proposal on the criteria for justification of the import of wild born elephants to ensure an ethical approach to any potential imports. This identifies that whilst there are potential breeding females within the EEP, then imports cannot be justified.
- a draft proposal on the definition of Protected Contact.
- revising the Best Practice Guidelines including veterinary testing protocols for disease surveillance and prior to transports.

Other meetings and conferences which have taken place include regular vet advisor meetings, an Elephant Workshop at Sosto Zoo in August 2014, the International Elephant Management Academy at Vienna Zoo (2013+2014) and an Ultrasound Workshop at ZSL Whipsnade Zoo (an EAZA Academy Recognised Course in 2014), Continued Professional Development (CPD) training for several vets. Increasing the opportunities for training elephant keepers in new husbandry techniques, especially in regard to protected contact, is a major objective of the TAG.

Programme coordination 2013/2014

Studbooks and recommendations for the Asian and African Elephant EEPs were produced as required and EEP evaluations are to be completed in early 2015.

The Asian elephant EEP progresses well and is in line with 2013 Strategic Masterplan objectives. The loss of calves to EEHV remains a significant factor. Additionally, the placement of bulls in the population needs to be regularly addressed and the TAG is supporting the EEP in ensuring that all institutions holding breeding females also provide bull facilities.

The African elephant EEP has more intrinsic problems with a lack of breeding females in the population. The TAG will be supporting the Coordinator in their efforts to ensure that all potential breeding females be put into a breeding situation before they are post-reproductive. There remains a significant concern that this may be too late for a number, if not all, of the females. Much greater cooperation of some EEP institutions is required to achieve this and the TAG will use every means at its disposal to ensure this happens.

Elephants have been a major flagship and highly “political” animal within zoos, with many institutions having a long-standing attachment to individual animals. This has caused



AFRICAN ELEPHANTS © NORBERT POTENSKY, VIENNA

significant difficulties in the management of the EEPs. The 2013 Elephant Population Masterplan forms the basis for future management of the populations and the TAG works to reduce and indeed remove the individual institutional bias.

Current working procedures within the TAG encourages open and transparent dialogue and resolution of difficult transfer decisions and credit is given to the coordinators and studbook keepers of the two EEPs for their excellent work. In particular, the TAG acknowledges Rob Belterman who stepped down as Asian elephant Studbook Keeper in 2014.

The TAG is focused on encouraging new and improved husbandry standards for the care of elephants along with training opportunities for keeping staff. The TAG Veterinary Advisory Group have been extremely proficient in developing protocols for testing for a variety of diseases, in particular tuberculosis (TB) and EEHV. A new research sub-group within the TAG will take an overview of the many proposed projects the TAG is asked to support.

Conservation support for elephants will be a major focus for the TAG moving forward. There is some excellent support to field projects from a few zoos (e.g. Zurich and Chester) but greater contributions are required from more institutions.

EQUID

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

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

Changes to TAG structure

In September 2014 Achim Winkler announced his retirement as Equid TAG Chair. Ulrike Rademacher (Wilhelma Stuttgart/Germany) took over as his successor, with Tanya Langenhorst (Marwell Wildlife/UK) and Jaroslav Simek as Co-Chairs. Achim Winkler will stay on at the TAG as a Special Advisor.

The Equid TAG was evaluated for the first time in 2014.

Some points raised in the evaluation have been addressed through the new TAG structure already.

First ever meeting with TAG Chairs of other regions

A fruitful first meeting has already led to cooperation on research surveys.

Research

The TAG has identified two main points for research:

1. The prevalence of EHV is an increasing and most urgent problem for the equid EEPs as transfers are being cancelled



PRZEWALSKI'S HORSE RELEASE TACHIN TAL 2014 © P JOSEK J

and more and more institutions either reject animals which have tested positive for EHV or are restricted in their attempts to move animals out because their own groups are testing positive.

The TAG is therefore encouraging all equid holders to support research into EHV carried out at the IZW Berlin, Germany. They have developed an ELISA test to detect EHV1 and 9 (the EHV's with the most severe pathological outcomes). To answer the open questions about this type of virus, the scientists of the IZW are looking for samples of equids in zoos (Common zebra (*Equus burchelli*), Grevy's zebra (*E. grevyi*), Mountain zebra (*E. zebra*), Onager (*E. hemionus*) and Kulan (*E. hemionus kulan*)). In addition the TAG planned to initiate a survey in 2015 on the prevalence of EHV and vaccination against EHV across all equid EEPs.

2. Equine sarcoids

This type of local skin tumours, which are frequently found on eyes, ears, nostrils, scrotum, preputium, mammary glands and abdomen occurs frequently in Hartmann's mountain zebra (*E. zebra hartmannae*) and Somali wild ass (*E. africanus somaliensis*) and so far rarely among Grevy's zebra. No cases known among Asiatic wild equids. As the disease often leads

to issues with breeding or even euthanasia for the individual animals, it is a problem in need of investigation amongst the small EEPs of Hartmann's mountain zebra and Somali wild ass. The three African equid EEPs have therefore designed a detailed questionnaire together with their vet advisors and are searching the support of all participants. The Somali wild ass EEP did send out initial questionnaires to their holders in summer 2014. Further expansion of this survey is planned for 2015. The colleagues in the States will also be asked for support as the disease is much less prevalent in their animals than in Europe.

Research activities reported by the EEP coordinators were:

- Grevy's zebra EEP
 - o Enrita Lesoloyia: Water hole usage by a variety of species (including Grevy's zebras) in previously unstudied areas of Northern Kenya
 - o Ito Hideyuki: Grevy's zebra personality research, PhD Theses., Kyoto, Japan
 - o Ouma George Anyona: Movements and distribution of Grevy's zebra (*Equus grevyi*) in South Horr, Samburu County, Kenya. MSc Thesis. .

- o P.-E. Leroux: Assessment of dry season access and use of water sources by Grevy's zebra and other wildlife in Laisamis, Kenya, MSc Thesis..
- Hartmann's mountain zebra EEP
- o Danielle Free: Understanding Social Dynamics and Their Relevance for Breeding Success, MRes study. A first report was presented during the EAZA conference to the Equid TAG. A publication is expected for 2015/16.
- o Robert Haines: Activity budgets, enclosure use and interspecific behaviour of Hartmann's mountain zebra in a mixed-species exhibit. BSc Thesis, Nottingham Trent University, UK.
- o Rosie Livingstone: The influence of individual inbreeding coefficients on the reproductive success of a managed Hartmann's Mountain Zebra population BSc project, University of Southampton.
- o Prof. Morris Gosling: Age-dependent mortality of mountain zebras in southern Namibia, Newcastle University.
- Onager EEP
- o Esmaeili, S. (University of Wyoming, U.S.A.), Hemami, M.-R. (Isfahan University of Technology, Isfahan, Iran), Kaczensky, P. (Univ. of Veterinary Medicine, Vienna, Austria): Understanding Onagers human conflicts to develop evidence based conservation strategies for the critically endangered Onager population in Bahram-e- Goor Protected Area, Iran
- o Esmaeili, S., Hemami, M.-R., Kaczensky, P.: Habitat-selection of Onagers in Bahrem-e-Goor
- o Esmaeili, S., Hemami, M.-R., Walzer, C. . (Univ. of Veterinary Medicine, Vienna, Austria), Kaczensky, P. and Goheen, J.R. . (University of Wyoming, U.S.A.): Assessing competition between onager (*Equus hemionus onager*) and livestock in Bahram-e-Goor Protected Area, Iran (donations requested as this study is not yet financed)
- o Kaczensky,P. Esmaeili, S. and M.-R. Hemami: Study on habitat needs and movement corridors in Bahram-e Goor .
- o Kaczensky,P. Jacobs, S. and R. Kühn: Study on population genetics of onager and kulan .
- o Schook, M.: Study on AI with semen sample collections from Onager EEP stallions for AI in the USA .
- o Walzer, C, Kaczensky, P.: Identifying migratory routes of Onager in Bahram-e Goor by satellite telemetry
- Somali Wild ass EEP
- o Christian Wenker: Determination of virus types causing equine sarcoids in Somali wild ass

- o Fanuel Kebede, Futsum Hagos and Dr. Albano Beja-Pereira: Analysing SWA faecal samples from the wild
- o Futsum Hagos: Population dynamics, genetics and seasonal distribution of wild ass in the Danakil Desert MSc study
- o Futsum Hagos: Research and conservation of the very important Eritrean population of African wild ass.
- o Michael Kahsay: Research to determine suitable habitat for SWA in Danakil desert MSc study

Other EEP issues

All equid EEPs are running reasonably well but several of them encounter space issues.

The Somali Wild Ass EEP has an increasing problem of placing surplus animals. Temporary breeding stop is to regulate the captive population. Equally, the kulan EEP is in great need of new holders and the Hartmann's mountain zebra EEP needs a new holder for a bachelor group.

Conservation

Ongoing conservation programmes include among others:

- Turkmenian Kulan wild population programme organised by Valerii I. Kuznetsov and Olga Pereladova (WWF Russia) population survey was held in 2012-13.
- The reintroduction programmes of the Przewalski's horse in central Asia, as well as introduction programmes in semi-reserves in Europe, are carrying on. Reintroduction projects with different levels of success for Przewalski's horses are under way in Mongolia and China, new project is under preparation in Kazakhstan. To date more than 500 horses live again in Mongolia and China, population in the Gobi B area recovered from the crash due to severe winter in 2009/2010 up to 113 animals at the end of 2014. In July 2014, within the frame of "Return of the Wild Horses" project, the fourth transport organized and coordinated by Prague Zoo brought three mares from Europe to Tachin Tal area in Gobi B..
- Marwell Wildlife's conservation work for the Grevy's zebra in Kenya (collaring, stripe ID database, national surveys, national conservation strategy etc.) continues with the support from various other zoos and wildlife agencies.
- PhD and MSc studies on Somali wild asses in East Africa with support from the Somali wild ass EEP.
- Both Minnesota Zoo (Jeff Muntifering and Dr. Tara Harris) and Prof. Gosling from Newcastle University, run Hartmann's mountain zebra conservation projects and research in Namibia with the support from US and European zoos.



GREVYS TRIO ON EL BARTA PLAINS, KENYA © T LANGEHORST

TAG goals for 2015

- To guarantee the ongoing development of the various breeding programmes within the TAG, in order to ensure the best possible genetic and demographic health of the various captive populations.
- To interest more zoos to keep some of the highly threatened equid species (e.g. Somali wild ass, Hartmann's mountain zebra, kulan, onager) instead of some of the more common species (e.g. Plains zebra, kiang).
- To make considerable progress on the review of the Best Practice Guidelines for African and Asian equids.
- To establish a closer link between the EAZA and the AZA Equid TAG, as well as the IUCN Equid Specialist Group.
- To initiate a survey on the prevalence of EHV and vaccination against EHV across all equid EEPs.
- To continue the support of the reintroduction programmes of the Przewalski's horse in Central Asia.
- To continue the support for conservation and research work of the Grevy's zebra and Somali wild ass in Eastern Africa, as well as Persian onager and Turkmenian kulan in Asia.
- To provide technical expertise in veterinary medicine, husbandry and population management for wild equids.
- To further investigate certain veterinary aspects, such as

sarcoids among equids by supporting the three African equid EEPs in their research in this field.

- To establish a comprehensive list of publications on equids on the EAZA webpage.
- To run EEP evaluation process for Przewalski's horse EEP and Grevy's zebra EEP.

Current ESBs: None.

International studbooks:

African wild ass (*Equus africanus somalicus*)

Grevy's zebra (*Equus grevyi*)

Hartmann's mountain zebra (*Equus zebra hartmannae*)

Asiatic wild ass (*Equus hemionus holdereri*; *Equus hemionus kulan*; *Equus hemionus onager*)

Przewalski's horse (*Equus ferus przewalskii*)

TAG meetings 2014

Equid TAG meeting during the Joint TAG meeting, Alphen, Netherlands; June 2014

Equid TAG meeting during EAZA Conference in Budapest, H; September 2014

TAG surveys

No EAZA Equid TAG survey has been conducted during the reporting period.

Regional Collection Plan

The TAG is aware that the current RCP is in urgent need of updating. For now the review of the Best Practice Guidelines has been prioritised, with the aim to address the RCP shortly after.

The current RCP is a comprehensive 64-pages regional collection plan, completed in 2003, and distributed in CD-format to all EAZA members. The RCP is also available in pdf-format on the EAZA website.

Current EEPs:

- Grevy's zebra (*Equus grevyi*)
- Hartmann's mountain zebra (*Equus zebra hartmannae*)
- Somali wild ass (*Equus africanus somalicus*)
- Kulan (*Equus hemionus kulan*)
- Onager (*Equus hemionus onager*)
- Przewalski's horse (*Equus ferus przewalskii*)

Monitoring studbooks:

- Maneless zebra (*Equus burchelli borensis*)

RHINO

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

TAG Vice Chair: ars Versteeg (Safaripark Beekse Bergen, Hilvarenbeek, The Netherlands)

The vision and mission of the EAZA Rhinoceros TAG are to have a healthy, viable population of free ranging and intensively managed rhinos ranging through intact ecosystems, where they are valued and cherished both locally and globally, and to ensure all 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.

TAG meetings 2013-2014

In 2013, the EAZA Rhinoceros TAG met at the annual EAZA conference in Edinburgh. A major aim is to continue to strengthen forces with the *in situ* partners to tackle the huge

poaching problems throughout the year. For the TAG meeting in Edinburgh, the Executive director of SRI, Cathy Dean and Richard Bonham, Executive Director of Big Life Foundation were invited. Unfortunately, Richard was unable to attend the meeting and therefore Cathy Dean was so kind to report on behalf of Richard on the poaching crisis in Kenya and how they tackle the huge task to protect the last free roaming Black rhino population in the Chyulu Hills, Kenya. Cathy then talked on behalf of Save the Rhino International and presented an update on the poaching crises (over 1000 rhinos were poached in Africa in 2013) and the most relevant questions (trade yes/no; protection measures; results of meetings in Asia).

In 2014, the EAZA Rhino TAG met at the annual EAZA conference in Budapest. Invited guest speakers were Dirk Swart, Section Ranger for Rhino Conservation in Hluhluwe-iMfolozi Park, South Africa, who reported about the high poaching incidents in SA (1215 rhinos poached in Africa) and how they tackle this issue. The second invited Guest speaker was Hermann Poort from Nino the mad mad rhino. He presented a possibility how zoos can engage their visitors in rhino conservation.

Due to the high poaching numbers of rhinos, the Rhino TAG urges all rhino holders to support rhino conservation projects. Further information can be downloaded at the EAZA Rhino TAG webpage.

Update on breeding programmes 2013-2014

The status of the 3 EEPs within the rhinoceros TAG for 2013 are as follows:

Black rhino EEP (*Diceros bicornis michaeli*): (Becca Biddle, Chester Zoo)

- At the end of 2013 there were 22.45 (67) Black rhino held within 17 EAZA institutions.
- That includes a pair (1.1) of *Diceros bicornis minor* held at Frankfurt zoo. In 2013 there was a plan to transfer these rhinos to Swaziland, but unfortunately this plan fell through. An alternative for these two rhinos has not yet been decided upon yet. Both animals have an estimated birth date of July 1986 so are coming up to 28 years of age.
- There are a further two collections in Europe holding *Diceros bicornis michaeli* that we know of (Dvur Kralove and Zoo d'Arcachon).
- During 2013 there were 1.3 births (1.1 Chester, 0.1 Leipzig, 0.1 Krefeld). This continues the trend of a sex ratio skew with over two females per male in the population.
- There was 0.1 death of an old (30 year) female at Port



2014 BLACK RHINO HUSBANDRY WORKSHOP © E BELTOFT

Lympne.

- Tallinn Zoo was welcomed back into the EEP receiving a new young breeding pair of Black rhinos at the beginning of 2013. New to the EEP is Rotterdam who also received a pair of Black rhinos during 2013.
- There were a total of 5.4 transfers over the year.

Indian rhino EEP (*Rhinoceros unicornis*) (Beatrice Steck/Olivier Pagan, Zoo Basel)

- The EEP included 31.34 animals (65) held in 24 zoos as of 31 December 2013.
- Births: 1,3 (1,0 in Basel and 0,1 in Beauval, Chester and Lisieux)
- Deaths: 0,1 (Lisbon lost the old cow aged 33 years, originally from Dvur Kralove)
- Transfers: 0.2: (Beauval received a female from Basel and Bewdley a female from Amersfoort)

At least 6 zoos participate in Indian rhino conservation projects, more zoos are assumed to support SRI and International Rhino Foundation (IRF).

The Indian rhino EEP held their annual meeting during the EAZA conference in Edinburgh with a focus on a research project on skin problems and studbook data in support of

extending interbirth intervals. The EEP population grew from 62 to 65 individuals and females in Chester and Beauval had their first births. The four potential founders have still not reproduced successfully.

The import of the female from San Diego WAP has been taken up again by Lisieux after it became possible again to import rhinos from third countries. The Indian rhino EEP is looking for new holders that provide good exhibit plans and reliably build their exhibits within 2-3 years after contacting the coordinator.

White rhino EEP (*Ceratotherium simum*) (Lars Versteeg, Beekse Bergen)

- The white rhino EEP population started with 260 (101.159) animals in 71 zoos.
- Births: 4.4 of which 3.4 survived.
- Deaths: 1.3 + 1.0 calve that did not survive. Majority are old animals with the exception of 1 female that died because of veterinary complications.
- Transfers: 3.5
- Imports: None
- 14 zoos are reported to participate in White rhino conservation projects, but it is known more zoos donate



BLACK RHINO CALF, ZOO ZURICH

money to the large Rhino conservation organisations SRI and IRE.

The white rhino EEP had their annual meeting during the EAZA conference of which the focus was upon veterinary issues and conservation. Both subjects are playing a crucial role in this EEP. The population in the EEP is slowly growing. More calves are born, and more important, more females start reproducing. The EEP feels that with the initiative to exchange animals which are not breeding and by exchanging young females out of their maternal herd a big step has been taken to increase the population growth. Only because the large percentage of old “import” animals from the 1970’s are now slowly dying out, the population is not yet sustainable, but with the potential and the development it seems this will only be a matter of time! The EEP population grew up to 262 animals (102.160) during 2013. And even more exciting, eleven animals have been reported to give birth in 2014!

The status of the 3 EEPs within the rhinoceros TAG for 2014 are as follows:

Black rhino EEP (*Diceros bicornis michaeli*): (Becca Biddle, Chester Zoo)

- At the end of 2014 there were 25.45 (70) Black rhino held within 18 EAZA institutions.
- That includes a pair (1.1) of *Diceros bicornis minor* held at Frankfurt zoo.
- During 2014 there were 3.1 births (2.0 Berlin, 1.0 Leipzig, 0.1 Zurich).
- There was 1.1 death of an old (44 year) female at Port Lympne and a 13 day old male calf at Leipzig.
- There were a total of 3.2 transfers over the year.

TAPIR AND HIPPO

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

General activities 2013/2014

The Tapir and Hippo TAG met twice during the report period, on 25 September 2013 in Edinburgh and 25 September 2014 in Budapest. The main topics discussed during the two meetings were the conservation status of the breeding programme species (Lowland Tapir, Malay Tapir, Common Hippo and Pygmy Hippo) and the news about a possible fifth species of tapir found in the Amazon. The “new species”, so far called *Tapirus kabomani*, could differ from the other New world species of tapirs by anatomical characters, ecology and also genetically, but the validity of this taxon is still open for discussion.

As usual the IUCN SSC Tapir Specialist Group (TSG) updated the TAG about their work and in particular about the VI International Tapir Symposium that was to take place in Brazil in November 2014. The Tapir and Hippo TAG has a very close link to the TSG and is a partner in the preparation of the Tapir Symposium. During the symposium the situation with the possible new tapir species was discussed, and it was decided to gather more data, especially genetic data, about the “species” before making a decision as to whether or not to approve it as a new species. A new time frame of one year was given for the collation of such data after which a decision will be made. The outcome of this work will be reported at the next meeting of the TAG (Wroclaw, September 2015), and any potential consequences for the management of the Tapir programmes will then be discussed further.

At the meeting in September 2014 it was decided to merge the Tapir and Hippo TAG with the Pigs and Peccary TAG, forming a new joint TAG called the Tapir and Suiform TAG. The merge was originally proposed by the former Chairman of the Pigs and Peccary Tag when he stepped down as Chairman, and it was approved by the EEP Committee in fall 2014. It makes good sense since the taxa of the two TAGs are covering the same geographical area, and the species are faced with the same overall challenges. The organization of the new joint TAG will be described in more detail in the 2015 TAG report.

As part of the second round of programme evaluations the Malay Tapir EEP was scheduled for 2014. Evaluation forms were circulated to all relevant parties in November 2014 and will be collated and analysed in 2015. Furthermore the Tapir and Hippo TAG was evaluated in fall 2013, and the



MALAYAN TAPIR 1964 © HELMUT MAGDEFRAU

result of the evaluation was published in spring 2014 with the marks “sufficient – good” and with recommendations to distribute workload, to produce a Regional Collection Plan and Best Practice Guidelines and to continue work on EEP improvements.

Programme highlights

Lowland Tapir EEP:

- 163.171 animals in 121 EAZA institutions.
- Two all-male groups established
- EEP policies:
 - All offspring need to be kept in breeding institution for at least 18 months
 - All animals to be tested for TB before any transfer
- Medical survey developed together with the IUCN/SSC Tapir Specialist Group circulated to all Lowland Tapir holders with the purpose of improving the existing veterinary guidelines

Malay Tapir EEP:

- 24.25 animals in 22 EAZA institutions
- At least 33 founders
- Urgent need for TB analysis of the population

Pygmy Hippo EEP:

- 49.73 animals in 55 EAZA institutions
- 40 founders
- Urgent need for new holders in order to reach the target population
- IUCN Red List assessment almost finished. Will probably remain in the category Endangered (EN)

Common Hippo ESB:

- 50.109.3 animals in 61 EAZA institutions
- 40 founders

- Programme management challenges: costly transports, limited production due to longevity, permanent contraception in many institutions
- Recommendations: increased use of the “breed and cull” concept and of temporary contraception

PIG AND PECCARY

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

TAG Vice Chair: Jochen Reiter (Zoo Duisburg, Duisberg, Germany)

Programme coordination and evaluation

The Pig and Peccary TAG comprises a total of four actively managed programmes. European Endangered Species Breeding Programmes (EEPs) exist for Babirusa (*Babirusa babyrussa*) from Indonesia (Thomas Kauffels); for Red river hog (*Potamochoerus porcus*) from Africa (Jochen Reiter); and for Visayan warty pig (*Sus cebifrons*) from the Philippines (transferred from Angela Glatston to Lidia Przybylska). The Warthog (*Phacocoerus africanus*) from sub-Saharan Africa is managed as a European studbook (ESB) by Ross Snipp (formerly Ceri Robertson). Following the completed evaluation of the Babirusa EEP in 2011, the evaluation for the Red river hog EEP has been launched, whereas the evaluation for the Visayan warty pig EEP needed to be postponed (the programme was transferred only in 2014). The TAG itself has been evaluated during the reporting period. It was strongly recommended to set the production of a new Regional Collection Plan (RCP) as one of the first priorities.

Meetings and links

The first international Joint TAG Chairs meeting and the subsequent EAZA EEP mid-year meetings in Alphen in 2014 have marked a milestone in two ways. First, the TAG Chair has served for more than two decades and wished to step down, while continuing to deal with Babirusa research matters in the background and maintaining excellent links to IUCN and Indonesia. During the Alphen meeting it was proposed that this TAG be merged with the Tapir and Hippo TAG, with Bengt Holst becoming overall TAG Chair, along with Jochen Reiter as Vice Chair. Aside from the fact that biogeographically it makes sense to merge the two TAGs, there will also be advantages for housekeeping tasks that



RED RIVER HOG, ZOO DUISBURG © CLAUDIA KUSTER

can be dealt with more effectively. The EEP Committee subsequently approved the merging of both TAGs into one. After the EAZA annual conference in Budapest in 2014, the TAG Chair and Vice Chair along with Kristin Leus as representative of the IUCN SSC Pigs and Peccary Specialist Group have since then discussed the organization, the responsibilities and the future tasks of the newly established Tapir and Suiform TAG. Second, long-standing links to the American Zoo Association (AZA) and Indonesia have become even stronger. Martin Ramirez, the new AZA Pig and Peccary TAG Chair from Woodland Park Zoo, attended the Alphen meeting and is very keen on collaborating. After Species Conservation Planning Workshops in Indonesia the TAG continued to reinforce links with this country, also with the help of James Burton as Chair of the IUCN-SSC Asian Wild Cattle Specialist Group. It was very fortunate that decision makers from Taman Safari Indonesia and the Indonesian Zoo Association (PKBSI) attended the Alphen meeting. The background is that the populations of three ungulate taxa (Banteng, Anoa and Babirusa) are too small in each region (EAZA, AZA and PKBSI) for a sustainable RCP. However, if managed together then they may eventually comprise viable Global Species Management Plans (GSMPs). After the Alphen

meeting an innovative new partnership between zoo and field based conservationists has subsequently been created: six partner organisations, including EAZA, have come together to contribute to the long-term survival of those threatened taxa as described in three National Action Plans. This will be accomplished through establishing durable global *ex situ* activities and populations that effectively contribute to the conservation of these taxa; and supporting a range of *in situ* activities including research, education, capacity building and conservation actions. Until the end of 2014, much effort has been put into e.g. having MoUs signed by decision makers; preparing 'Concept for Partners' and 'Business Plan' documents for the initiative, which is now called 'Action Indonesia: Conserving Anoa, Banteng and Babirusa initiative'; and preparing for the development of three GSMPs.

Species programmes and conservation

The European population of Babirusa is continuously declining and is an ageing population. As a consequence, on-going approaches are being made to collections in SE Asia in the search for an infusion of additional breeding stock. In parallel with these efforts, detailed studies of the genetics of wild and zoo Babirusa over recent years have



VISAYAN WARTY PIGLET ©LIDIA PRZYBYLSKA, ZOO POZNAN

generated results that shed light on both the current and historical situation. The current zoo population appears to represent genetic material no longer present in the wild, and also seems to reflect contributions of genetic material from more than one part of the island archipelago around Sulawesi. The Visayan warty pig population is thriving, but there are insufficient new holders, creating difficulties with placing offspring. Best practice guidelines were published in 2014. Holders are encouraged to contribute to the Visayan Warty Pig Conservation Programme in the Philippines. The high inbreeding level is a major obstacle in sustainably managing the population of Red river hogs, thus the primary goal is to further import new bloodlines from North America or rather from the wild. The Warthog ESB has suffered from a rapid succession of studbook keepers during the past few years, and now aims at reducing inbreeding and maximising founder representation. In addition, the TAG continues to keep a watchful eye on other wild pig species which are not in European collections. These include the Pygmy hog (*Porcula salvania*) from Assam, India, and the Javan warty pig (*Sus verrucosus*) from Java, Indonesia. Conservation breeding efforts with both of these species are bearing fruit, with sufficient success for the reintroduction of the Pygmy hog into the wild and an increase in numbers of the Javan warty pig. The peccaries now in European collections include the Chacoan peccary or Tagua (*Catagonus wagneri*) from the Chaco, South America; the White-lipped peccary (*Tayassu pecari*) from South America; and the Collared peccary (*Pecari tajacu*) that ranges from South America to the southern United States of America. Detailed genetic studies of all the peccaries are required, but are particularly needed for the Collared peccaries. In 2012 the Chacoan peccary was reintroduced into European zoological collections for conservation breeding purposes as part of the current RCP.

This is also an initial contribution towards the very active network of peccary research and conservation efforts being carried out in South America. As breeding success in Europe could be recorded in the following years leading to a growing population, it was decided on a TAG level to establish a new EEP for this threatened species.

CAMELID AND CATTLE

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

TAG vice-chair: James Burton (Banham zoo, Banham, United Kingdom)

Update on breeding programmes 2013-2014

In 2013 a new species committee for the Anoa EEP was elected and new versions of both the European and Global studbooks were completed. The banteng studbook was updated and a genetic study was launched, with research into mono-orchid ongoing. Results on banteng (*Bos javanicus*) genetics were made available at the end of 2014, with results of research into the taxonomic status of anoa also being made available at the same time.

European Bison EEP studbook data entry is now current to 2006 however, much proofing is required. Genetic research is being carried out in Poland, Romania and Germany. A greater level of communication with the IUCN/SSC European bison specialist group co-Chair and her appointed regional coordinators was highlighted as being a priority.

Preparations for a first draft of the Cape buffalo management plan and guidelines have been started and a combined studbook for 2012/13 was also produced. One new Dwarf forest buffalo (*Syncerus caffer nanus*) holder joined the programme in 2014 and one existing holder renovated their enclosure to start a new herd. An additional zoo will also start holding the species in 2017.

An International Studbook was produced for vicuna (*Vicugna vicugna*), demonstrating that the programme has reached its desired projected growth rate in the population of 4%. Elections for a new Vicuna Species Committee were also held, and work continued on trying to export 6.6.0 animals to AZA holders.



A PAIR OF ANOA (*BUBALIS DEPRESSICORNIS*) © MARWELL WILDLIFE

Conservation

Two significant European bison (*Bison bonasus*) reintroductions were carried out in Romania during the period. Collaboration between the Indonesian Zoo Association (PKBSI), EAZA and AZA to transfer Anoa, Banteng and Babirusa between the three regions was initiated (the Babirusa was also added to these two species because of the parallel Action Plan that has been produced). As part of this collaboration, the Anoa and Banteng Indonesian Strategy and Conservation Action Plans (2012 and 2014, respectively) were approved. Both Anoa and Banteng have been proposed as GSMP species.

Meetings with Lao and Vietnamese government officials were also held in 2014 to discuss the possibility of conservation breeding and intensive captive management of Saola.

TAG produced documents 2013-2014

Indonesian Strategy:

The TAG led the drafting of a Memorandum of Understanding (MoU) acknowledging that effective *ex situ* management for the conservation of Anoa, Banteng and Babirusa requires a) healthy global *ex situ* populations and b) long term continuous, cooperative and adaptive management of the global *ex situ* populations to ensure that they contribute as effectively as possible to the *in situ* conservation of these taxa. This MoU was signed by The Director General of Forest Protection and Nature Conservation (PHKA), Ministry of

Forestry, PKBSI, EAZA, AZA, IUCN SSC (including the Asian Wild Cattle and Asian Wild Pig Specialist Groups). The TAG led the formulation of a 'Business Plan', a 'Concept for Partners' document and an accompanying letter, all aimed at helping raise funds for the Anoa, Banteng and Babirusa Indonesian Strategy.

Saola Conservation Initiative:

The fourth draft of the EAZA Cattle & Camelid TAG Intensive Management of Saola Advisory Group (IMSAG) Action Plan was produced in 2014, and the TAG assisted with the formulation of the 'Captive Management of Saola Concept Note' for the governments of Laos PDR and Vietnam.

TAG meetings 2013-2014

In April 2014 the TAG Chair was part of a delegation from EAZA, WCS, IUCN and the Saola Working Group (SWG) of the IUCN SSC AWCSG who attended meetings with Lao and Vietnamese government officials in Vientiane and Hanoi to discuss the possibility of conservation breeding and the intensive captive management of Saola.

The Cattle and Camelid TAG Mid-Year meeting was held in June 2014 in Alphen, the Netherlands.

During the Annual conference in Budapest the Cattle and Camelid TAG and its members held the 'open' TAG meeting, a meeting on the Indonesian Strategy and a meeting of IMSAG.

Publications

Saving The Saola (EAZA *Zooquaria* magazine)

Working Together for Anoa, Banteng and Babirusa (WAZA *News*)

EAZA-IUCN SSC led partnership for Conserving Anoa, Banteng and Babirusa (EAZA *Zooquaria* magazine)

DEER

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

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

Introduction

The Deer TAG is responsible for three taxonomically distinct groups: the chevrotains (mouse-deer; *Tragulidae*), musk deer (*Moschidae*) and true deer (*Cervidae*). Despite having the word “deer” in their common names, these groups are not related to each other any more than to other even-toed ungulate (*Artiodactyla*) groups. Following the taxonomy used in the Handbook of the Mammals of the World (Wilson, D.E. & Mittermeier, R.A. eds., 2011), a total of 70 species fall under the remit of the Deer TAG (10 *Tragulidae*; 7 *Moschidae*; 53 *Cervidae*). However ungulate taxonomy is still not fully resolved or unanimously accepted (e.g. Groves, C.P. & Grubb, P., 2011) and this number may change in the future.

Breeding programmes

Several new breeding programmes have been formed during 2013-4 or and others have been upgraded. Some of these changes are still pending the final confirmation of the EEP Committee, but all new programmes and personal changes should be finalized by late 2015.

- Christina Schubert (Landau) – new Visayan (Philippine) spotted deer ESB Keeper. This programme has been running for a long time at least at an ESB level, but only recently received official recognition.
- Agnieszka Urbańczyk (Wrocław) – new Balabac chevrotain ESB Keeper (new programme).
- Ryszard Topola (Warsaw) – new White-lipped deer ESB Keeper (upgraded from a monitoring programme).
- Matt Hartley (Zoo and Wildlife Solutions) – new Burmese brow-antlered deer EEP Coordinator (upgraded from an ESB).
- Janno Weerman (Rotterdam) – new Michie’s tufted deer

ESB Keeper (new programme – previously monitored by TAG)

Mid-year meeting

During 2014, the first Deer TAG Mid-Year Meeting took place at Ostrava Zoo (Ostrava) Fourteen people, representing 12 institutions and five countries, attended the two-day meeting. The main resolutions were to formalize the collaboration between EAZA zoos and the private/non-EAZA sector, attempt to import semen from a developing country and perform artificial insemination as an alternative to importing animals from developing countries, start a Facebook page, and create a database of deer species in mixed exhibits.

Cooperation, contacts, in situ projects

Cooperation with the IUCN/SSC Deer Specialist Group (DSG) is ongoing. The TAG Chair, Noam Werner, is a member of the DSG, as are TAG members Jan Pluháček and Roland Wirth. Planning for a reintroduction project of the Indochinese sika deer (*Cervus nippon pseudaxis*), which is extinct in the wild, to Guangxi Province in south-west China was started in 2014. The TAG is collaborating with Dr. Bosco Chan (Kadoorie Farm and Botanic Garden, Hong-Kong, China), who has been talking with the Chinese authorities and indicated their interest in the project. The TAG Chair has also attended a hog-deer conservation workshop at Phnom-Penh, Cambodia, and several other TAG members have been involved in various *in situ* or captive breeding projects in range countries (forest reindeer, Finland; Eld’s deer, Cambodia; Visayan spotted deer, Philippines).

ANTELOPE AND GIRAFFE

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

Co-Vice-chairs: Sander Hofman (Royal Zoological Society of Antwerp, Antwerp, Belgium) and Tania Gilbert, Marwell Wildlife, Marwell, United Kingdom)

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

Mission: To maintain healthy, genetically viable, self-sustaining, captive populations of okapis and a representative

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

The Antelope and Giraffe TAG continues as one of the largest and most complex TAGs representing the approximately 50 species (and approximately 94 taxa) held in European zoos. It is our remit to maintain healthy animals in healthy populations and keep a representative cross-section of antelope and giraffe taxa, as per our mission statement. The stringent veterinary regulations imposed by the European Union (EU) means that it is still difficult to obtain animals from outside of the EU, regardless of whether they are part of established managed populations, new founders for existing populations, or additional species. Currently the TAG holds 11 EEPs and eight ESBs; the remaining species are actively monitored.

TAG meetings 2013-2014

The midyear meeting took place 05 June to 06 June 2014 in the context of a first ever Joint TAG Chairs Meeting in Birdpark Avifauna in Alphen a/d Rijn. This turned out to be an excellent opportunity to meet colleagues from the United States and Australia and discuss common matters with them. General sessions were followed by main subject sessions dealing with regional collection planning in the AZA region, as well as giving an insight into antelope and giraffe populations and programmes in the Australian region. We were pleased to have a first-hand report about the activities of the Giraffe Conservation Foundation (GCF) and IUCN Giraffe and Okapi Specialist Group by Julian Fennesey. Relevant research results on dama gazelle and Western derby eland conservation and mortality in ungulates in connection with transport were presented and discussed. We also held a closed meeting to begin regional collection planning for the TAG. The development of a new RCP will remain a significant activity for the TAG in the near future.

During the EAZA Annual Conference in Budapest, our TAG meeting took place on 26 September 2014. The open meeting was followed by a closed meeting to continue and expand the work on the RCP. During this meeting, we discussed the most appropriate system for evaluating levels of management for TAG species. The open session started off with the intermediate report of the TAG Chair and reports of the various TAG's subgroups. Peter Luptak introduced the



ARABIAN ORYX © JENS-OVE HECKEL

numerous participants to a first draft of a TAGs webpage, which in the future will serve as a source of information for TAG members, as well as for the interested public, and to further promote antelopes and giraffes under intensive management, as well as in the wild.

Among a long list of various activities of different TAG members, it should be mentioned that the TAG was represented at various international meetings (e.g. at the annual Sahelo-Sahara Interest Group meeting in Porto, Portugal). The TAG's Chair and Vice Chairs, in addition to other TAG members, are actively involved in the IUCN/SSC Antelope Specialist Group, Giraffe and Okapi Specialist Group, Reintroduction Specialist Group, and Conservation Breeding Specialist Group. In addition, in 2014, Marwell Wildlife began its partnership with the IUCN/SSC to host the Antelope Specialist Group (ASG) Programme Office and Tania Gilbert became the ASG Programme Officer. This maintains and strengthens the existing strong bonds between *in situ* and *ex situ* conservation.

Update on breeding programmes 2013-2014

Several EAZA antelope EEPs and ESBs were transferred to new coordinators, including Blesbok ESB, Roan antelope EEP, Eastern bongo EEP, and Addax EEP. The Arabian oryx EEP is currently vacant and the TAG is urgently looking for a new coordinator to manage the programme. A number of studbook evaluations were scheduled for 2014 and the evaluation process was guided by Sander Hofman. Kristine Schad and Laurie Bingaman-Lackey from the EAZA Executive Office were of crucial assistance through conducting Quick Population Assessments (QPAs) for a number of programmes.

The Giraffe EEP Coordinator and Giraffe EEP Species Committee, together with Kristine Schad and Sander Hofman, worked hard on a giraffe long-term population management plan. The now finalized document will help to ensure that we will have a long-term viable, well-managed giraffe population within our community.

The TAG's Chair and Vice Chairs positioned themselves in interviews and public relations situations concerning the case of agreed culling of a giraffe in Copenhagen Zoo for population management reasons and the unfortunate culling of transferred sitatunga after arrival in South Africa.

Conservation

TAG members were involved in, and supported, a range of conservation activities for antelope and giraffids, including surveying wild populations and habitats, post-reintroduction monitoring, community education training and engagement, and capacity building.

CAPRINAE

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

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

At the 2013 EAZA conference, the holders of the Chair and Vice Chair posts swapped positions, which obviously provided a degree of continuity to the TAG. The name of the TAG also changed from Sheep and Goat to Caprinae, which is taxonomically more comprehensive and brings us in line with our North American counterparts and the IUCN specialist group.

TAG meetings 2013/2014

Two formal TAG meetings took place in 2014: at the international joint TAG Chairs meeting in Alphen, which was not well attended; and the usual meeting at the EAZA Budapest conference which was very well attended.

A review was carried-out of the TAG's membership and a couple of people stepped down. We currently have 18 members, which includes four advisors covering licensing/BALAI and veterinary issues, advanced reproduction research, genetics and *in situ* conservation. The TAG has two EEPs (muskox (*Ovibos moschatus*) and markhor (*Capra falconeri*)), six ESBs (takin (*Budorcas taxicolor*), blue sheep (*Pseudois nayaur*), Saharan Barbary sheep (*Ammotragus lervia sahariensis*), East Caucasian tur (*Capra caucasica cylindricornis*), West Caucasian tur (*Capra caucasica*) and Nubian ibex (*Capra nubiana*)) and monitors the argali, (*Ovis ammon*) Arabian tahr (*Arabitragus jayakari*) and urial (*Ovis orientalis vignei*) populations. The coordination of the Goral ESB has for some years been rather fluid, but a new ESB keeper has stepped forward and is in the process of being confirmed. The Japanese serow ESB has been discontinued (see below).

At the Alphen meeting there were the start of meaningful discussions surrounding BALAI approval for ungulate importations, specifically from Southeast Asian collections, in conjunction with the Cattle and Camelid TAG and Pig and Peccary TAG. The way forward was further identified at the Budapest conference and we are working towards having Singapore approved, in the first instance, with a view to importing new Goral founders, along with further Babirusa for the Pig and Peccary TAG. This is of course taking rather longer to organise than first thought, but progress is being made.

Cooperation with other regions

In line with the desire for TAGs to develop closer ties with their respective IUCN specialist groups, renewed attempts were made to formally link with the Caprinae Specialist Group and an approach was made in conjunction with our North American colleagues.

In connection with this latter point, our TAG has for some years had a very close working relationship with our AZA counterparts, in particular Jeff Holland and Dave Powell, the AZA Caprinae TAG Chair and co/Vice Chair, respectively. We have discussed managing some of our programmes jointly and given the diminishing number of Japanese serow



MARKHOR HERD, KINGUSSIE

in Europe and the steady interest and some growth in North America, we opted to manage the two populations as one and that the combined programme would be managed by our American colleagues. We are looking to further enhance our links and we envisage producing a combined and heavily revised collection plan that covers both of our regions. This growing level of cooperation is of course logical, but the current import legislation makes animal movements very difficult between our two regions, especially into the USA. We are actively moving forward with solutions that will enable easier movement of animals and the importation of two unrelated Szechuan takin females and a male Japanese serow from the USA demands that we reciprocate.

An updated version of the Muskox husbandry guidelines, a good first draft of the Markhor guidelines and a set of recommendations for Takin husbandry were made available to members on the TAG's page on the EAZA web site.