The Kulan EEP collaborates with Ben-Gurion University (Israel) who runs a project on developing genomic tools to analyse individual relatedness in the introduced population of Asiatic wild ass (*Equus hemionus)* in Negev.

CONSERVATION AND RESEARCH

The study "Genetic evaluation of the EEPs for wild Asiatic wild asses as a basis for future *in situ* and *ex situ* conservation strategies" led by Petra Kaczensky and Ralph Kuehn (Inland Norway University of Applied Sciences) continued in 2021 with EEP holders sampling their animals.

Monitoring of kulans in central Kazakhstan continued. Due to COVID-19 restrictions, no translocations occurred in 2021 but great news: the first kulan foal has been born in the central Kazakhstan steppe since 1930.

The following projects are ongoing in the Przewalski's horse EEP:

- Research on genetic background of horse infertility in cooperation with Munich Zoo and the Technical University of Munich (Germany)
- Feasibility study of possible reintroduction of Przewalski's horses in Eastern Mongolia in cooperation with National University of Mongolia, Mongolian University of Life Sciences and Charles University in Prague (Czechia)
- Ongoing support of Great Gobi B Strictly Protected Area reintroduction project (Prague Zoo, Czechia)
- Initial steps for establishment of the cooperation with governmental agencies in Kazakhstan with aim to reintroduce horses there in the future

Monitoring and research on Grevy's zebra populations is ongoing in remote areas of Kenya, as well as supplementary hay feeding during drought, and outreach programme to raise awareness of conservation issues in communities.

A group of representatives from the Union of Czech and Slovak Zoological Gardens visited the Kidepo Valley area (Uganda) and made an agreement with local authorities and conservationists to, hopefully, prevent importing Grant's zebras (*Equus quagga boehmi*) from Lake Mburo.

The Hartmann's mountain zebra and Grevy zebra EEPs are both contributing to research on stress hormone, metabolic hormone and reproductive hormone markers in equids in cooperation with Manchester University, UK. The aim of this project is to find a method to evaluate the health status of wild equids (and zebra in particular) *in situ.*

ADDITIONAL COMMENTS

A complete list of the 2021 publications can be found on the Equid TAG page in the EAZA Member Area. Here is a selection of them:

- Anoshin, R. et al. (2021). *Informational Collection of Zoos and Aquariums*. Moscow Zoo, Issue 40, Vol. 1
- Baptista, C.J., Sós, E. and de Carvalho, L.M. (2021). *Gastrointestinal Parasitism in Przewalski Horses (Equus ferus przewalskii)*. Acta Parasitologica, 1-7
- Langenhorst, T., Mate, L. and Naanyu, E. (2021). *Grevy's Zebra conservation in Kenya 2021 report and funding proposal prepared for supporters and members of the Grevy's zebra EEP conservation projects*. Marwell Wildlife
- Wenker, C. et al. (2021). *Equine Sarcoids in captive wild equids: diagnostic and clinical management of 16 cases – a possible predisposition of the European cohort of Somali wild ass (Equus africanus somaliensis)?* Journal of Zoo and Wildlife Medicine, 52 (1)

37 RHINOCEROS

TAG Chair: Lars Versteege (Safaripark Beekse Bergen, Hilvarenbeek, the Netherlands) • Vice Chair: Katharina Herrmann (Berlin Zoo, Berlin, Germany)

INTRODUCTION

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

White rhinoceroses *(Ceratotherium simum)* © Beekse Bergen / Mariska Vermij-van Dijk

2021 has proven to be a challenging year for all. Institutions being closed to the public, tourist income drying up at *in situ* partner institutions, as well as much pressure on continuing the conservation work *in situ* and with our rhino populations. On top of the COVID-19 pandemic, Brexit also had a huge negative impact as it basically stopped all exchanges between the EU and the UK. Luckily rhinos and rhino people are "thick skinned" and will most likely come back even stronger after this episode!

Friederike van Houwald (Basel Zoo, Switzerland), former TAG Chair, stepped down and was replaced by the former TAG Vice Chair, Lars Versteege (Beekse Bergen, the Netherlands). The position of Vice Chair was advertised and filled by Katharina Herrmann, Conservation Officer from Berlin Zoo (Germany), which makes the TAG very happy.

POPULATION MANAGEMENT PROGRAMME DEVELOPMENTS

The status of the three EEPs within the Rhinoceros TAG are as follows.

White rhinoceros (*Ceratotherium simum*)

It was another very good year for the white rhino population, despite the difficulties caused by COVID-19 and Brexit. Due to the successful trend - from 345 to 354 animals - the EEP has to become extremely creative. All participants are asked to create separation exhibits for potential surplus, and the EEP is pro-actively searching for additional holders. The balance between breeding (for health, behaviour and demographic reasons) and maximum capacity is tricky. Contraception is challenging in white rhinoceros, and one risks losing breeding animals for life.

Black rhinoceros (*Diceros bicornis*)

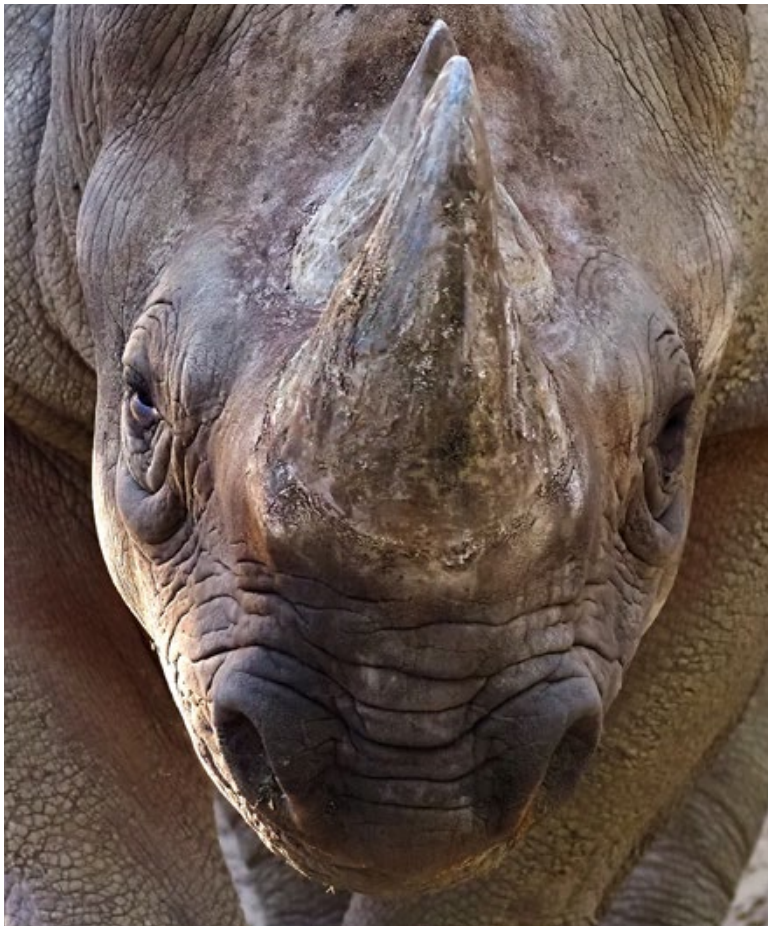
The vision and goal for the Black rhinoceros EEP are to:

- Ensure a healthy and sustainable EAZA population to fulfil the needs of EAZA zoos
- Manage the population to achieve a >5% growth rate per year
- Maintain 90% gene diversity from 41 founders for 100 years
- Work closely with the IUCN SSC African Rhino Specialist Groups (AfRSG) and governments to make Eastern black rhinoceros available for return to Africa to supplement populations where needed

A good development is the acceptance of two additional holders within the EEP.

Greater one-horned rhinoceros (*Rhinoceros unicornis*)

The population did not change much during 2021. The EEP issued a breeding stop which is still in place because it is nearly impossible to find new holders within the EAZA community. To improve this situation, cooperation with non-EAZA holders in Europe and South America was intensified and several ALPZA members joined the EEP. Transfers to this region prove difficult however, due to logistic and administrative problems. It is hoped that cooperation with other regions can be intensified, especially with the SSP to improve the narrow founder base.



Black rhinoceros *(Diceros bicornis)* © Eye to Eye Xperience / AudioVisual Xperience

ACHIEVEMENTS DURING THE YEAR

During the online EAZA Annual Conference a full meeting was organised with speakers from all over the globe, showing once again the dedication of the TAG towards global conservation cooperation.

COLLABORATIONS

Next to the cooperation with Save the Rhino International and the International Rhino Foundation, all three EEPs have strong collaborations all over the world.

CONSERVATION AND RESEARCH

The White rhinoceros EEP is continuously involved with research improving reproduction in connection with Body Conditioning Score, metabolism, social influences, etc.

The Black rhinoceros EEP is involved in several research projects, such as:

- A PhD thesis on the genetic makeup of the EEP population by Frankie Elsing (Manchester University, UK)
- Rhinoceromics project: risk of metabolic disorders particularly iron storage disease by the EEP Vet Advisors led by Linda van Sonsbeek (Rotterdam Zoo, the Netherlands)
- The effect of a zoo transfers on breeding success using ZIMS data, by Abbie Starsmeare (Reaseheath College, UK)
- An undergraduate project on age related pairing success using ZIMS data by Zoe Brown (Hartpury University, UK)

Doctoral candidate, Julia Aust (Zürich University, Switzerland) is carrying out a project aiming to record the *status quo* of greater one-horned rhinoceros husbandry in the EEP. It is part of a larger project including all three rhino EEPs. Julia will record details about enclosures, diets, medical status and body mass of EEP animals and study necropsy reports. She will also collect faecal samples and available blood samples for the TAG-supported Rhinoceromics project. The research started in 2020 but had to be interrupted due to COVID-19. It will continue again as soon as the situation permits to do so.

The TAG reviewed a proposal for the translocation of three Eastern black rhinoceros females from the EEP. This translocation would allow a genetic supplementation of the Grumeti population. A final decision on the project is expected in 2022.

ADDITIONAL COMMENTS

The Black rhino EEP finished the second edition of the EAZA BPG for the species, with an updated Veterinary chapter.

38 TAPIR AND SUIFORM

TAG Chair: Jörg Beckmann (Nuremberg Zoo, Nuremberg, Germany) • Vice Chair: Jan Pluháček (Ostrava Zoo, Ostrava, Czechia)

INTRODUCTION

The EAZA Tapir and Suiform TAG is responsible for the tapirs (*Tapiridae*), hippos (*Hippopotamidae*), pigs (*Suidae*), and peccaries (*Tayassuidae*).

Due to the global COVID-19 restrictions during most of 2021, the activities of the TAG were limited to those that could be conducted virtually.

POPULATION MANAGEMENT PROGRAMME DEVELOPMENTS

Following the virtual workshop taking place in November 2020, the new RCP was finalised in 2021. The EEPs started to prepare the first LTMPs. Several new style EEPs were already approved by the EEP Committee in 2021.

In 2021, Jan Pluháček (Ostrava Zoo, Czechia) became the new Vice Chair of the TAG, whilst Jörg Beckmann (Nuremberg Zoo, Germany) became the new TAG Chair, after Bengt Holst retired from Copenhagen Zoo (Denmark). Bengt chaired the TAG for 21 years. Therefore, it was decided he would become an Honorary Advisor to the TAG.

Maren Siebert took over the EEP for Chacoan peccary (*Catagonus wagneri*) from Christian Kern (both Berlin Tierpark, Germany). In addition, Diana Koch (Nuremberg Zoo, Germany) took over the EEP Coordinator role for Malayan tapir (*Tapirus indicus*) EEP from Jörg Beckmann.

ACHIEVEMENTS DURING THE YEAR

There was an online TAG meeting during the 2021 EAZA Annual Conference, but no mid-year meeting. All programmes continued their important work despite temporary lockdowns and other restrictions. The two new EEP Coordinators started working intensely on their programmes.

COLLABORATIONS

The TAG has a long-standing collaboration with the following IUCN SSC SGs: Tapir SG, Hippo SG, the Wild Pig SG and newly the Peccary SG. All these collaborations were continued and developed further during 2021 in the sense of the One Plan Approach.

In addition, all EEPs have close links to *in situ* projects for their respective species. Special cooperation is linked between the TAG and the IUCN SSC Newsletter Suiform Soundings. Ostrava Zoo also became an official partner of the IUCN Hippo SSC SG and helps to develop and to keep their new website updated (www.hipposg.org).

CONSERVATION AND RESEARCH

As in 2020, all conservation and research activities were impacted by the pandemic and had to follow local restrictions. For several projects, especially the *in situ* ones, that meant a temporary shutdown. Other projects continued at a smaller scale.

A new challenge for wild pigs, both *in* and *ex situ*, is the current spread of African Swine Fever across Asia and Europe. This disease is a real threat for endangered wild species and subspecies, as well as for our zoo populations. Therefore, the TAG is working together with several experts, especially from the IUCN SSC Wild Pig SG, European Association of Zoo and Wildlife Veterinarians, VZT (German Association of Zoo Veterinarians), Wildlife Conservation Society and the Friedrich-Loeffler-Institut (Germany) on a better understanding of the disease with the aim to develop an ASF vaccine, to save species from extinction, all in the sense of the One Plan Approach.

ADDITIONAL COMMENTS

As the new RCP for Tapirs and Suiform represents the key document for further steps of the TAG, we summarised the most important conclusions in the autumn 2021 issue of Zooquaria, freely available to all.

Malayan tapirs *(Tapirus indicus)* are managed as a new style EAZA Ex situ Programme © Jan Pluháček

EUROPEAN ASSOCIATION OF ZOOS AND AQUARIA

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Cover image

The Near-Threatened red-tailed amazon (*Amazona brasiliensis*) is difficult to breed in human care, however ARTIS Zoo (the Netherlands) has been successful in doing so and the EAZA Ex situ Programme for the species is now looking for new holders

This report was designed by Vrije Stijl and printed by Grafisch Perfect, on FSC quality paper (sustainable) using organic inks and printing plates free of chemicals. All waste is disposed of in an environmentally friendly manner.

INTRODUCTION

This Annual Report provides a detailed overview of the diverse activities that EAZA's 42 Taxon Advisory Groups (TAGs) were involved in over the course of 2021.

This TAG Annual Report demonstrates successes and progress achieved across the EAZA TAGs in 2021. Of the 42 TAGs, all but the Coral TAG, Ratite TAG and Charadriiformes TAG were able to provide a report. Like in 2020, the COVID-19 pandemic continued to hamper the work of the TAGs. However, the TAGs have continued to show strong dedication and increased skills in using online platforms, resulting into the many and diverse activities described in this report.

The implementation of the still relatively new EAZA population management structure continued with Regional Collection Plan (RCP) meetings held online for Elasmobranchs, Reptile (Crocodilians), Raptors, Pigeon and Dove, Great Ape, Bear, Small Carnivore, Marine Mammals and Antelope and Giraffids. Upon completion, RCP publications are made available on the Member Area of the EAZA website.

The RCP process informs which species EAZA will actively manage across its Member zoos and aquariums as part of an EAZA Ex situ Programme (EEP). Each EEP will then develop its own tailor-made Long-Term Management Plan (LTMP), which outlines the strategy towards achieving the species-specific goals set as part of the RCP process. In 2021, resulting from continued training capacity building of the EAZA Population Management Centre (PMC), the number of LTMP meetings increased significantly to more than 40. Additionally, even more so called pre-LTMP check-in meetings, aiming to prepare for the LTMP workshop, were held. The first EEPs on family level (including for various species of freshwater fish) were approved in 2021, recognising that one size does not fit all when managing species and (groups of!) individuals across a wide range of species and within varying contexts.

This report also demonstrates the wide variety of species conservation activities that the TAGs were involved in during the course of the year, including but not limited to: supporting IUCN Red List assessments, new species discoveries, contributions to 'One Plan Approach' conservation planning in collaboration with an increasing number of IUCN Species Survival Commission (SSC) Specialist Groups, head-starting programmes, training in mitigation of disease impacting wild populations, management of populations with insurance and ARK roles, reinforcement- and reintroduction programmes and fundraising. It is truly exciting to see that the members of EAZA TAGs are involved across all three parts of the IUCN SSC 'Assess, Plan, Act conservation cycle'. Cooperation with field conservation partners and experts, in addition to those with IUCN SSC Specialist Groups, stayed strong and continued to grow.

59 new style EEPs were approved bringing the total to 202 by the end of 2021. In addition to these, TAGs will continue to oversee 122 old style EEPs and 122 European Studbooks (ESB) until all have completed their new style RCP process.

Another core task of TAGs is (to coordinate) developing EAZA Best Practice Guidelines (BPG) that reflect the best practice management in human care of the respective taxa. With nine BPG completed, approved and freely available on the EAZA website (www.eaza.net), 2021 was yet another productive year in this regard.

Significant progress was made by Species360 with the development of the so-called 'Social Group' functionality in ZIMS for Studbooks in 2021. The PMC as well as some TAGs and EEPs contributed to this work, and we are looking forward to migrating the remaining handful programmes into ZIMS in early 2022.

In addition, the TAGs worked on other tasks including providing expertise input for EAZA's lobbying work at the European Union and representation with other organisations. The transport of animals between the EU and the UK was no minor challenge on the agenda in 2021. Despite these challenges, we are optimistic to see a slow but steady increase in transports during the course of 2022 thanks to the hard work and persistence of the Members, EEPs and TAGs, and not least the strong collaboration with our colleagues at the British and Irish Association of Zoos and Aquariums (BIAZA).

For more information on topics raised in this report, please contact the EAZA Executive Office (EEO) at info@eaza.net. EAZA extends its thanks to all the Chairs, Vice Chairs, Programme Coordinators and Committee members for their support, commitment and enthusiasm to EAZA in 2021.

GLOSSARY

AZA: Association of Zoos and Aquariums (USA)
BPG: Best Practice Guidelines
Chester Zoo: North of England Zoological Society (NEZS) / Chester Zoo (UK)
CITES: Convention on International Trade in Endangered Species
EEO: EAZA Executive Office
EEP: EAZA Ex situ Programme
ESB: European Studbook
GSMP: Global Species Management Plan
IUCN: International Union for the Conservation of Nature
LTMP: Long-Term Management Plan
MON-P: Monitored-by-designated-person Programme, includes MON-T, MON-T REPLw, MON-T Phase out and MON-T DNO (see EAZA Population Manual in EAZA Governing Documents for more details)
RCP: Regional Collection Plan
SEAZA: Southeast Asian Zoo Association
SG: Specialist Group
SSC: Species Survival Commission
SSP: Species Survival Plan
TAG: Taxon Advisory Group
ZAA: Zoo and Aquarium Association (Australasia)
ZIMS: Zoological Information Management Software
ZSL: Zoological Society of London (UK)

The greater one-horned rhinoceroses *(Rhinoceros unicornis)* in Basel Zoo live in a mixed exhibit with small-clawed otters *(Aonyx cinerea)* and Visayan warty pigs *(Sus cebifrons)* © Basel Zoo