

EAZA Yearbook 2007/2008

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EAZA Great Ape TAG

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EAZA Great Ape TAG Annual Report 2007 - 2008



1. Information on organisation, structure and activities of the TAG

TAG chair:	Tom de Jongh, Arnhem	t.dejongh@burgerszoo.nl
TAG vice-chair:	Teresa Abello, Barcelona-zoo	mabello@bsmsa.es
TAG members:	Clemens Becker (Karlsruhe) Neil Bemment (Paignton) Cornelia Bernhardt (Krefeld) Frands Carlsen (Kobenhavn-zoo) Bryan Carroll (Bristol) Rüdiger Dmoch (Frankfurt) Angela Glatston (Rotterdam) Sander Hofman (Antwerpen) Marianne Holtkötter (Stuttgart) Warner Jens (Apeldoorn) Zdenka Jerabkova (Dvur-kralove) Andreas Knieriem (Hannover) Sebastien Laurent (Bossiere-dore) Jens Lilleor (Aalborg) Ute Magiera (Osnabruck) Gerd Nötzold (Leipzig) Richard Osterballe (Givskud) Zjef Pereboom (Antwerpen) Mark Pilgrim (Chester) John Ray (Twycross) Sandra Reichler (Heidelberg) Frank Rietkerk (Apeldoorn) Wineke Schoo (Arnhem) André Schuele (Berlin-zoo) Ulrich Schürer (Wuppertal) Harald Schwammer (Wien-zoo) Alexander Sliwa (Koln) Jeroen Stevens (Antwerpen) Janos Szantho (Amsterdam) Raymond van der Meer (Amersfoort) Jan Vermeer (Romagne) Lars Versteeg (Hilvarenbeek) Istvan Vidakovits (Budapest) Achim Winkler (Duisburg) Cesare Avesani Zaborra (Bussolengo) Robert Zingg (Zurich)	
TAG advisors:	General Kristin Leus, Copenhagen Zoo Behavioural Taxonomy Veterinary Wolfram Rietschel, Wilhelma, Zoologisch-botanischer Garten Stuttgart Nutritional Conservation Research Educational	
Current EEPs:	Western lowland gorilla (<i>Gorilla gorilla gorilla</i>) Bonobo (<i>Pan paniscus</i>) Western chimpanzee (<i>Pan troglodytes verus</i>) Orang-utan (<i>Pongo pygmaeus</i>)	
Current ESBs:	Common chimpanzee (<i>Pan troglodytes</i>)	
TAG meeting:	Date of last meeting: 27 April 2008 Last meeting hosted at Zoo Frankfurt.	
Regional Collection Plan:	Has a RCP been published? No Next edition to be published in 2010.	

Publications:

2. Information on developments during 2007 - 2008

Programmes and personnel:

- Target population sizes for the breeding programmes, in the framework of the RCP, were set.
- Zjef Pereboom (Antwerpen) took over as EEP coordinator for the Bonobo EEP.
- Teresa Abello (Barcelona-zoo) became vice chair of the Great Ape TAG.
- The Orang utan EEP evaluation procedure was completed.
- The Bonobo EEP evaluation procedure is almost completed.

TAG meetings:

- Chester, 29/04/2007.
- Warsaw, 15/09/2007.
- Frankfurt, 27/04/2008.
- Special Session at EAZA Annual Conference in Antwerp, 19/09/2008.

Documents produced:

- Great Ape TAG survey on use of bio-floors.
- Great Ape facility screening form.
- Great Ape facility self screening form.
- Contraception in Great Apes.

3. TAG goals for 2009

- Complete evaluation of the Bonobo EEP.
- Initiate the evaluation of the Gorilla EEP.
- Produce Great Ape TAG Mission Statement.
- Get approval for EAZA Great Ape Campaign 2010-2011 and start preparations.
- Determine research priorities.
- Focus more on psychological aspects of human-great ape interactions.



Orang-utan

EEP Annual Report 2007 - 2008



1. Programme information

Sumatran orang-utan	<i>Pongo pygmaeus abelii</i>
Bornean orang-utan	<i>Pongo pygmaeus pygmaeus</i>
Hybrid orang-utan	<i>Pongo pygmaeus HYBRID</i>

EEP established in 1988.

Goal(s)

Percentage of gene diversity 90% saved in 100 years.

Additional comments

Development of the populations: lack of sufficient growth

However, since the last 21 years since establishing of the EEP orang-utan (population sizes 1989: 309 animals; 2008: 320 animals) the Bornean and Sumatran populations seem to be stable, but do not really grow.

According to the genetic analysis (June, 2009) - using the SPARKS programme - by Lori Perkins, Atlanta Zoo, chair of the orang utan SSP, both populations (species) continue to be quite robust. The population's growth rate remains stable, at an approximate replacement level (i.e., zero population growth). All genetic parameters are extremely robust (e.g. 98 % gene diversity). Demographically, both populations are extremely stable, and have not shown substantial fluctuations from year to year. This bodes well for future stability. The age structures show stable pyramidal shapes to ensure long-term stability and the potential for growth.

For both populations, if the intent is to increase population size, efforts should be undertaken to recruit reproduction before the need becomes critical; such efforts should be focused on the individuals at the top of the mean kinship lists (i.e. individuals with the lowest mean kinship coefficients) in order to increase population size while maintaining the strong genetic values. Managers should review the rate of success of breeding recommendations, and use this data to inform the process by which such recommendations are made (e.g. if the success rate in recent years is, for example, 50%, managers should make 10 breeding recommendations in order to plan for a gain of 5 living offspring; etc.). The EEP population is in the fortunate position of having the benefit of a comparatively large population with a robust genetic profile for both species of orangutan; having these variables in such good condition enables the population managers to take the best advantage of the sophistication of the zoological industry's most modern population management techniques, for the preservation of orang-utan populations into the future.

Male Problem

In general, the placing of a growing number of younger males is and will be a problem for the European zoo-population. These males are only "temporarily surplus" inside the EEP and will be needed for breeding purposes in the future, certainly. This seems to be a bigger problem especially in the Bornean species where 35 males are confronted with 36 females (age classes 0 - 14 years), whereas in the Sumatran species only 24 males are confronted with 39 females (same age classes). The experiences of some holders that tried to house male groups during the last years (like Fuengirola, Gdansk, Sosto, Los Palmitos, Bojnice and Madrid) are not of great help. It seems to be no problem to combine male orang-utans till to the age of 10-12 years, but after reaching adulthood the males may develop aggressive behaviour inside such group compositions that do not reflect the social system in the wild.

Changing the present keeping system

The fact that the populations lack sufficient growth could be related to our existing keeping system that does not reflect the social structure in the wild, sufficiently. In most of our zoos, males and females live together for a large part of their lifetime. In the wild, females and juveniles are relatively social, especially in seasons, rich in food. Females only seek the company of "flanged males" (with fully developed secondary sexual characteristics; mostly solitary; overlapping territories with home ranges of several females; sexually active; do not tolerate other flanged males but relatively tolerant towards unflanged males) when seeking a partner for breeding. With their strategy "Sit-Call-and-Wait", they are waiting in their large home ranges and producing long calls to attract such females to them for sexual consort ship. On the other hand, "unflanged males" ("arrested males"; no secondary sexual characteristics developed) are comparatively "social" and tolerant towards other males. With their strategy "Search-and-Find", they actively find females for short and successful sexual contacts. There is evidence (even in our zoos) that the change from unflanged to flanged males is influenced by social factors. The secondary sexual characteristics may occur relatively suddenly (within some months) in subadult males or in later periods of a life. Sometimes the form of an unflanged male will last a major part of an individual's lifetime. But it is known, that both -unflanged and flanged- males are mating at the same rate.

These different facts and estimations for the stability and growing of the populations in the future should be carefully compared and observed. Because of the very low growth rates in both, the Bornean and Sumatran populations, the EEP and all EEP participants must take immediate actions to bring orang-utans of both sexes in breeding situations, especially individuals that never bred in their lives (potential founders) and those at the top of the mean kinship lists (i.e. individuals with lower mean kinship coefficients) and that did not breed for a longer time period.

New priority? . . . Sumatran or Bornean

We need to carefully analyse and evaluate the situation that the Sumatran species is found to be critically endangered in the wild with only 5.000 - 7.000 remaining individuals in contrary to the Bornean species. It has to be examined if this will lead to a new priority in our breeding policy with limited space. With regard to the three or four Bornean subspecies in the wild (about 54.000 remaining individuals), we have been "mixing" these subspecies in our zoos for a long period of time, at this point, we estimate the chance to unravel the subspecific hybridisation of these Bornean orang-utans as very low, with only few exceptions. However, genetic analysing methods have to be established and performed to identify the possible pure and the majority of hybridized individuals of living Bornean orang-utans in our zoos. On the other hand, it has to be considered if such genetic analyses are of any help with respect to the fact that most of the natural rainforest habitats and consequently most of the remaining Bornean populations will disappear within the next 10 years in the wild.



Orang-utan

EEP Annual Report 2007 - 2008



2. Programme personnel

Species Coordinator

Clemens Becker (Karlsruhe)

Species Committee members

Warner Jens (Apeldoorn)

Wineke Schoo (Arnhem)

Sebastien Laurent (Bossiere-dore)

Istvan Vidakovits (Budapest)

Mark Pilgrim (Chester)

Ilona Schappert (Dortmund)

Achim Winkler (Duisburg)

Zdenka Jerabkova (Dvur-kralove)

Sandra Reichler (Heidelberg)

Neil Bemment (Paignton)

Marianne Holtkötter (Stuttgart)

Harald Schwammer (Wien-zoo)

Robert Zingg (Zurich)



Orang-utan

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3. Activities

Species Committee

Last election: 2007
Last meeting: 20 September 2008 Antwerpen

Conservation activities

Conservation activities 2008 (as far as reported to the coordinator)

- Amnéville Zoo: Financial support for the Sumatran Orang-utan Conservation Programm (SOCP): 15.000 € in 2008.
- Apeldoorn Zoo: Financial support to the Kinabatangan Orang-utan Conservation Programme (KOCP), based in Hutan, Sabah, Malaysia - a project which focuses on gaining a better understanding of orang utan ecology and disturbed forest and reduction of human-wildlife conflicts as well as engaging local communities in managing their own natural resources.
- Blackpool Zoo: Continued annual financial support of the Borneo Orangutan Survival Foundation (BOS) - £ 600 in 2008.
- Chester Zoo: Contributed core funding of £ 25 000 to the Kinabatangan Orang-utan Conservation Programme (KOCP), based in Sabah, Borneo and co-ordinated by the NGO Hutan. Hutan's long-term aim is the survival of the orang-utans and other major species in the forests of Sabah. Within the KOCP additional funding of £4990 was provided towards the Honorary Wildlife Warden scheme which trains and employs members of the local communities to participate in KOCP activities and provide active protection through regular patrols. Other additional specific funding within the KOCP was provided for the Hutan Education and Awareness Programme (HEAP) providing education/awareness activities to schools and communities in the region. Chester Zoo provided £2700 support for HEAP in 2008. Support was also provided to The Sumatran Orang-utan Society (£2000) for a programme to increase awareness concerning responsible ecotourism.
- Colchester Zoo: Continue to raise funds for BOS Great Britain
- Frankfurt Zoo / Zoological Society of Frankfurt: Bukit Tigapuluh (project manager: Dr. Peter Pratje).
- Gävle Zoo: Ing-Marie Persson and Ann Eklund at Furuviksparken Zoo have been designated for coordinators of S.O.S. Sumatran Orangutan Society and are hence part of their international team. This is an important mission that Furuviksparken Zoo will support. Donation of €4,000 to the S.O.S Sumatran Orangutan Society during 2008.
- Hamburg/Hagenbeck: Support for the BOS since 2001
- Jersey Zoo: Ongoing annual financial support for the SOCP for the amount of 8.000 £ per annum; Durrell hosted the SOCP veterinary surgeon for 3 months on the Diploma course run at the International Training Centre in Jersey.
- Neunkirchen Zoo: permanent WWF-exhibition.
- Osnabrück Zoo: Financial support for BOS Germany.
- Saint Aignan: Financial support to the Kinabatangan Orang-utan Conservation Programme (KOCP), based in Hutan, Sabah, Malaysia: €10.000
- Twycross Zoo: Financial support of BOS Great Britain for Orang-utan Rescue and Translocation, Betikap Valley, Borneo: £ 12.000.



Orang-utan

EEP Annual Report 2007 - 2008



Research activities 2008 (as far as reported to the coordinator)

- Isabelle Lackman-Ancrenaz and Marc Ancrenaz are undertaking long-term researches in the Kinabatangan Conservation Programme (KOCP) based in eastern Sabah, Borneo, and coordinated by the NGO Hutan. Hutan's long-term aim is the survival of the orang-utans and other major species in the forests of Sabah. The KOCP is a multi-faceted programme with the following aims: to maintain current orang-utan populations and to connect areas of viable habitat; to bring 100% of the Sabah orang-utans within protected areas or in secured and sustainably managed forests; to stop poaching as threat to orang-utan populations; to make economic development in areas encompassing orang-utan habitats compatible with the conservation of orang-utans; to raise the general level of awareness about orang-utan and the needs to protect its forest habitat at all society levels.
- Tony Weingrill: Reproductive Endocrinology of Orang-utans: Hormonal measurement in Bornean and Sumatran orang-utan faeces and urine; PhD-study to establish non-invasive techniques for the determination of the orang-utan's endocrine status; done in several EEP zoos; as part of intensive studies on orang-utans in Kalimantan and in zoos. Anthropological Institute, University of Zürich.
- Apeldoorn Zoo: Orangutan exhibit "Orangseum" design is put on the Zoolex website; research on computer communication skills of orang-utans
- Blackpool Zoo: Sarah Frost - Bsc Biomedical Sciences, "Using infrared photography to measure breathing rate in primates", University of Manchester, 2008
Alison Coupe - Bsc Animal Behaviour & Welfare, "Behavioural responses to olfactory enrichment in Bornean Orang-utans", Meyerscough College, 2007
Cath Howlison - Bsc Animal Biology, "Breeding, rearing and survival of orang-utan (*Pongo pygmaeus Pongo abelii*) in captivity", Staffordshire University, 2007
Sarah Fowkes, MSc Primate Conservation: "Effect of food presentation, preparation and type on the species-typical foraging behaviour of captive orangutans." Oxford Brookes University, 2007
- Chester Zoo: Four student research projects were conducted on the Sumatran orang-utans in 2008, three of which were undertaken towards undergraduate (B.Sc.) dissertations, and one as part of a Ph.D. One of the B.Sc. studies involved a comparison of the behaviour of captive and wild orang-utans; a second project was an investigation into the effect of food-related enrichment on the behaviour of the orang-utans (involving the use of food-hoppers to encourage arboreal feeding); a third project was related to the effect of visitors on the behaviour and enclosure use of the orang-utans. The Ph.D. project was carried out by a student of Dr Susannah K. Thorpe's, from Birmingham University, involving an investigation into ontogenetic development of positional behaviour in captive orang-utans. In addition to those four projects, various in-house visitor-related studies were conducted in the 'Realm of the Red Ape' exhibit, by staff from Chester Zoo's Education (Discovery and Learning Division) team, and short-term in-house behavioural monitoring of the Bornean orang-utans was undertaken by Chester Zoo's Research Officer from the Conservation and Science Division, Dr Sonya P. Hill.
- Colchester Zoo: Emily Williams - MSc Wildlife Biology and Conservation Thesis, "Measuring the effects of enclosure size, complexity and naturalness on the behaviour of captive orang-utans (*Pongo pygmaeus* and *Pongo abelii*) housed at four establishments throughout the UK", Napier University
- Gävle Zoo: The official opening of Lund University Primate Research Station Furuviik, including facilities specifically designed for non-invasive cognitive research on Sumatran orangutans, took place in June 2008. Researchers have been Mathias Osvath (scientific director) and Tomas Persson (deputy scientific director). Studies or observations of planning, bartering, discrimination learning, self-recognition, and initial responses to new living quarters have been made.
Osvath, M. & Osvath, H. (2008). Chimpanzee (*Pan troglodytes*) and orangutan (*Pongo abelii*) forethought: self-control and pre-experience in the face of future tool use. *Animal Cognition*, 11(4), 661-674.
Persson, T. (2008). Pictorial primates: A search for iconic abilities in great apes. Lund: Lund University Cognitive Studies, 136.
- Heidelberg Zoo: Treatment of two female Sumatran orang-utans with hormones, not published yet, done by Julia Scharpegge (Heidelberg Zoo) and Prof. Strowitzki (Universitätsfrauenklinik Heidelberg)
- Leipzig Zoo: Permanent Research on orang-utans done by Max Planck Institut EVA Leipzig.
- Münster Zoo: Christel Schneider has undertaken a PhD study: „Ontogenese of facial expression in Geater Apes.”
- Twycross Zoo: Goldsmiths College, London University: Programme level social learning in great apes. PhD
Aberystwyth University: A comparative study of play behaviour in the family Hominidae with reference to the evolution and function of play. BSc
Sheffield University: Primate life history and dental development. Post doc
Nottingham Trent University: The recognition of emotions in human and non-human primates in relation to social cognition. BSc

4. Publications

Studbook

- Recent edition: 2008
- Next edition: 2009

Husbandry guidelines

- Published in 2008.

CHESTER	0.3.0	0.0.0 (0.0.0)	2.0.0	0.0.0	0.0.0	0.0.0	1.0.0	1.3.0
DUBLIN	1.4.0	0.0.0 (0.0.0)	1.0.0	1.0.0	0.0.0	0.0.0	0.1.0	1.3.0
DUDLEY	1.2.0	0.0.0 (0.0.0)	1.0.0	0.0.0	0.0.0	0.0.0	0.0.0	2.2.0
DUISBURG	1.2.0	0.1.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.3.0
DVUR-KRALOVE	3.2.0	0.0.0 (0.0.0)	0.0.0	1.0.0	0.0.0	0.0.0	0.0.0	2.2.0
FUENGIROLA	2.1.0	0.0.0 (0.0.0)	0.1.0	0.0.0	0.0.0	0.0.0	0.0.0	2.2.0
KOLN	3.3.0	0.0.0 (0.0.0)	0.1.0	2.0.0	0.0.0	0.0.0	0.0.0	1.4.0
KREFELD	1.3.0	0.0.0 (0.0.0)	2.1.0	0.1.0	0.0.0	0.0.0	0.0.0	3.3.0
KRISTIANSAND	1.1.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.1.0
LES-MATHES	1.1.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.1.0
MADRID-ZOO	1.1.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.1.0
MASPALOMAS_NE	2.0.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	2.0.0
MOSKVA	2.2.0	0.0.0 (0.0.0)	0.0.0	1.0.0	0.0.0	0.0.0	0.0.0	1.2.0
MUNSTER	4.4.0	1.0.0 (1.0.0)	0.0.0	1.1.0	0.0.0	0.0.0	0.0.0	3.3.0
* NOVOSIBIRSK	0.0.0	0.0.0 (0.0.0)	2.0.0	0.0.0	0.0.0	0.0.0	0.0.0	2.0.0
NYIREGYHAZA	3.0.0	0.0.0 (0.0.0)	0.0.0	1.0.0	0.0.0	0.0.0	0.0.0	2.0.0
* OSNABRUCK	0.0.0	0.0.0 (0.0.0)	0.1.0	0.0.0	0.0.0	0.0.0	0.0.0	0.1.0
PAIGNTON	0.3.0	0.0.0 (0.0.0)	1.1.0	0.0.0	0.0.0	0.0.0	0.1.0	1.3.0
PARIS-JARDIN	2.3.0	0.0.0 (0.0.0)	0.2.0	0.2.0	0.0.0	0.0.0	1.0.0	1.3.0
RHENEN	4.3.0	2.0.0 (0.0.0)	0.0.0	1.0.0	0.0.0	0.0.0	1.0.0	4.3.0
ROSTOCK	2.1.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	2.1.0
ST-AIGNAN	3.6.0	2.0.0 (2.0.0)	0.0.0	0.1.0	0.0.0	0.0.0	1.0.0	2.5.0
ST-PETERSBURG	1.1.0	0.0.0 (0.0.0)	0.0.0	0.1.0	0.0.0	0.0.0	1.0.0	0.0.0
TWYCROSS	2.6.0	0.1.0 (0.1.0)	0.0.0	0.2.0	0.0.0	0.0.0	0.0.0	2.4.0
USTI-NAD-LABEM	2.1.0	1.0.0 (0.0.0)	0.0.0	1.0.0	0.0.0	0.0.0	0.0.0	2.1.0
WAREHAM	3.9.0	0.0.0 (0.0.0)	0.1.0	0.0.0	0.0.0	0.0.0	0.0.0	3.10.0
WIEN-ZOO	1.2.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.1.0	1.1.0
Total (38)	63.94.0	8.7.0 (3.4.0)	11.10.0	11.10.0	0.0.0	0.0.0	8.6.0	60.91.0

Hybrid orang-utan
Pongo pygmaeus HYBRID

New	No reply	Participants	Status 1 Jan.	Births (DNS)	EAZA zoos		non-EAZA zoos		Deaths	31. Dec.
					In	Out	In	Out		
		BASEL	0.1.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	0.1.0
		BERLIN-ZOO	0.1.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	0.1.0
		BOJNICE	1.0.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.0.0
		BOSSIERE-DORE	0.2.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	0.2.0
		COLCHESTER	1.0.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.0.0
		GDANSK	1.1.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.1.0
		LES-MATHES	0.2.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	0.2.0
		MADRID-ZOO	2.0.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	2.0.0
		MASPALOMAS_NE	1.0.0	0.0.0 (0.0.0)	0.0.0	1.0.0	0.0.0	0.0.0	0.0.0	0.0.0
		OSNABRUCK	1.0.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.0.0
		ROMA	0.3.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	0.3.0
		ROMANECHÉ	1.1.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.1.0
		ROSTOCK	0.1.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	0.1.0
*		SAOPAULO_NE	0.0.0	0.0.0 (0.0.0)	1.0.0	0.0.0	1.0.0	0.0.0	0.0.0	2.0.0
		USTI-NAD-LABEM	1.0.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.0.0
		WROCLAW	1.0.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.0.0
		WUPPERTAL	1.3.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.3.0
		Total (17)	11.15.0	0.0.0 (0.0.0)	1.0.0	1.0.0	1.0.0	0.0.0	0.0.0	12.15.0



Orang-utan EEP Annual Report 2007 - 2008



Summary

Orang-utans are held in 67 European institutions on 31 December 2008 (including Ramat-Gan/Israel, Johannesburg/South Africa and Sao Paulo/Brazil) that are members of the Orang-utan EEP. Four additional zoos (Tierpark Berlin, Bristol, Rotterdam and Tallinn) participate without animals. Some other holders are not EEP participants (ex. Belgrad, Las Aguilas, Monaco, Madrid Rescue, circuses).

On 31 December 2008, 320 (122.198) orang-utans were held in EEP zoos. Of these 47,2% are of the Bornean subspecies, 44,4 % are of the Sumatran subspecies and 8,4% are hybrids.

In total (2007 and 2008), 27 animals were born (10 did not survive), and 21 other animals died (ages between 17 months and 47 years). In 2007 and 2008, there were 39 transfers, all of them within the EEP-region, and one additional transfer to a new EEP-participant (Sao Paulo, Brazil).

Bornean orang-utans:

At the end of 2008 35 participants kept 151 (60.91) Bornean orang-utans. The age of the 23 wild born Borneans (6.17) varies between 15 and 48 years. Of these 4 animals are up to 20 years of age, whereas 19 are 21 or older. The 128 (54.74) zoo-born animals are up to 38 years of age. In 2007 and 2008 there had been 8.7 animals born in Europe from which 5.3 survived. Other 8.6 animals died at the ages between 17 months and 47 years. 11.10 animals were transferred between EEP members.

Sumatran orang-utans:

At the end of 2008 29 EEP participants kept 142 (50.92) Sumatran orang-utans. The age of the remaining 8 wild born Sumatrans (4.4) varies between 45 and 52 years. These very old wild born animals will only be able to serve as founders of the Sumatran population for a few more years. In contrary to the Bornean orang-utans, no additional founders came into the population from other sources during the last decades. The 134 zoo-born animals (46.88) are up to 41 years of age. In 2007 and 2008 there had been 4.8 animals born in Europe of which 2.7 survived. 3.4 animals died at the ages between 2 and 45 years. 4.13 animals were transferred between EEP members.

Hybrid orang-utans:

Altogether 16 institutions (including: Sao Paulo, Brazil, as member of ALPZA) in the EEP hold 27 hybrid orang-utans (12.15) at the end of 2008. They are between 12 and 46 years old. No births and no deaths were recorded during the period 2004-2008. One hybrid was transferred to Sao Paulo.

Notes

Neil Bemment, Paignton Zoo, UK acts as vice coordinator.

Husbandry guidelines: The orang-utan SSP-Husbandry Manual was published in 2008 by Carol Sodano, Brookfield Zoo.

The paper on "Orang-utans: Distribution, species status and social system - consequences for the EEP management, the future husbandry and enclosure design" by Dr. Clemens Becker, drs. Tom de Jongh, Jan Vermeer, Neil Bemment and Mark Pilgrim (2008) is available from the EEP coordinator.



Bonobo

EEP Annual Report 2007 - 2008



1. Programme information

Bonobo

Pan paniscus

EEP established in 1985.

Goal(s)

Percentage of gene diversity 90% saved in 100 years.

Target population size A= 121 and B= 200

Additional comments

Bonobo EEP master plan:

In 2008 during the Great Ape TAG meeting in Frankfurt the species committee discussed a two-phased master plan for reorganising the complete Bonobo EEP group composition, mainly for reasons of genetic management. The main objective is to be able to avoid inbreeding and second, to avoid mixing high Mean Kinship animals with low Mean Kinship animals. In addition the scheme is designed to maximise breeding chances for the remaining potential founders in the population and the genetically underrepresented individuals. The first transfers were already effectuated in 2008, but the majority of transfers will take place in 2009 and 2010.

2. Programme personnel

Species Coordinator

Zjef Pereboom (Antwerpen)

Species Committee members

Frank Rietkerk (Apeldoorn)

André Schuele (Berlin-zoo)

Rüdiger Dmoch (Frankfurt)

Alex Sliwa (Köln)

Gerd Nötzold (Leipzig)

Marleen Huyghe (Mechelen)

Jan Vermeer (Romagne)

Marianne Holtkötter (Stuttgart)

John Ray (Twycross)

Andre Stadler (Wuppertal)

Behavioural advisor

Linda Van Elsacker (Antwerpen)

Veterinary advisor

Francis Vercammen (Antwerpen)

Wolfram Rietschel (Stuttgart)

General advisor

Jeroen Stevens (Antwerpen)



Bonobo

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3. Activities

Species Committee

Last election: No election ever held.
Last meeting: 20 September 2008 Antwerpen

Conservation activities

Although there are currently no centralized EEP conservation activities, all EEP institutions are encouraged to provide financial support to bonobo field conservation projects and to Lola Ya Bonobo, a bonobo sanctuary just outside Kinshasa (Lukuya) in the Democratic Republic of Congo. Lola ya Bonobo is the sanctuary of the NGO Les Amis des Bonobos du Congo (ABC), and is a member of the Pan African Sanctuary Alliance (PASA). The centre is run by Claudine André in partnership with the Congolese Ministry of Environment and housed 51 (31.20) bonobos at the end of 2006. Most bonobos arrived as orphans, and numbers have increased rapidly due to the war and the bushmeat trade. Lola ya Bonobo sanctuary receives over 15,000 visitors every year. Over half of the young Congolese who visit the sanctuary are part of an education program that collaborates with schools in Kinshasa. The sanctuary also organises visits for government officials, policy makers, and others responsible for the environment to encourage effective enforcement of the law to protect endangered species. More info at <http://www.bonoboscongo.net/>

Research activities

The following publications provide a good overview of ongoing research activities:

2008

- Boughner J, Dean M (2008) Mandibular Shape, Ontogeny and Dental Development in Bonobos (*Pan paniscus*) and Chimpanzees (*Pan troglodytes*) *Evolutionary Biology* 35(4): 296-308
- Csatádi, Katalin, Kristin Leus and Jeffrey J.M. Pereboom (2008). A brief note on the effects of novel enrichment on an unwanted behaviour of captive bonobos. *Applied Animal Behaviour Science* 112: 201-204.
- Dittami J, Katina S, Moestl E, et al (2008). Urinary androgens and cortisol metabolites in field-sampled bonobos (*Pan paniscus*) *General and Comparative Endocrinology* 155 (3): 552-557
- Harrison RM, Nystrom P (2008) Handedness in captive bonobos (*Pan paniscus*). *Folia Primatologica* 79 (5): 253-268
- Hauser B, Schulz D, Boesch C, et al. (2008). Measuring urinary testosterone levels of the great apes - Problems with enzymatic hydrolysis using *Helix pomatia* juice. *General And Comparative Endocrinology* 158(1): 77-86
- Hofreiter M, Kreuz E, Eriksson J, Vigilant L, Hohmann G (submitted): Molecular evidence for meat-eating by bonobos.
- Hohmann G (submitted). The diets of non-human primates: frugivory, food processing, and food sharing.
- Hohmann G, Bauer J, Fowler A, Brace S, Kranz E, Ortmann S (submitted) Seed load, particle size, and fibre content in faeces of two large frugivore primates: bonobo (*Pan paniscus*) and chimpanzee (*P. troglodytes*).
- Hohmann G, Fruth B (2008). New records on prey capture and meat eating by bonobos at Lui Kotale, Salonga National Park, Democratic Republic of Congo. *Folia Primatologica* 79 (2): 103-110
- Legrain L, van Elsacker L, Iscoa JA (2008). How does a bonobo mother (*Pan paniscus*) manage a conflict between her son and one of her female coalition partners? Abstract in *Folia Primatologica* 79 (5): 349-350
- Mohneke M, Fruth B (submitted): Bonobo (*Pan paniscus*) estimation in the SW-Salonga National Park, DRC: common methodology revisited.
- Palagi E (2008) Sharing the motivation to play: the use of signals in adult bonobos. *Animal Behaviour* 75: 887-896 Part 3
- Stevens J.M.G., H. Vervaecke and L. Van Elsacker (2007). The Bonobo's Adaptive Potential: Social Relations under Captive Conditions In: Takeshi Furuichi and Jo Thompson (eds). *The Bonobos. Behavior, Ecology, and Conservation Developments in Primatology: Progress and Prospects*. Springer Verlag pp 19-38
- Uher J, Asendorpf JB (2008). Personality assessment in the Great Apes: Comparing ecologically valid behavior measures, behavior ratings, and adjective ratings. *Journal of Research in Personality* 42 (4): 821-838
- Uher J, Asendorpf JB, Call J (2008). Personality in the behaviour of great apes: temporal stability, cross-situational consistency and coherence in response. *Animal Behaviour* 75: 99-112
- Uher J, Call J (2008). How the great apes (*Pan troglodytes*, *Pongo pygmaeus*, *Pan paniscus*, *Gorilla gorilla*) perform on the reversed reward contingency task II: Transfer to new quantities, long-term retention, and the impact of quantity ratios. - *Journal of Comparative Psychology* 122 (2): 204-212
- Vaglio S, Orioli L, Mauno U, et al. (2008). Conservation of Bonobos (*Pan paniscus*) through the Kyoto protocol: The establishment of the 'bonobo peace forest' in the Maringa-Lopori-Wamba region (Democratic Republic of Congo) Abstract in *Folia Primatologica* 79 (5): 394-394
- Van Coillie, S, P. Galbusera, A. Roeder, W. Schempp, J. Stevens, K. Leus G. Reinartz and J. Pereboom (2008). Molecular paternity determination in captive bonobos and the impact of inbreeding on infant mortality. *Animal Conservation*.
- Van Dongen M., Meuleman B., Koski S.E., et al. (2008). Bonobo (*Pan paniscus*) conflict management and reconciliation during potentially stressful situations. Abstract in *Folia Primatologica* 79 (5): 324-324
- Waller M.T., White F.J., Cobden A.K., et al (2008). Impact of fruit abundance on bonobo party composition and social structure. Abstract in *American Journal of Physical Anthropology*: Suppl. 46: 217-217
- White F.J., Waller M.T., Cobden A.K., et al. (2008). Lomako bonobo population dynamics, habitat productivity, and the question of tool use. Abstract in *American Journal of Physical Anthropology Suppl.* 46: 222-222

2007

- Aerts P., K. Schoonaert and K. D. Août (2007). Biomechanical analysis of arboreal locomotion in bonobos: Context, concepts and first results [Abstract]. *Comparative Biochemistry and Physiology - Part A: Molecular & Integrative Physiology* Volume 146, Issue 4, Page S146
- De Lathouwers M., Van Elsacker L. (2007) Successful behavioural adaptation of an orphaned bonobo juvenile: a case study. *International Zoo Yearbook* Vol. 41: 176-182.
- Dittami J, Stanislav K, Möstl E, Eriksson J, Machatschke IH and Hohmann G (2007). Urinary androgens and cortisol metabolites in field-sampled bonobos. *General and comparative endocrinology*.
- Gierstorfer C (2007). Peaceful primates, violent acts *Nature* 447(7145): 635-636
- Hare B, Melis AP, Woods V, Hastings and Wrangham (2007). Tolerance allows bonobos to outperform chimpanzees on a cooperative task. *Current Biology* 17, 619-623.
- Hirata, S., Tashiro Y (2007). Bonobos at the "Lola Ya Bonobo" Sanctuary in the Democratic Republic of the Congo. *PAN AFRICA NEWS*. 2007. 14(1): 6-8
- Hohmann, G., Fruth, B. (2007). New records on prey capture and meat eating by bonobos at Lui Kotale, Salonga National Park, democratic republic of Congo. *Folia Primatologica*.
- Inogwabini, B., Matungila, B., Mbende L, Abokome M and wa Tshimanga, T. (2007) Great apes in the Lake Tumba landscape, Democratic Republic of Congo: newly described populations. *Oryx* 41, 1-7.
- Johnson EM (2007). Lack of inbreeding avoidance and reduction of alliance formation in matrilineally-housed bonobos (*Pan paniscus*). *American Journal of Physical Anthropology*. (Suppl 44): 137
- Lieberman DE ; Carlo J ; Ponce de Leon M ; Zollikofer CPE (2007). A geometric morphometric analysis of heterochrony in the cranium of chimpanzees and bonobos. *Journal of Human Evolution*. 52(6): 647-662
- Lyn H (2007). Mental representation of symbols as revealed by vocabulary errors in two bonobos (*Pan paniscus*). *Animal cognition* 10(4): 461-465
- McGrew, W.C., Marchant L.F., Beuerlein, M.M., Vrancken, D., Fruth, B., Hohmann, G. (2007). Prospects for bonobo insectivory: Lui kotal, Democratic Republic of Congo. *International Journal of Primatology* 28 (6): 1237-1252
- McGrew, W.C., Marchant, L.F., Beuerlein, M.M., and Vraneken, D. (2007). Prospects for bonobo insectivory: what's on the menu at Lui Kotal. *American Journal of Physical Anthropology Suppl.* 44: 168-169
- Paoli T ; Tacconi G ; Borgognini Tarli SM ; Palagi E (2007). Influence of feeding and short-term crowding on the sexual repertoire of captive bonobos (*Pan paniscus*). *Annales Zoologici Fennici*. 44(2) : 81-88

- Parker I (2007). Swingers: bonobos are celebrated as peace-loving, matriarchal, and sexually liberated. Are they? *New Yorker*. 83(21): 48-61
- Pika, S. & Zuberbühler, K. (2007). 'Social games between bonobos and humans: Evidence for shared intentionality?' *American Journal of Primatology*, 69: 1-9.
- Pollick AS, de Waal FBM (2007). Ape gestures and language evolution. *Proceedings of the National Academy of Sciences of the United States Of America* 104(19): 8184-8189
- Savage-Rumbaugh, S., Wamba, K., Wamba, P., and Wamba, N. (2007) Welfare of Apes in Captive Environments: Comments on, and by, a Specific Group of Apes. *Journal of Applied Animal Welfare Science* 10, 7-19.
- Schweigert, F.J., Gerike, B., Raila, J., Haebel, S., and Eulenberger, K. (2007) Proteomic Distinction between Humans and Great Apes Based on Plasma Transthyretin Microheterogeneity. *Comparative Biochemistry and Physiology D-Genomics & Proteomics* 2, 144-149.
- Stevens JMG, Vervaecke H, de Vries H, et al. (2007). Sex differences in the steepness of dominance hierarchies in captive bonobo groups. *International Journal of Primatology* 28(6): 1417-1430
- Stumpf R (2007). Chimpanzees and bonobos: diversity within and between species. In: *Primates In Perspective*. Campbell CJ, Fuentes A, MacKinnon KC, Panger M, Bearder SK, Editors. New York: Oxford Univ Press pp 321-344.
- Vigilant L (2007). Bonobos. *Current Biology* 2007 Feb 6;17 (3):R74-5
- White FJ and Wood KD (2007). Female feeding priority in bonobos, *Pan paniscus*, and the question of female dominance. *American Journal of Primatology* 69, 837-850.

4. Publications

Studbook

Recent edition: 2007
Next edition: 2010

Husbandry guidelines

Published in 1997.

5. Status

Status and developments over the year 2007 - 2008

Bonobo
Pan paniscus

New	No reply	Participants	Status 1 Jan.	Births (DNS)	EAZA zoos		non-EAZA zoos		Deaths	31. Dec.
					In	Out	In	Out		
		APELDOORN	2.8.0	0.0.0 (0.0.0)	3.1.0	0.2.0	0.0.0	0.0.0	1.0.0	4.7.0
		BERLIN-ZOO	3.2.0	1.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	1.0.0	3.2.0
		FRANKFURT	3.7.0	2.2.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	1.0.0	4.9.0
		KOLN	3.5.0	0.0.0 (0.0.0)	0.0.0	0.1.0	0.0.0	0.0.0	0.0.0	3.4.0
		LEIPZIG	3.3.0	0.1.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	3.4.0
		MECHELEN	5.4.0	0.0.0 (0.0.0)	0.2.0	3.1.0	0.0.0	0.0.0	1.0.0	1.5.0
		STUTT GART	7.8.0	0.1.0 (0.0.0)	0.1.0	0.0.0	0.0.0	0.0.0	0.0.0	7.10.0
		TWY CROSS	4.7.0	1.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	5.7.0
		WUPPERTAL	5.3.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	5.3.0
		Total (9)	35.47.0	4.4.0 (0.0.0)	3.4.0	3.4.0	0.0.0	0.0.0	4.0.0	35.51.0

Summary

STATUS OF THE CAPTIVE POPULATION

The international studbook currently comprises 400 registered bonobos, of which 224 are living on 31 December 2008. The number of managed captive bonobos on that date was 86 (35.51) in the EEP and 86 (38.48) in the SSP. The non-managed population comprises captive bonobos known to the studbook keeper that are not managed by either the SSP or the EEP, i.e. the 60 odd bonobos kept in the Lola Ya Bonobo Sanctuary (Kinshasa, Lukuya) in DRC (December 2008), and one potential founder male owned by Circus Rech in France.

Overall, there has been a net increase of 7 animals (13 births, 6 deaths) in the managed population since 31 December 2006, the currentness of last version of the international studbook. The SSP and EEP populations are exactly equal in size (n=86), have similar sex ratios (41% males vs 44% males), and the same proportion (18%) of wild to captive born animals. Group sizes range from 2 (Morelia) to 21 (Milwaukee) with an average of 9 animals (4.5) in the EEP and SSP.

AGE DISTRIBUTION (EEP & SSP)

The age distribution graphs for the EEP and SSP show that the proportion of younger age classes is under represented. There's an apparent gap in breeding-aged males, which in the SSP is magnified by six vas-clipped males in this age category. Note also that wild born animals (founders and potential founders) in the population are getting older.



Bonobo

EEP Annual Report 2007 - 2008



FOUNDER EVOLUTION 1992-2008 (Global Population)

The bonobo captive world population started breeding in captivity in 1962, and the current population is derived from a total of 35 wild born individuals or founders. Founders are defined as wild born individuals that have at least one descendant in the current population. Potential founders are wild born individuals that have no living descendants yet. All founders and potential founders in this population are considered to be unrelated to each other since they originated from at least four distinct populations located east to west across the bonobos' range in DRC, and from a period of over 30-years (Reinartz et al, 2000). Also, wild-caught bonobos do not appear to have come from severely inbred populations with high levels of individual homozygosity.

INBREEDING

Assuming that founders are unrelated, approximately 90% (n=154) of the living population (n=172) shows an inbreeding coefficient (F) of zero. The mean inbreeding coefficient in the EEP is 0.021, in the SSP 0.018. Note that most inbred individuals are relatively young: 13 out of 18 are aged 8 years or younger.



Common chimpanzee

ESB Annual Report 2007 - 2008



1. Programme information

Common chimpanzee

Pan troglodytes

ESB established in 2007.

Goal(s)

Percentage of gene diversity 90% saved in 100 years.

Additional comments

Target population goal for generic chimpanzees is 0.

Strategy for generic population: Refer to the 'Programme summary' section further on in this report.

2. Programme personnel

European Studbook Keeper

Frands Carlsen (Kobenhavn-zoo)

3. Publications

Studbook

Recent edition: 2007

Next edition: 2009

Husbandry guidelines

Not yet published.

4. Status

Status and developments over the year 2007 - 2008

Common chimpanzee
Pan troglodytes

New	No reply	Participants	Status 1 Jan.	Births (DNS)	EAZA zoos		non-EAZA zoos		Deaths	31. Dec.
					In	Out	In	Out		
*		ALMATY	1.2.0	1.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	2.2.0
*		ALMERE	12.9.0	0.0.0 (0.0.0)	0.0.0	0.0.0	5.1.0	0.0.0	0.1.0	17.9.0
*		AMERSFOORT	1.2.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.2.0
*		AMSTERDAM	3.7.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	3.7.0
*		ANTWERPEN	5.4.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	5.4.0
*		ARNHEM	2.12.0	1.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	1.0.0	2.12.0
*		ATHINAI	0.0.0	0.0.0 (0.0.0)	2.3.0	0.0.0	0.0.0	0.0.0	0.0.0	2.3.0
*		AUGSBURG	2.0.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	2.0.0
*		BARCELONA-ZOO	3.7.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.1.0	0.1.0	3.5.0
*		BELFAST	2.4.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	2.4.0
*		BERLIN-ZOO	2.3.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	2.3.0
*		BOJNICE	1.0.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.0.0
*		BORAS	1.4.0	0.2.1 (0.1.1)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.5.0
*		BRATISLAVA	1.2.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.2.0
*		BREMERHAVEN	3.3.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	3.3.0
*		BRNO	1.3.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.3.0
*		BUSSOLENGO	7.9.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	1.1.0	6.8.0
*		CHAMPREPUS	1.1.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.1.0
*		CHESTER	8.22.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.1.0	8.21.0
*		COLCHESTER	3.4.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	3.4.0
*		COLWYN-BAY	7.6.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	1.0.0	6.6.0
*		DARICA	6.4.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	6.4.0
*		DEIGNE	1.4.1	0.0.1 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.2.0	1.2.2
*		DOMPIERRE	1.3.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.3.0
*		DUBLIN	3.6.0	0.0.0 (0.0.0)	0.0.0	0.3.0	0.0.0	0.0.0	1.1.0	2.2.0
*		DUDLEY	0.7.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	0.7.0
*		DVUR-KRALOVE	1.5.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.5.0
*		EDINBURGH	4.5.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	4.5.0
*		FARJESTADEN	0.4.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	0.4.0
*		FUENGIROLA	2.5.0	0.2.0 (0.1.0)	0.0.0	1.0.0	0.0.0	0.0.0	0.0.0	1.6.0
*		GAVLE	1.3.0	0.0.0 (0.0.0)	0.1.0	0.0.0	0.0.0	0.0.0	0.0.0	1.4.0
*		GDANSK	2.5.0	1.1.1 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	1.0.0	2.6.1
*		GELSENKIRCHEN	5.3.0	2.1.0 (0.1.0)	0.0.0	1.0.0	0.0.0	1.0.0	0.0.0	5.3.0
*		GIVSKUD	2.5.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	2.0.0	0.5.0
*		GOSSAU	2.8.0	3.1.1 (0.0.1)	0.0.0	0.0.0	0.0.0	0.1.0	0.0.0	5.8.0
*		HALLE	1.1.0	0.0.0 (0.0.0)	0.1.0	0.1.0	0.0.0	0.0.0	1.0.0	0.1.0
*		HANNOVER	2.5.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	2.5.0
*		HEIDELBERG	3.3.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	1.0.0	2.3.0
*		HILVARENBEEK	2.1.0	0.0.0 (0.0.0)	0.0.0	0.0.0	3.2.0	0.0.0	0.1.0	5.2.0
*		JEREZ-FRONTERA	1.2.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.2.0
*		JERUSALEM	6.8.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.1.0	6.7.0
*		KARLSRUHE	1.2.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.2.0
*		KESSINGLAND	1.1.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.1.0
*		KOBENHAVN-ZOO	0.2.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	0.2.0
*		KOLMARDEN	11.13.0	0.3.2 (0.0.0)	0.0.0	0.1.0	0.0.0	0.0.0	1.2.0	10.13.2
*		KRAKOW	3.2.0	0.0.0 (0.0.0)	1.1.0	2.0.0	0.0.0	0.0.0	0.1.0	2.2.0
*		KREFELD	1.2.0	1.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	2.2.0
*		KRISTIANSAND	5.5.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	5.5.0
*		LA-FLECHE	1.2.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.2.0
*		LANDAU	1.3.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.3.0

*	LEIPZIG	1.3.0	0.1.0 (0.0.0)	0.1.0	0.1.0	0.0.0	0.0.0	0.1.0	1.3.0
*	LES-MATHES	4.6.0	0.2.2 (0.1.1)	0.0.0	0.0.0	0.0.0	0.0.0	0.1.0	4.6.1
*	LIBEREC	4.5.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	4.5.0
*	LISBOA-ZOO	1.9.0	1.1.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	2.10.0
*	LJUBLJANA	3.5.0	1.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	2.1.0	2.4.0
*	MADRID-ZOO	5.4.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	5.4.0
*	MAGDEBURG	0.1.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	0.1.0
*	MALTON	1.2.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.2.0
*	MUNCHEN	3.3.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	3.3.0
*	MUNSTER	5.5.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.1.0	5.4.0
*	MYKOLAYIV	1.3.0	0.2.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.1.0	0.0.0	1.4.0
*	NEUWIED	2.3.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	2.3.0
*	NORDHORN	1.3.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.3.0
*	ODENSE	3.4.0	0.0.2 (0.0.2)	0.0.0	0.1.0	0.0.0	0.0.0	1.1.0	2.2.0
*	OSNABRUCK	2.2.0	0.1.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	2.3.0
*	OSTRAVA	0.4.0	0.0.0 (0.0.0)	1.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.4.0
*	PELISSANE	1.2.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.2.0
*	PLAISANCE-TOUCH	2.3.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	2.3.0
*	PLZEN	1.6.0	0.1.0 (0.1.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.6.0
*	PUERTO-CRUZ	1.3.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.3.0
*	RAMAT-GAN	2.10.0	2.1.1 (0.0.1)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	4.11.0
*	ROMA	2.3.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	2.3.0
*	ROMANECHÉ	0.2.0	0.0.0 (0.0.0)	0.0.0	0.0.0	1.1.0	0.0.0	0.0.0	1.3.0
*	ROSTOCK	1.1.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.1.0
*	SANTILLANA	1.1.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.1.0
*	SIGÉAN	2.6.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	2.6.0
*	ST-AIGNAN	4.10.1	0.1.0 (0.0.0)	0.0.0	1.1.0	0.0.0	0.0.0	0.0.1	3.10.0
*	ST-MARTIN-PLAIN	7.8.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.1.0	0.0.0	0.0.0	7.9.0
*	STRAUBING	3.0.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	3.0.0
*	STUTTGART	0.2.0	0.0.0 (0.0.0)	0.0.0	0.2.0	0.0.0	0.0.0	0.0.0	0.0.0
*	SAARBRUCKEN	2.3.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	2.3.0
*	TALLINN	1.2.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.2.0
*	TWYXCROSS	12.17.0	0.1.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.1.0	12.17.0
*	VALENCIA-PARC	0.0.0	1.0.0 (1.0.0)	3.3.0	0.0.0	0.0.0	0.0.0	0.0.0	3.3.0
*	VALENCIA-ZOO	2.3.0	0.0.0 (0.0.0)	0.0.0	2.3.0	0.0.0	0.0.0	0.0.0	0.0.0
*	VESZPREM	1.1.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.1.0
*	* WAREHAM	24.28.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	24.28.0
*	WARSAWA	3.0.0	0.0.0 (0.0.0)	0.3.0	0.0.0	0.0.0	0.0.0	1.0.0	2.3.0
*	WHIPSNADÉ	6.3.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	2.1.0	4.2.0
*	WROCLAW	2.4.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	2.4.0
*	WUPPERTAL	1.1.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.1.0
*	ZAGREB	2.2.0	0.1.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	2.3.0
	Total (92)	254.406.2	14.22.11 (1.5.6)	7.13.0	7.13.0	9.5.0	1.3.0	16.19.1	259.406.6

Summary

Strategy for future management of chimpanzees in EAZA (Carlsen and De Jongh, 2006)

In recent years there has been a trend in European collections towards moving away from chimpanzees, *Pan troglodytes*, in favour of bonobos, *Pan paniscus*, and/or other species of great apes. Bonobos have definitely been the fashion for some time and the lack of a coordinated breeding programme for chimpanzees has not brought the species any advantages in this "competition". The relatively large number of reproductively viable chimpanzees in the generic population and the institutional wish for infants as visitor magnets has led to a historical overproduction of chimpanzees and a lack of sufficient space to accommodate the growing population. The way the species has been managed historically in zoos, focusing on extended family groups and not experimenting with multi-male groups, which are part of the natural history of the species, has also resulted in a large group of surplus males.

Today several institutions are desperately trying to transfer even identified western chimpanzee (*P. t. verus*) specimens to substandard non-EAZA institutions or trying to "re-export" surplus animals to Africa (PASA sanctuaries or other institution) in order to move forward with their collection plans often concentrating on other species of great apes. The present situation on the African continent with a huge number of annual confiscations of chimpanzees mainly as a bi-product from the bushmeat trade makes this effort highly immoral and has been condemned both by the EEP and the EAZA Great Ape TAG. EAZA surplus problems should mainly be solved inside the regional association.

The surplus situation has further been aggravated by a large number of laboratory chimpanzees needing transfer to new non-laboratory facilities because most biomedical experiments on chimpanzees in Europe are now illegal as a result of new national and EU legislation. The inclusion of these chimpanzees on the surplus market has created a serious problem for zoos as on the one hand they disrupt the market for surplus zoo chimpanzees and on the other hand, since many of them are pure subspecies, they are valuable for present and potential future breeding programmes.

Years ago it was decided by the EEP Committee that management of the European chimpanzee population was urgently needed. There was no precise overview of the historical or extant population, split on different subspecies and the level of hybridisation. In AZA and ARAZPA chimpanzees are managed on the species level because:

- It proved difficult to distinguish between the four recognized subspecies;
- The historical lack of management presumably has led to some level of hybridisation between the subspecies;
- The goal of the programme was self-sustaining populations for conservation education not reintroduction.

EAZA in contrast decided to aim for an EEP for the western chimpanzee for the following reasons:

- Based on import history it was assumed that most wild caught chimpanzees imported to Europe came from within the range of this subspecies;
- Western chimpanzees differ sufficiently from the other subspecies to the extent that it has been proposed to make this a species of its own;
- The wild population of western chimpanzees is extremely fragmented and endangered and a long term reintroduction effort cannot be dismissed.

Thus the initial EAZA priority was to identify pure western chimpanzees for an EEP in favour of establishing a generic ESB for the entire species. The EEP was established in 2002. This was done somewhat prematurely, before a full survey of the population was conducted and the testing of selected specimens was concluded, primarily to protect the already identified specimens from unwanted transfers. This approach has led to a situation with an existing EEP without breeding and transfer recommendations because the programme is not yet fully established.

To counteract the development with a growing number of surplus chimpanzees as described above the Western chimpanzee EEP proposed the following set of actions:

- Establishing a generic studbook for chimpanzees to get a full overview on the present and historical chimpanzee population in Europe including all specimens that have not (yet) been identified and start an active breeding program with all known *P. t. verus* specimens.
 - »» Once a new test for a more precise identification of chimpanzee subspecies is ready and can be applied, additional specimens that are tested as pure *P. t. verus* can be 'upgraded' to the EEP. Also, the potential for an additional EEP for any of the other subspecies can be evaluated.
- An instant breeding moratorium on chimpanzees including:
 - »» No breeding with identified subspecies hybrids*. Identified hybrids should be sterilised or otherwise contracepted.
 - »» No breeding between specimens of proven different subspecies (hybridisation)*.
 - »» No breeding with specimens of unidentified subspecies*. Specimens that can be tested should be tested as soon as possible. Chimpanzees that have not yet been tested should not be sterilised or castrated but otherwise contracepted by reversible methods. »» In mixed multi-male breeding groups, where part of the females are *P. t. verus* and there are both *P. t. verus* males and males that belong to other unidentified subspecies, irreversible contraception of the latter should be avoided to maintain the option of starting future breeding programmes for other subspecies.
- An increased effort to establish multi-male bachelor groups building on experiences from existing bachelor groups at La Vallée des Singes and Monkey World.
- Encouraging zoos with suitable facilities to keep more males within their mixed sex groups. Introductions of extra males in groups with existing α -males are normally problematic and should be pursued with great caution and only with the necessary expert advice.
- Encouraging an increase in the EAZA zoo capacity for chimpanzees to solve the problem with a valuable stock of surplus chimpanzees from the biomedical laboratories without creating further problems for surplus zoo chimpanzees.
- Solving the subspecies identification issue by:
 - »» Developing of new method for identification of the subspecific or hybrid status of all chimpanzees in the European population.
 - »» If a new method can identify the parentage of existing hybrids this may also help identify the subspecific status of the historical population.

The breeding moratorium could include introducing western chimpanzee males and one or two western chimpanzee females into existing groups, giving all other females implants and sterilize other males. This would ensure a continued opportunity to breed, for the benefit of the social structure in the group and the attraction of visitors. Breeding would be strictly managed for a self-sustaining target population.

This would provide a smooth, long term process of changing to a pure western chimpanzee group by phasing out hybrids, without the need to find surplus accommodation elsewhere. In addition to the few new zoos starting with chimpanzees, many zoos with existing populations could contribute with solving the surplus problem.

As both bonobos and gorillas are not easily available for new institutions we hope that the scenario as laid out here could help solve the chimpanzee problem and once again make this fascinating species an attractive choice in collection planning.

* at the EAZA Western chimpanzee EEP/Great Ape TAG meetings in Madrid, October 2006, it was decided that very limited breeding for welfare issues with non-*verus* specimens can be permitted in agreement with the coordinators.



Western chimpanzee

EEP Annual Report 2007 - 2008



1. Programme information

Western chimpanzee

Pan troglodytes verus

EEP established in 2002.

Goal(s)

Percentage of gene diversity 90% saved in 100 years.

Target population size A= 250 and B= 500

Additional comments

Strategy for future management of chimpanzees in EAZA

The initial EAZA priority was to identify pure western chimpanzees for an EEP in favour of establishing a generic ESB for the entire species. The EEP was established in 2002. This was done somewhat prematurely, before a full survey of the population was conducted and the testing of selected specimens was concluded, primarily to protect the already identified specimens from unwanted transfers.

This approach led to a situation with an existing EEP without breeding and transfer recommendations because the programme was not yet fully established. To counteract the development with a growing number of surplus chimpanzees as described above the studbook for generic chimpanzees was established to get a full overview of the present and historical chimpanzee population in Europe including all specimens that have not (yet) been identified.

Once a new test for a more precise identification of chimpanzee subspecies is developed and can be applied, additional specimens that are tested as pure *P. t. verus* can be 'upgraded' to the EEP. Also, the potential for an additional EEP for any of the other subspecies can be evaluated.

To counteract a development with a growing number of surplus chimpanzees the following set of actions has been proposed by the EEP/ESB and endorsed by the Great Ape TAG:

An instant breeding moratorium on chimpanzees including:

- No breeding with identified subspecies hybrids*. Identified hybrids should be sterilised or otherwise contracepted.
- No breeding between specimens of proven different subspecies (hybridisation)*.
- No breeding with specimens of unidentified subspecies*.
- Specimens that can be tested should be tested as soon as possible.
- Chimpanzees that have not yet been tested should not be sterilised or castrated but otherwise contracepted by reversible methods. In mixed multi-male breeding groups, where part of the females are *P. t. verus* and there are both *P. t. verus* males and males that belong to other unidentified subspecies, irreversible contraception of the latter should be avoided to maintain the option of starting future breeding programmes for other subspecies.
- An increased effort to establish multi-male bachelor groups building on experiences from existing bachelor groups at La Vallée des Singes and Monkey World.
- Encouraging zoos with suitable facilities to keep more males within their mixed sex groups. Introductions of extra males in groups with existing a-males are normally problematic and should be pursued with great caution and only with the necessary expert advice.

Solving the subspecies identification issue by:

Developing of new method for identification of the subspecific or hybrid status of all chimpanzees in the European population. If a new method can identify the parentage of existing hybrids this may also help identify the subspecific status of the historical population.

The breeding moratorium could include introducing western chimpanzee males and one or two western chimpanzee females into existing groups, giving all other females implants and sterilize other males. This would ensure a continued opportunity to breed, for the benefit of the social structure in the group and the attraction of visitors. Breeding would be strictly managed for a self-sustaining target population.

This would provide a smooth, long term process of changing to a pure western chimpanzee group by phasing out hybrids, without the need to find surplus accommodation elsewhere. In addition to the few new zoos starting with chimpanzees, many zoos with existing populations could contribute with solving the surplus problem.

* at the EAZA Western chimpanzee EEP/Great Ape TAG meetings in Madrid, October 2006, it was decided that very limited breeding for welfare issues with non-*verus* specimens can be permitted in agreement with the coordinators.



Western chimpanzee

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2. Programme personnel

Species Coordinator

Frands Carlsen (Kobenhavn-zoo)

Species Committee members

Raymond van der Meer (Amersfoort)

Janos Szantho (Amsterdam)

Tom de Jongh (Arnhem)

Wineke Schoo (Arnhem)

Cesare Avesani Zaborra (Bussolengo)

Sandra Reichler (Heidelberg)

Lars Versteegen (Hilvarenbeek)

Cornelia Bernhardt (Krefeld)

Gerd Nötzold (Leipzig)

Ute Magiera (Osnabruck)

Veterinary advisor

Wolfram Rietschel (Stuttgart)

General advisor

Kristin Leus (Kobenhavn-zoo)



Western chimpanzee

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3. Activities

Species Committee

Last election: 2007
Last meeting: 26 April 2008 Frankfurt

Conservation activities

Conservation status for Western chimpanzee:

Apart from the proposed subspecies from Nigeria and Cameroon, *P. t. verus* is the most endangered subspecies with an estimated population in the wild of between 21.000 and 56.000. Furthermore, the majority of the western chimpanzee population is located in the highly fragmented lowland forests from Guinea to Nigeria. The forests are among the most biologically diverse in the world and have been designated as one of 25 global biodiversity hotspots (Myers et al. 2000). Recent evidence of alarming decline of western chimpanzees in Côte D'Ivoire, one of the believed final strongholds of the species (Campbell et al 2008), underlines the need for urgent conservation measures for the subspecies.

CBSG PHVA

Efforts to arrange a CBBG PHVA workshop on a western chimpanzee subspecies range country has so far not been rewarded with success mainly due to lack of data, failing local support and political instability in the West African region. Efforts are ongoing and at present the opportunity of conducting a workshop in Sierra Leone is pursued. Present efforts to conduct a census of chimpanzees in Sierra Leone are outlined below.

At a PASA meeting in Freetown, Sierra Leone in 2007 the possibility of conducting a CBSG PHVA workshop for chimpanzees in Sierra Leone was discussed. The discussion amongst others revealed that there was insufficient, scientifically accurate, data on current chimpanzee numbers in Sierra Leone. No complete census of the chimpanzee population has been documented and the last formal estimate of the chimpanzee population was made in 1981 by Teleki and Baldwin who concluded that around 2,000 wild chimpanzees remained in the wild. Twenty-eight years have passed since that estimate was made and it has become increasingly urgent to determine a more accurate number.

Chimpanzee habitat here is continuing to be reduced as a result of encroachment through logging and much other human activity. A proposal for the census was prepared and gained approval from the Government of Sierra Leone. The project is coordinated by the Tacugama Chimpanzee Sanctuary in Freetown and all EEP institutions are encouraged to provide financial support for the project.

The goal and objectives of the project are:

CENSUS GOAL

The overall goal of the project is to provide accurate data and enhanced knowledge of the Western chimpanzee and increase the success of its long term conservation within Sierra Leone.

The census project will deliver accurate population size, distribution and density data so that appropriate plans for chimpanzee protection and conservation of their natural habitat and ecosystem can be established.

CENSUS OBJECTIVES

- Establish a baseline for understanding the current abundance and distribution of chimpanzees in Sierra Leone.
- Increase the capacity of Sierra Leoneans to identify, protect, monitor and manage important chimpanzee habitats.
- Collect data for the generation of a chimpanzee population and habitat viability assessment (PHVA), completion of the PHVA should be possible within a short timescale following the census.
- Determine the state of the ecosystem and of the vegetation in each survey location and document effects of human activity.
- Identify potential areas to be further investigated as suitable reintroduction sites for Tacugama Chimpanzee Sanctuary's rehabilitated chimpanzees.
- Provide input for the development of a chimpanzee conservation action plan for Sierra Leone.
- Provide a national sub-species data set that can be integrated with existing West African and African species knowledge.

The fieldwork is expected to be complete by the end of 2009. So far the project has received financial support from a wide range of donors and amongst them a larger number of EAZA members. For further information about the census project and updates please visit:
<http://www.tacugama.com/newsletters.html>

At the 2008 EAZA Annual Conference in Antwerp, Belgium the possibility of the EEP officially endorsing support for the activities of the Wild Chimpanzee Foundation (WCF) were discussed between a WCF representative and the Species Coordinator. This will finally be decided at the 2009 mid-year meeting in Budapest.

Research activities



Western chimpanzee

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Copenhagen Zoo has been involved in a comprehensive study on chimpanzee demography and evolution since 2006. An initial study of the CD4 virus-receptor gene (Hvilsom et al 2008) answered some questions, but did not provide all the results hoped for. Reflecting on previous studies we have developed new methods for genetic characterisation and analysis and identified new genetic markers, which alongside already known markers will be studied in chimpanzees representing all four recognised subspecies as part of a PhD project.

The results will give a complete description of the genetic differences between subspecies of chimpanzees, which will allow the answering of fundamental questions about the population structure of chimpanzees. Of interest is what characterises the subspecies, when did they become separate subspecies and are there continuous gene flow between them? Answers to these questions will provide basis for designing a “genetic tool” for assigning captive individuals to their populations of origin. This tool will also be used to understand how chimpanzees in a population (in situ or ex situ) are related to one another. Furthermore a deeper understanding of what factors shaped the evolution of the chimpanzee and what determines their evolution will be gained. The PhD project started in late 2008 and the preliminary results are promising. Testing of ex situ individuals is planned for late 2009-2010, where selected EEP/ESB individuals will be analysed.

Other publications:

- Becquet C. et al (2007): Genetic structure of chimpanzee populations. *PLoS Genet* 3(4): e66
- Campbell, G et al (2008): Alarming decline of West African chimpanzees in Côte d'Ivoire. *Current Biology* 18(19): R903-R904
- Carlsen, F. (2007): European Studbook for the chimpanzee: Western Chimpanzee (*Pan troglodytes verus*) EEP Volume II; Common Chimpanzee (*Pan troglodytes*) ESB Volume I. Copenhagen Zoo, Denmark
- Fischer A. Evidence for a Complex Demographic History of Chimpanzees. *Molecular Biology and Evolution*. 2004; 21(5):799-808.
- Gonder, K et al (2006): New genetic evidence on the evolution of chimpanzee populations and implications for taxonomy. *Int. J. Prim.* 27(4): 1103-1127
- Hvilsom, C. et al (2008): Genetic subspecies diversity of the chimpanzee CD4 virus-receptor gene. *Genomics* 92: 322–328
- Kormos R, et al (2003) West African Chimpanzees: Status Survey and Conservation Action Plan. IUCN, Gland, Switzerland.
- Kormos R, and C. Boesch (2005): Regional Action Plan for the conservation of chimpanzees in West Africa. Conservation International. Washington, DC.
- Won Y, Hey J. Divergence population genetics of chimpanzees. *Molecular biology and evolution*. 2005; 22(2):297-307.

4. Publications

Studbook

Recent edition: 2007

Next edition: 2009

Husbandry guidelines

Not yet published.

5. Status

Status and developments over the year 2007 - 2008

Western chimpanzee
Pan troglodytes verus

New	No reply	Participants	Status 1 Jan.	Births (DNS)	EAZA zoos		non-EAZA zoos		Deaths	31. Dec.
					In	Out	In	Out		
		AALBORG	2.4.0	2.0.1 (0.0.1)	0.0.0	1.0.0	0.0.0	0.0.0	0.0.0	3.4.0
		AMERSFOORT	4.11.0	0.1.0 (0.1.0)	0.0.0	1.0.0	0.0.0	0.0.0	1.1.0	2.10.0
		AMSTERDAM	0.1.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.1.0	0.0.0
		ARNHEM	3.4.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	3.4.0
		AUGSBURG	0.1.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	0.1.0
		BASEL	3.6.0	1.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.1.0	4.5.0
		BUSSOLENGO	2.0.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	2.0.0
		DEIGNE	0.2.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	0.2.0
		DUBLIN	0.2.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	0.2.0
*		EDINBURGH	2.0.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	2.0.0
		GAVLE	0.1.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	0.1.0
		GELSENKIRCHEN	1.3.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.3.0
		GIVSKUD	0.2.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	0.2.0
		GOSSAU	1.0.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.0.0
*		HALLE	0.0.0	0.0.0 (0.0.0)	1.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.0.0
		HEIDELBERG	0.1.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	0.1.0
		HILVARENBEEK	4.6.0	1.0.0 (0.0.0)	0.0.0	0.0.0	12.21.0	0.0.0	2.3.0	15.24.0
		KOBENHAVN-ZOO	2.6.0	1.1.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.2.0	3.5.0
		KREFELD	1.2.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.2.0
		LEIPZIG	7.13.0	0.1.1 (0.1.1)	0.0.0	1.0.0	0.0.0	0.0.0	0.0.0	6.13.0
		LIBEREC	0.1.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	0.1.0
		MAGDEBURG	1.0.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.0.0
		MUNCHEN	0.2.0	0.0.0 (0.0.0)	1.0.0	0.0.0	0.0.0	0.0.0	1.0.0	0.2.0
		MUNSTER	1.1.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.1.0	1.0.0
		ODENSE	0.4.0	0.0.0 (0.0.0)	1.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.4.0
		OSNABRUCK	0.3.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	0.3.0
		ROMAGNE	10.0.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	1.0.0	9.0.0
		ST-AIGNAN	0.1.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	0.1.0
		STUTT GART	1.1.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.1.0
*		WAREHAM	0.4.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.1.0	0.3.0
		Total (30)	45.82.0	5.3.2 (0.2.2)	3.0.0	3.0.0	12.21.0	0.0.0	5.10.0	57.94.0

Summary

The number of managed captive western chimpanzees grew from 137 (45.82) in 2006 to 151 (57.94) on 31 December 2008. 5.3.2 animals were born of which 0.2.2 died. 5.10.0 additional animals died during the period. 3.0 animals were transferred between EEP institutions and 12.21 animals were included in the EEP from a single non-EEP institution - the Biomedical Primate Research Centre in Rijswijk, The Netherlands. The number of deaths exceeds the number of births. This urgently stresses the need for establishing more breeding groups in the programme. This has so far proven to be a problem due to the joint management of the EEP and the ESB with many mixed groups, where a single or few western chimpanzees are in a non-breeding situation in a larger group of ESB animals. Efforts producing realistic transfer recommendations are ongoing for several years.



Western lowland gorilla

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1. Programme information

Western lowland gorilla

Gorilla gorilla gorilla

EEP established in 1987.

Goal(s)

Percentage of gene diversity 96% saved in 100 years.

Target population size A= 475 and B= 500

2. Programme personnel

Species Coordinator

Frank Rietkerk (Apeldoorn)

Species Committee members

Tom de Jongh (Arnhem)

Teresa Abello (Barcelona-zoo)

Bryan Carroll (Bristol)

Istvan Vidakovits (Budapest)

Richard Osterballe (Givskud)

Andreas Knieriem (Hannover)

Sandra Reichler (Heidelberg)

Neil Bemment (Paignton)

Jan Vermeer (Romagne)

Angela Glatston (Rotterdam)

Marianne Holtkötter (Stuttgart)

Robert Zingg (Zurich)

Veterinary advisor

Wolfram Rietschel (Stuttgart)

3. Activities

Species Committee

Last election: 2007

Last meeting: 5 September 2008 Antwerpen

Conservation activities

Not specified.

Research activities

Not specified.

4. Publications

Studbook

Recent edition: 2007

Next edition: 2009

Husbandry guidelines

Published in 2006.

5. Status

Status and developments over the year 2007 - 2008

Western lowland gorilla
Gorilla gorilla gorilla

New	No reply	Participants	Status 1 Jan.	Births (DNS)	EAZA zoos		non-EAZA zoos		Deaths	31. Dec.
					In	Out	In	Out		
		AMSTERDAM	1.3.0	4.0.0 (1.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	4.3.0
		ANTWERPEN	1.0.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.0.0
		APELDOORN	1.8.0	3.2.0 (1.1.0)	1.0.0	1.0.0	0.0.0	0.0.0	0.0.0	3.9.0
		ARNHEM	2.7.0	0.0.0 (0.0.0)	0.1.0	0.2.0	0.0.0	0.0.0	0.0.0	2.6.0
		BARCELONA-ZOO	3.7.0	0.0.0 (0.0.0)	0.0.0	0.1.0	0.0.0	0.0.0	0.0.0	3.6.0
		BASEL	3.7.0	0.0.0 (0.0.0)	0.0.0	1.0.0	0.0.0	0.0.0	0.0.0	2.7.0
		BEKESBOURNE	18.34.0	1.1.1 (0.0.1)	0.0.0	0.0.0	0.0.0	0.0.0	0.1.0	19.34.0
		BELFAST	3.3.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	3.3.0
		BERLIN-ZOO	1.5.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.5.0
		BLACKPOOL	1.3.0	0.0.0 (0.0.0)	1.0.0	1.0.0	0.0.0	0.0.0	0.0.0	1.3.0
		BOSSIERE-DORE	4.0.0	0.0.0 (0.0.0)	2.0.0	3.0.0	0.0.0	0.0.0	1.0.0	2.0.0
		BRISTOL	2.3.0	0.0.0 (0.0.0)	0.1.0	0.0.0	0.0.0	0.0.0	0.0.0	2.4.0
		BUDAPEST	2.2.0	0.0.0 (0.0.0)	0.1.0	0.0.0	0.0.0	0.0.0	0.0.0	2.3.0
*		CABARCENO	0.0.0	0.0.0 (0.0.0)	1.1.0	0.0.0	0.0.0	0.0.0	0.0.0	1.1.0
		CHESSINGTON	3.7.0	0.0.0 (0.0.0)	1.0.0	0.1.0	0.0.0	0.0.0	0.0.0	4.6.0
		DUBLIN	4.2.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	4.2.0
		DUISBURG	1.3.0	0.2.0 (0.0.0)	1.1.0	1.1.0	0.0.0	0.0.0	0.0.0	1.5.0
		DVUR-KRALOVE	1.2.0	0.0.0 (0.0.0)	0.1.0	0.0.0	0.0.0	0.0.0	0.1.0	1.2.0
		FASANO_NE	2.0.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	1.0.0	1.0.0
		FRANKFURT	2.6.0	1.0.0 (0.0.0)	1.0.0	0.1.0	0.0.0	0.0.0	1.1.0	3.4.0
		FUENGIROLA	1.2.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.1.0	1.1.0
		GIVSKUD	4.3.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	4.3.0
		HANNOVER	2.7.0	3.1.0 (2.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	3.8.0
		HEIDELBERG	2.3.0	1.1.0 (0.0.0)	0.0.0	1.0.0	0.0.0	0.0.0	0.0.0	2.4.0
		HILVARENBEEK	4.0.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	4.0.0
		JERSEY	2.4.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	1.0.0	1.4.0
*		JOHANNESBURG_NE	1.0.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.0.0
		KERKRADE	3.3.0	0.0.0 (0.0.0)	0.0.0	1.0.0	0.0.0	0.0.0	0.0.0	2.3.0
		KOLMARDEN	3.2.0	0.0.0 (0.0.0)	0.0.0	1.0.0	0.0.0	0.0.0	0.0.0	2.2.0
		KOLN	2.4.0	0.0.0 (0.0.0)	0.1.0	0.0.0	0.0.0	0.0.0	0.0.0	2.5.0
		KREFELD	1.4.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.4.0
		KREINGLBACH	4.0.0	0.0.0 (0.0.0)	0.0.0	1.0.0	0.0.0	0.0.0	0.0.0	3.0.0
		LEIPZIG	1.6.0	0.0.0 (0.0.0)	0.0.0	0.1.0	0.0.0	0.0.0	0.1.0	1.4.0
		LES-MATHES	3.2.0	2.0.0 (1.0.0)	0.0.0	1.0.0	0.0.0	0.0.0	0.0.0	3.2.0
		LISBOA-ZOO	1.2.0	0.0.0 (0.0.0)	1.1.0	0.0.0	0.0.0	0.0.0	1.0.0	1.3.0
		LONDON	1.1.0	0.0.0 (0.0.0)	0.2.0	0.0.0	0.0.0	0.0.0	1.0.0	0.3.0
		LYMPNE	16.8.0	0.1.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	16.9.0
		MADRID-ZOO	2.3.0	0.1.0 (0.0.0)	0.1.0	1.1.0	0.0.0	0.0.0	0.0.0	1.4.0
		MELBOURNE_NE	4.5.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.1.0	4.4.0
		MOSKVA	1.2.0	0.0.1 (0.0.1)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.2.0
		MUNCHEN	4.5.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	4.5.0
		MUNSTER	1.3.0	2.1.0 (1.0.0)	0.0.0	0.1.0	0.0.0	0.0.0	0.0.0	2.3.0
		NURNBERG	1.3.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.3.0
		OPOLE	3.0.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	3.0.0
		PAIGNTON	6.0.0	0.0.0 (0.0.0)	2.0.0	2.0.0	0.0.0	0.0.0	0.0.0	6.0.0
		PRAHA	2.4.0	3.0.0 (2.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	3.4.0
		PUERTO-CRUZ	7.0.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	7.0.0
		RAMAT-GAN	3.3.0	1.2.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	4.5.0
		ROMAGNE	5.5.0	1.1.1 (0.0.1)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	6.6.0
		ROMANECHÉ	1.0.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.0.0



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	ROSTOCK	1.1.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.1.0
	ROSTOV_NE	0.1.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	0.1.0
	ROTTERDAM	3.6.0	0.1.0 (0.0.0)	0.0.0	0.0.0	0.0.0	1.2.0	0.0.0	2.5.0
	ST-AIGNAN	2.4.0	1.3.0 (1.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	2.7.0
	ST-MARTIN-PLAIN	6.8.0	0.2.0 (0.1.0)	1.0.0	0.0.0	0.0.0	0.0.0	2.2.0	5.7.0
	STUTTGART	6.9.0	1.0.0 (1.0.0)	3.1.0	4.3.0	0.0.0	0.0.0	0.1.0	5.6.0
	SYDNEY_NE	4.7.0	1.0.0 (0.0.0)	0.0.0	0.2.0	0.0.0	2.0.0	0.0.0	3.5.0
	SAARBRUCKEN	1.2.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.2.0
	TWYXCROSS	4.6.0	0.1.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	3.3.0	1.4.0
*	VALENCIA-PARC	0.0.0	0.0.0 (0.0.0)	3.2.0	0.0.0	0.0.0	0.0.0	1.0.0	2.2.0
	WARMINSTER	1.1.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.1.0	1.0.0
*	WARSZAWA	0.0.0	0.0.0 (0.0.0)	2.0.0	0.0.0	0.0.0	0.0.0	0.0.0	2.0.0
	WUPPERTAL	1.4.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.4.0
	ZLIN	1.1.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.1.0
	ZURICH	4.5.0	1.1.0 (0.0.0)	0.0.0	1.0.0	0.0.0	0.0.0	0.0.0	4.6.0
	Total (65)	180.241.0	26.21.3 (10.2.3)	20.14.0	20.14.0	0.0.0	3.2.0	12.13.0	181.245.0
	Non-EAZA Institutions	1.0.0	0.0.0 (0.0.0)	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.0.0

Summary

The gorilla population managed within the framework of the Gorilla EEP decreased marginally during 2007 and then increased again during 2008, resulting in a net increase of less than 1% for the two year period. This was partly due to a higher than average neonatal mortality during these two years.

Three institutions joined the programme: Valencia Bioparc, Cabarceno and Warsaw. Kyiv is no longer in the programme but still has a single male. Two Australian zoos continue to participate in the EEP because the Australasian region does not (yet) have a breeding programme of its own. For the same reason, two South African zoos will also be allowed to join the EEP. Johannesburg already did so in 2008. A small number of gorillas left the EEP: 1.2 went from Rotterdam to Shanghai and Sydney sent two sub-adult males to Japan - one to Tokyo Ueno and one to Nagoya. The future of the gorilla population looks good. Maintaining gene diversity at 95% for 100 years is possible.

Notes

Maria Teresa Abello and Neil Bemment are the co-coordinators for the Western lowland gorilla EEP.